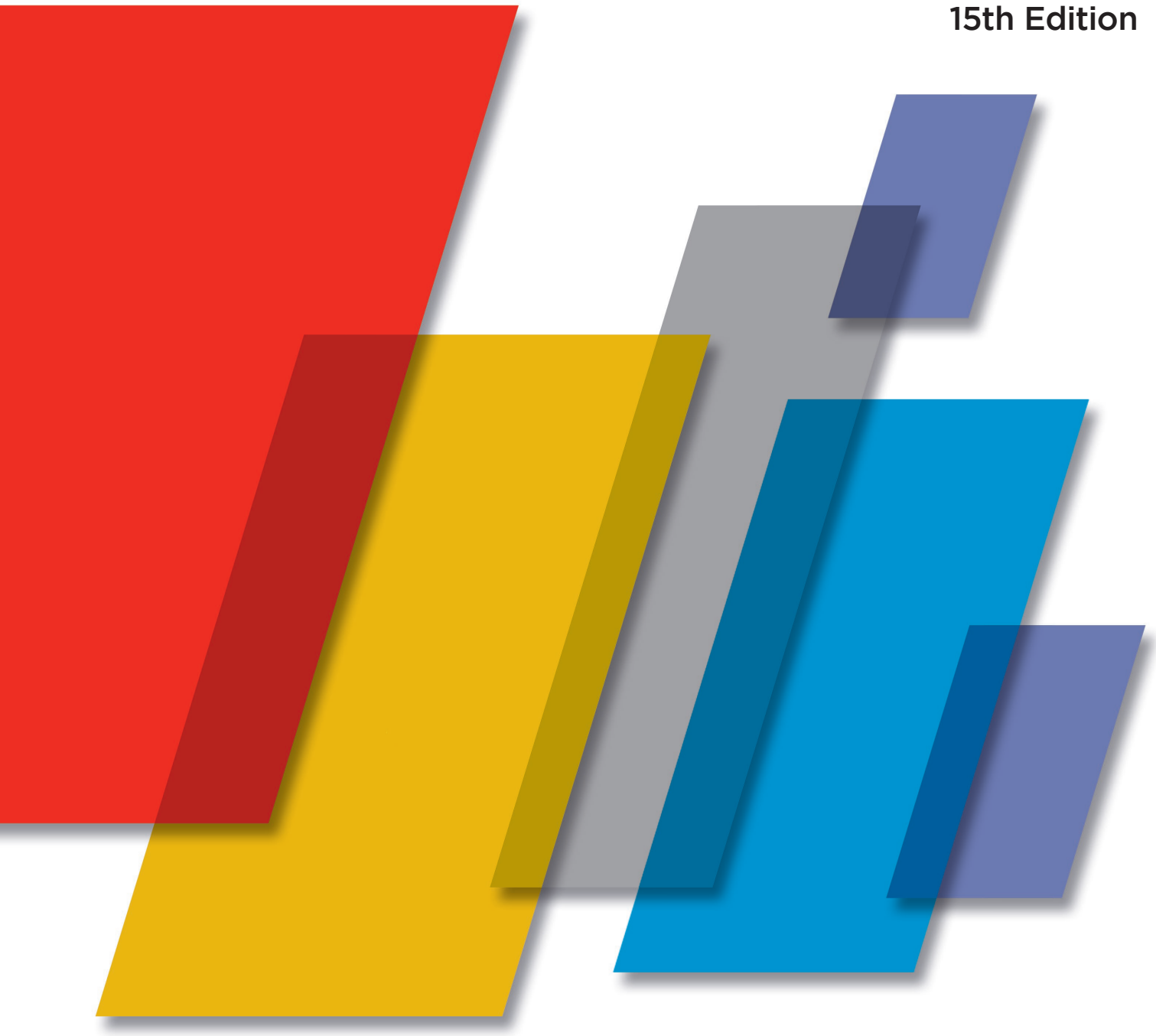
15th Edition



NGC Construction Guide™

National Gypsum®

Building Products For A Better Future®

National Gypsum Company is headquartered in Charlotte, North Carolina.

National Gypsum Company is the exclusive service provider of reliable, high-performance building products manufactured by its affiliate companies and marketed under the Gold Bond®, ProForm®, and PermaBASE® brands. The strategic network of Gold Bond, ProForm, and PermaBASE manufacturing facilities located throughout major metropolitan hubs in North America allows us to provide the best in customer service so we can keep your fast-paced projects moving forward.

Sustainability

Our manufacturers create products that contribute to sustainable design by providing healthy indoor air quality; moisture, mold and mildew management; durability; optimal acoustics; life safety and increased space functionality. No matter how you define sustainability, we offer the most comprehensive set of value-added solutions in the industry.

Sustainability Documentation

In support of NGC's commitment to building product manufacturer's transparency, health and environmental sustainability documents are available in our Design & Resource Center at: **nationalgypsum.com/design-resource-center**.

Recycled content data and manufacturing location data are available for products manufactured by Gold Bond Building Products, PermaBASE Building Products and ProForm Finishing Products based upon our current distribution plan and manufacturing location capabilities. Visit the Green Product Score website to learn more: **gps.nationalgypsum.com**.

Trusted Partner

The National Gypsum name has been synonymous with high-quality, innovative products and exceptional customer service since 1925. Our technical experts at 1-800-NATIONAL® are always a phone call away to answer any type of product or specification question.

We are Building Products for a Better Future® – one project at a time.

National Gypsum®

Exclusive service provider for products manufactured by Gold Bond Building Products, LLC, ProForm Finishing Products, LLC and PermaBASE Building Products, LLC.

Customer Support You Can Count On

Tap into technical support with a call to 1-800-NATIONAL®, place an order through our award-winning customer service center, or find the answers you want at our online Design & Resource Center, where the doors are always open. Our multi-pronged approach to technical support and customer service has one central focus: ***Helping you design and build better.***

1-800-NATIONAL

Have a unique situation or application involving gypsum-based materials, finishing products or cement board? Call our experts at 1-800-NATIONAL for assistance. A free phone call from anywhere in the U.S. and Canada puts you directly in touch with National Gypsum's technical information experts.

1-800-NATIONAL (1-800-628-4662)
8:00 a.m. – 4:45 p.m. ET | Monday-Friday
Email: **techservice@nationalgypsum.com**

Customer Service Center

The knowledgeable customer account specialists at our centralized customer service center will give you the personal attention you deserve when you place your orders and schedule your deliveries. Their efficient and friendly service is enhanced by our **ngc4me.com**® website, which allows you to monitor your order history, track the progress of your orders, even place new orders electronically.

Design & Resource Center

Whether you need information on the jobsite or in the middle of the night, it is hard to beat the convenience of our Design & Resource Center. It's always open and accessible by smartphone, tablet or laptop. From submittals and specifications to literature and technical resource guides, the site features a wide selection of information we know you will find valuable. Visit now at: **nationalgypsum.com/design-resource-center**.

The 1-800 Construction Services Team (left to right): Mark Chapman, Jim Farrell and Sam Halverson.

Testing and Research at Your Service

NGC Testing Services

Whether you want to test product performance and quality or confirm certifications, our comprehensive laboratory will handle everything from start to finish. We conduct our tests in accordance with ASTM, ULC, NFPA, UL, FM, ISO and more, and we can accommodate the largest full-scale specimens. Located in Buffalo, New York, our facility allows easy access to most North American metropolitan centers and the Canadian border.

Technology Innovation Center (TIC)

Where our research and development team generates exceptional product and process solutions. From the preliminary investigation of a product to its launching, the TIC is the hub for new product development. It also serves as a liaison for building and regulatory codes. This center is conveniently situated less than half a mile from our Charlotte, North Carolina, headquarters.

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Gold Bond® Building Products

PermaBASE® Building Products

ProForm® Finishing Products

DEXcell® Roof Board Products

The Trusted Line of Gypsum Products

Gold Bond Building Products, LLC provides solutions for your changing construction demands with major innovations in gypsum products that help increase productivity and profitability. Whether you want innovative fire-resistant assemblies, enhanced acoustical performance or require additional abrasion or impact resistance, Gold Bond products deliver with a level of excellence.

Gold Bond offers a full line of gypsum board and plaster products to meet the commercial and residential needs of our partners, plus the moisture-, mold- and mildew-resistant PURPLE family of products.

INNOVATION CHANGING THE WAY YOU BUILD

Reduce material costs and increase productivity and efficiency on the jobsite with the powerful combination of GridMarX® installation guide marks and the MaX 12® fastener pattern.

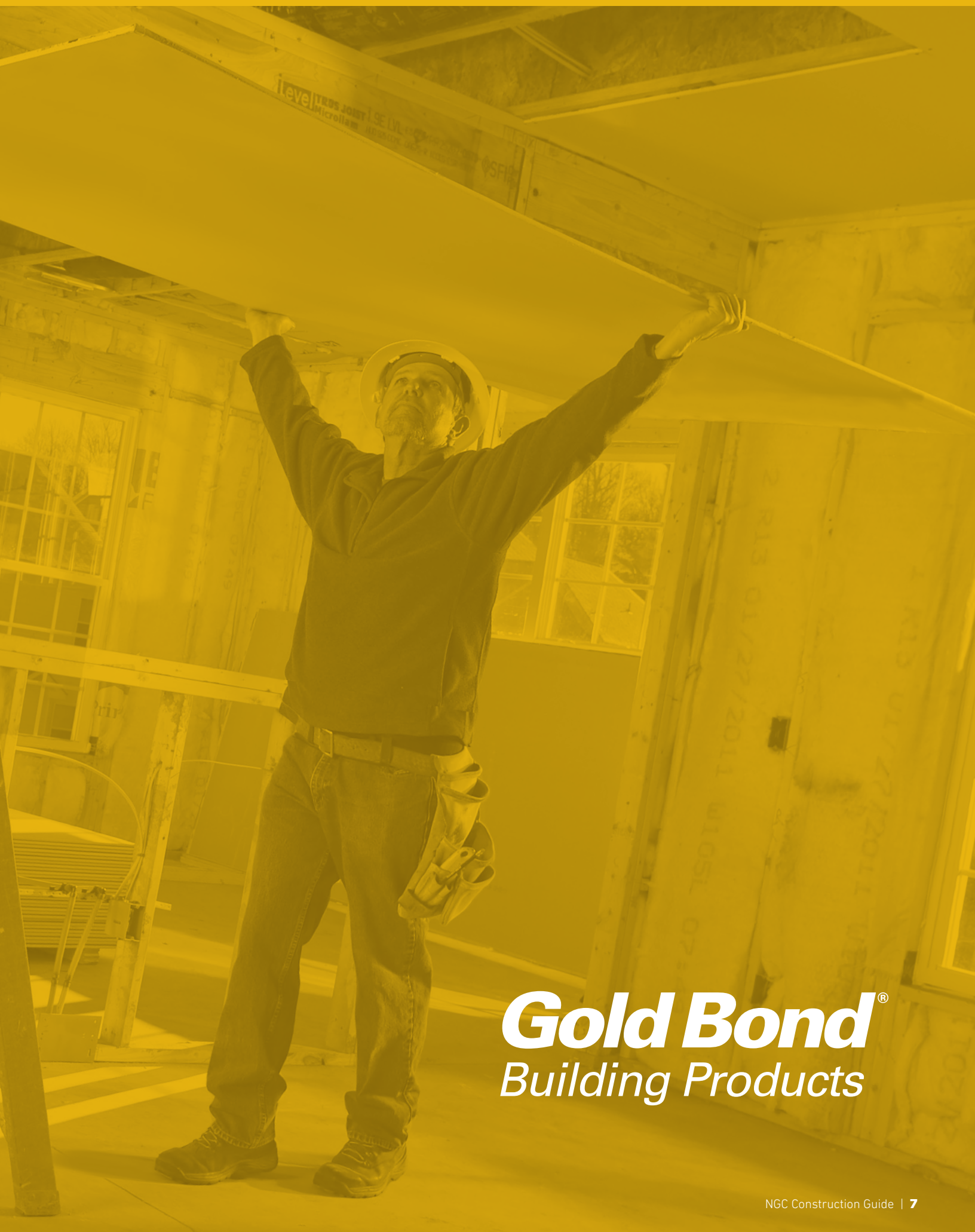
Printed on the face paper surface, our patented GridMarX improve productivity by helping installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines. MaX 12, the industry's best 12" o.c. fastener pattern, improves accuracy, reduces material and labor, and lowers costs.

PURPLE EVOLVE YOUR WALLS™

GREENGUARD
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

GridMarX and MaX 12®

The Gold Bond family of products is manufactured by Gold Bond Building Products, LLC.



Gold Bond®
Building Products

Fire and Sound Selector

Fire and Sound Ratings

FIRE RATINGS

Fire resistance is the ability of an assembly constructed in a laboratory to contain a fire in a carefully controlled test setting for a specified period of time. ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, is the test standard for determining the fire-resistance rating of partitions, floor-ceiling assemblies, roof-ceiling assemblies, beams and columns. Fire tests may be conducted at any one of several recognized facilities.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the test. Further, precaution should be taken that assembly procedures are in accordance with those of the tested assembly. **For copies of specific tests, call 1-800-NATIONAL (628-4662).**

SOUND RATINGS

Gypsum board assemblies are laboratory tested to establish their sound attenuation characteristics. Airborne sound insulation is reported as the Sound Transmission Class (STC). Impact noise, tested on floor-ceiling systems only, is reported as the Impact Insulation Class (IIC). ASTM E90, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*, is the test standard for airborne sound reduction. The test measures the sound transmission loss at 16 one-third octave frequencies to generate a single-number acoustical rating.

When selecting systems based on laboratory performance ratings, it should be understood that field conditions such as flanking paths or air leaks caused by design or workmanship can reduce acoustical performance. For this reason, Gold Bond Building Products, LLC cannot guarantee the performance ratings of specific assemblies in the field.

To achieve maximum sound isolation from an assembly, follow published construction details completely. Use non-hardening acoustical sealant at penetrations and floor, ceiling and wall intersections to prevent flanking paths for sound.

GENERAL NOTES REGARDING FIRE-RATED ASSEMBLIES

1. Unless otherwise specified, the face layers of all assemblies, except those with predecorated surfaces or exterior gypsum sheathing, shall have joints taped and fastener heads treated (minimum Level 2 as specified in GA-214, *Levels of Finish for Gypsum Panel Products*). Base layers in multi-layer assemblies shall not be required to have joints or fasteners taped or covered with joint compound.
2. When not specified as a component of a fire-tested wall or partition assembly, mineral fiber, glass fiber, or cellulose fiber insulation of a thickness not exceeding that of the stud depth shall be permitted to be added within the stud cavity.
3. In floor-ceiling or roof-ceiling assemblies, the addition or deletion of mineral wool or glass fiber insulation in the concealed space between the ceiling membrane and the floor or roof structure could possibly reduce the fire-resistance rating. The addition of insulation to any one- or two-hour fire-resistance rated floor-ceiling or roof-ceiling assembly is permitted provided that one additional layer of gypsum board of the same type specified in the design is added to the ceiling.
4. Additional layers of gypsum board are permitted to be added to any assembly.
5. Stud sizes specified in wood- or steel-stud assemblies are minimums.
6. Stud spacings specified in wood- or steel-stud assemblies are maximums.
7. Beam, joist and truss dimensions specified in floor-ceiling or roof-ceiling assemblies are minimums.
8. Beam, joist and truss spacings specified in floor-ceiling or roof-ceiling assemblies are maximums.
9. The distance between parallel rows of studs in wood- or steel-stud assemblies are minimums.
10. Ceilings supported directly from structural members are permitted to be suspended provided the in place stiffness is equivalent to the tested assembly.

GYPSUM PANEL PRODUCTS FOR USE IN UL CLASSIFIED SYSTEMS

UL Type Designation	Product Name
FSW	5/16" Gold Bond® XP® Fire-Shield® Radius Gypsum Board 5/8" Gold Bond® Fire-Shield® Gypsum Board, Type X 5/8" Gold Bond® XP® Hi-Abuse® Gypsum Board, Type X 5/8" Gold Bond® XP® Hi-Impact® Gypsum Board, Type X 5/8" Gold Bond® XP® Fire-Shield® Gypsum Board, Type X 1" Gold Bond® Shaftliner XP®, Type X
FSW-C	1/2" Gold Bond® Fire-Shield C™ Gypsum Board, Type C 5/8" Gold Bond® Fire-Shield C™ Gypsum Board, Type C 1/2" Gold Bond® XP® Fire-Shield C™ Gypsum Board, Type C 5/8" Gold Bond® XP® Fire-Shield C™ Gypsum Board, Type C
FSK	5/8" Gold Bond® Kal-Kore® Fire-Shield® Plaster Base, Type X
FSK-C	1/2" Gold Bond® Kal-Kore® Fire-Shield C™ Plaster Base, Type C 5/8" Gold Bond® Kal-Kore® Fire-Shield C™ Plaster Base, Type C
FSW-G	1/2" Gold Bond® Gridstone® Gypsum Ceiling Panels 1/2" Gold Bond® Gridstone® CleanRoom Ceiling Panels
FSW-6	5/8" Gold Bond® eXP® Fire-Shield® Sheathing, Type X 5/8" Gold Bond® eXP® Interior Extreme® Gypsum Panel, Type X 5/8" Gold Bond® eXP® Fire-Shield® Tile Backer, Type X 5/8" Gold Bond® eXP® Interior Extreme® IR Gypsum Panel, Type X 5/8" Gold Bond® eXP® Interior Extreme® AR Gypsum Panel, Type X
FSW-7	1" Gold Bond® eXP® Shaftliner, Type X
eXP-C	1/2" Gold Bond® eXP® Interior Extreme® Fire-Shield C™ Gypsum Panel, Type C 5/8" Gold Bond® eXP® Interior Extreme® Fire-Shield C™ Gypsum Panel, Type C
FSL30	5/8" Gold Bond® High Strength Fire-Shield 30® Gypsum Board
FSLX	5/8" Gold Bond® High Strength Fire-Shield 60® Gypsum Board
SBWB	5/8" Gold Bond® SoundBreak® XP Wall® Board, Type X
SBCB	3/4" Gold Bond® SoundBreak XP Ceiling® Board, Type X
UltraShield	3/4" Gold Bond® Ultra-Shield FS® Gypsum Board 3/4" Gold Bond® XP® Ultra-Shield FS® Gypsum Board
DEXcell Glass Mat Roof Board	1/4", 1/2" or 5/8" DEXcell® Glass Mat Roof Board 1/4", 1/2" or 5/8" DEXcell FA™ Glass Mat Roof Board 1/4", 1/2" or 5/8" DEXcell FA VSH™ Glass Mat Roof Board

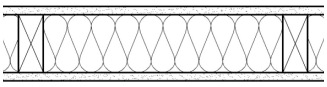
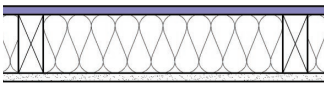
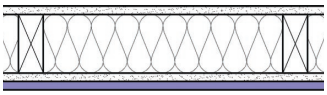
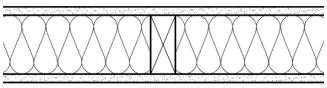
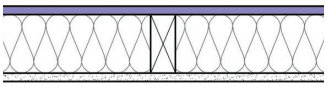
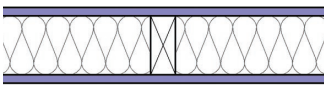
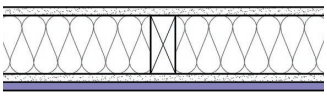
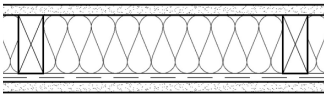
The following gypsum board system details are intended solely as technical support incident to the sale and use of products manufactured by Gold Bond Building Products, LLC. They may be used as a reference by architects, engineers, other design professionals, contractors, building code officials, or other competent construction industry trade personnel considering the selection, specification and use of products manufactured by Gold Bond Building Products, LLC in these systems.

Architects, engineers, designers or contractors involved should review these details with the governing code or inspection official at the time of the job submittal to determine if there are any discrepancies with local code or regulatory requirements. In any event, they must NOT be used without a complete evaluation by the owner's design professional to verify the suitability of the system for a given application.

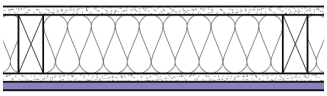
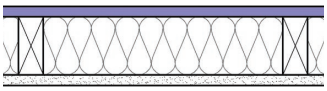
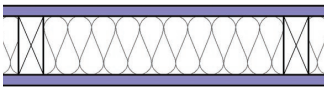
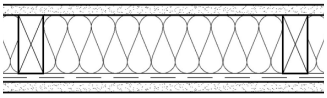
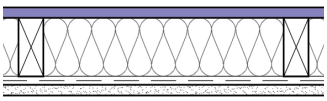
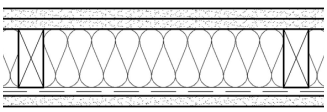
These system details may be printed and/or transferred electronically as needed by the user, subject to terms and limitations of any applicable license agreement. Any unauthorized duplication or reuse of the material contained herein is a violation of law.

For fire-safety information relating to certain systems described in this guide, please refer to the information on the Gold Bond Building Products website :
goldbondbuilding.com/fire-and-safety-information

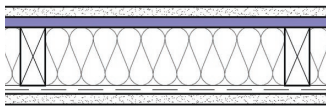
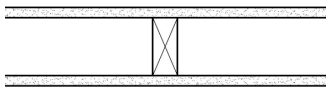
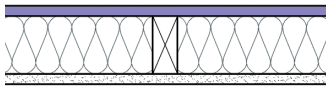
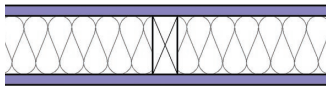
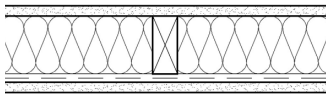
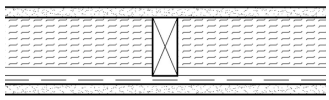
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING)

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
1		Not Rated	N/A	1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	36	NGC 2012051
2		Not Rated	N/A	1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. 1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to opposite side of studs with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	39	NGC 2009047
3		Not Rated	N/A	1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. 1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to one side of studs with 1-5/8" (41.3 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	43	NGC 2009040
4		Not Rated	N/A	1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to each side of 2x4 (38. 1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	42	NGC 2012065
5		Not Rated	N/A	1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. 1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to opposite side of studs with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	49	NGC 2009027
6		Not Rated	N/A	1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	51	NGC 2009029
7		Not Rated	N/A	1/2" (12.7 mm) Gold Bond Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. 1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to one side of studs with 1-5/8" (41.3 mm) Type W screws 12" (305 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	51	NGC 2009028
8		30 Min.	W411 WP 3007.1	5/8" (15.9 mm) High Strength Fire-Shield 30 Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	33 34	NGC 2014046 NGC 2014045
9		30 Min.	W411 WP 3007.1	5/8" (15.9 mm) High Strength Fire-Shield 30 Gypsum Board applied vertically or horizontally to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1" (25.4 mm) Type S screws. 5/8" (15.9 mm) High Strength Fire-Shield 30 Gypsum Board applied vertically or horizontally to channels with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	45	NGC 2014044

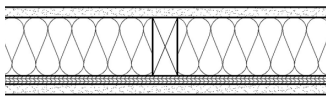
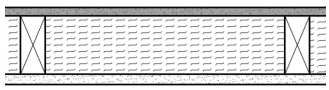
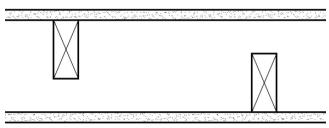
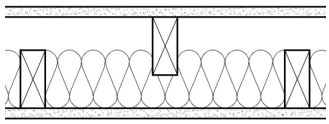
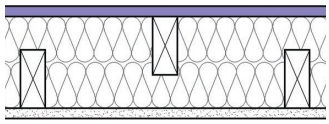
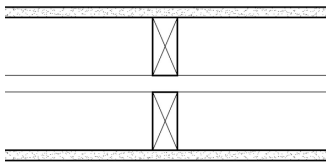
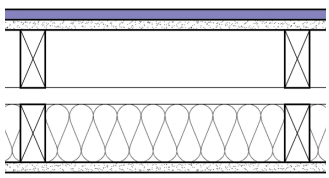
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
10		45 Min.	U317	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-5/8" (41.3 mm) long, 5d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides.	34	NGC 2161
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	36	NGC 2012051
11		45 Min.	U317	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-5/8" (41.3 mm) long, 5d coated nails 7" (178 mm) o.c. 1/2" (12.7 mm) SoundBreak XP Wall Board applied vertically to one side with 1-1/4" (31.8 mm) Type S screws 16" (406 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	43	NGC 2009040
12		1 Hr.	U305 WP 3605	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides.	35	NGC 2403
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	36	NGC 2008029
13		1 Hr.	U305 WP 3605	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	42	NGC 2009020
14		1 Hr.	U305 WP 3605	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	45	NGC 2009019
15		1 Hr.	U305 WP 3249	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channel with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	51	NGC 2011071
16		1 Hr.	U305	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channel with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	54	NGC 2011066
17		1 Hr.	U305	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-7/8" (47.6 mm) Type W screws 12" (305 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channel with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	55	NGC 2011070

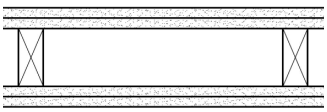
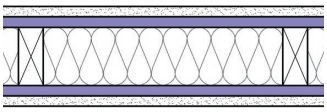
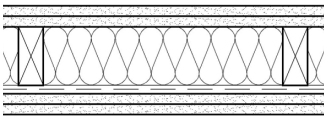
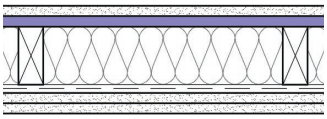
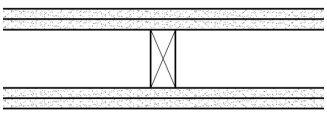
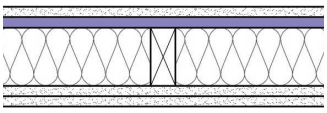
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
18		1 Hr.	U305	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-7/8" (47.6 mm) Type W screws 12" (305 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channel with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	58	NGC 2011067
19		1 Hr.	WP 3341	Base layer 1/4" (6.4 mm) Gold Bond Gypsum Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/2" (38.1 mm) long, 4d coated nails 12" (305 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 1/4" (6.4 mm) beads of laminating compound 2" (50.8 mm) o.c. and with 1-7/8" (47.6 mm) long, 6d coated nails 6" (152 mm) o.c. at top and bottom plates. Joints staggered each layer and side.	45	NGC 2321
20		1 Hr.	U309 WP 3510	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides.	38	NGC 2404
21		1 Hr.	U309 WP 3510	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	50	NGC 2009015
22		1 Hr.	U309 WP 3510	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	53	NGC 2009016
23		1 Hr.	U309	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channel with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. 3" (76.2 mm) glass fiber insulation between studs fastened with staples 24" (610 mm) o.c. Joints staggered on opposite sides.	50	NRCC TL-93-196
24		1 Hr.	U311	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied horizontally to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side of studs with 1-1/4" (31.8 mm) Type W screws. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied horizontally to channel with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Vertical joints located between studs and back-blocked with 20" (508 mm) long resilient channel. Horizontal joints not required to be staggered. Vertical joints staggered on opposite sides. 3" (76.2 mm) mineral wool insulation between studs fastened with staples 24" (610 mm) o.c.		

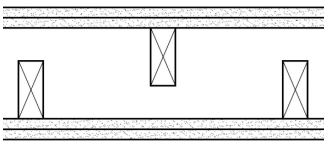
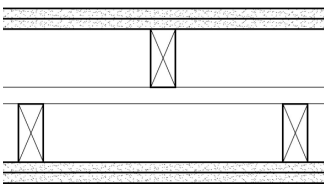
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
25		1 Hr.	U344	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 15/32" (11.9 mm) wood structural panels applied vertically to opposite side with 1-7/8" (47.6 mm) long, 6d coated nails 6" (152 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs with vertical joints staggered and horizontal joints backed by wood blocking. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally and fastened to studs through wood structural panels with 2-3/8" (60.3 mm) long, 8d coated nails 7" (178 mm) o.c. 3-1/2" (88.9 mm) foil-faced glass fiber insulation friction fit between studs.		
26		1 Hr.	U392 WP 3648	1/2" (12.7 mm) PermaBASE® Cement Board applied vertically or horizontally to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) cement board screws at 8" (203 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to opposite side with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 3 1/2" (88.9 mm) mineral fiber insulation friction fit in stud cavity.		
27		1 Hr.	U340	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. staggered 12" (305 mm) on each side of 2x6 (38.1 mm x 140 mm) wood plate with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides.		
28		1 Hr.	U340 WP 5513	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. staggered 8" (203 mm) on each side of 2x6 (38.1 mm x 140 mm) wood plate with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	45	NGC 2375
29		1 Hr.	WP 5513	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. staggered 8" (203 mm) on each side of 2x6 (38.1 mm x 140 mm) wood plate with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	53	NGC 2011003
30		1 Hr.	U341	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of double row of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides.		
				Sound rating with studs 16" (406 mm) o.c. and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity in one row only.	51	NGC 2191
				Sound rating with studs 16" (406 mm) o.c. and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity in each row.	54	NGC 2198
31		1 Hr.	U341	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of double row of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. Joints staggered on opposite sides. Face layer of SoundBreak XP Wall Board applied vertically to one side with 2" (50.8 mm) Type S screws 16" (406 mm) o.c. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity in one row only.	64	RAL TL07-147

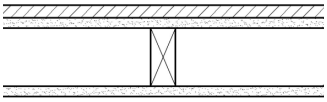
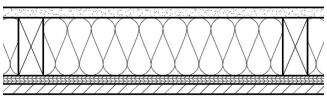
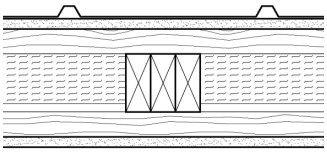
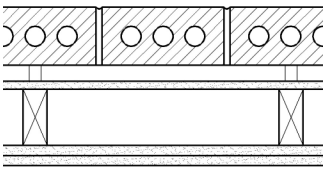
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
32		2 Hr.	U301	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 6" (152 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Vertical joints located over studs. Joints staggered each layer and side.	40	NGC 2363
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	41	NGC 2364
33		2 Hr.	U301	Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 2-3/8" (60.3 mm) Type W screws 8" (203 mm) o.c. Vertical joints located over studs. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	45	NGC 2009017
34		2 Hr.	U301 WP 3809	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with 2" (50.8 mm) Type W screws 8" (203 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side with 1-1/4" (31.8 mm) Type W screws. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Vertical joints located over studs. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	58	NGC 2011069
35		2 Hr.	U301	Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with 2" (50.8 mm) Type W screws 8" (203 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side with 1-1/4" (31.8 mm) Type W screws. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Vertical joints located over studs. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	61	NGC 2011068
36		2 Hr.	WP 4135	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c with 1-7/8" (47.6 mm) long, 6d coated nails 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Joints staggered each layer and side.		
				Sound rating with 16" (406 mm) o.c. framing.	40	NGC 2363
37		2 Hr.	WP 4135	Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied horizontally to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c with 1-7/8" (47.6 mm) long, 6d coated nails 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to opposite side with 1-7/8" (47.6 mm) long, 6d coated nails 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	54	NGC 2009016

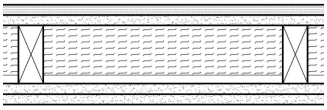
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
38		2 Hr.	WP 3910	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. staggered 8" (203 mm) on each side of 2x6 (38.1 mm x 140 mm) wood plate with 1-7/8" (47.6 mm) long, 6d coated nails 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Joints staggered each layer and side.	51	NGC 2377
39		2 Hr.	WP 5520	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side of double row of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. on separate plates 1" (25.4 mm) apart with 1-7/8" (47.6 mm) long, 6d coated nails 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Joints staggered each layer and side.		
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	58	NGC 3056

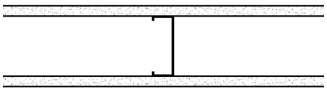
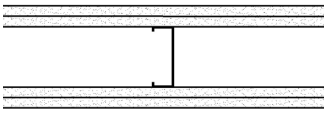
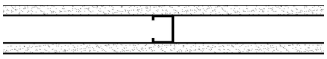
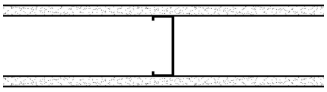
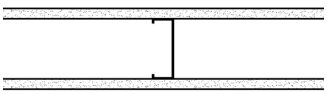
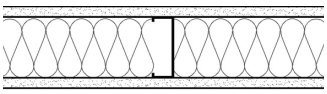
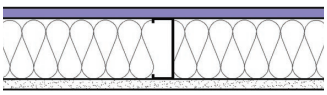
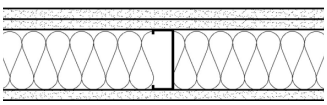
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – EXTERIOR WALLS

40		1 Hr.	U309 WP 8105	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to interior side of 2x4 (38.1 mm x 88.9 mm) wood studs 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 5/8" (15.9 mm) eXP Fire-Shield Sheathing applied horizontally to exterior side with 1-3/4" (44.5 mm) galvanized roofing nails 4" (102 mm) o.c. at vertical joints and 7" (178 mm) o.c. at intermediate studs and top and bottom plates. Exterior cladding to be fastened through sheathing to studs.		
41		1 Hr.	U356	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 7" (178 mm) o.c. 7/16" (11.1 mm) wood structural panels applied vertically or horizontally to opposite side with 1-7/8" (47.6 mm) long, 6d coated nails 6" (152 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Vertical joints staggered and horizontal joints backed by wood blocking. 3-1/2" (88.9 mm) glass fiber or mineral wool insulation friction fit between studs. Vinyl, particle board, wood, aluminum or fiber-cement siding, stucco, EIFS, or brick veneer applied over wood structural panels. Fire rating from interior side only unless brick veneer is used.		
42		1 Hr.	WHI 651-0319	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied horizontally to 2x4 (38.1 mm x 88.9 mm) wood girts 24" (610 mm) o.c. with 1-7/8" (47.6 mm) long, 6d cement-coated nails on 6x6 (140 mm x 140 mm) wood columns 8' (2.44 m) o.c. Metal cladding applied vertically with 1-1/2" (38.1 mm) long hex-head screws to girts. 3" (76.2 mm) mineral fiber insulation nailed to interior of exterior girts.		
43		2 Hr.	U302 WP 8187	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to interior side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally with 2-3/8" (60.3 mm) long, 8d coated nails 8" (203 mm) o.c. Vertical joints located over studs. Joints staggered each layer. 1/2" (12.7 mm) eXP Sheathing applied horizontally to exterior side of wood studs with 1-3/4" (44.5 mm) galvanized roofing nails 6" (152 mm) o.c. Vertical joints located over studs and staggered between adjacent rows. Exterior clay brick veneer with 1" (25.4 mm) air space between brick and exterior sheathing and 20-gauge corrugated wall ties fastened to each stud with 2-3/8" (60.3 mm) long, 8d coated nails every 6th course.		

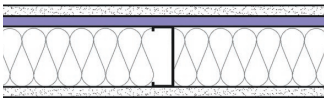
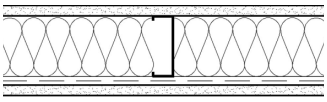
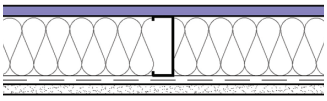
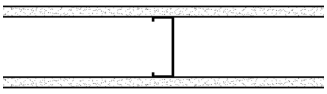
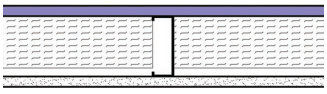
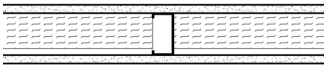
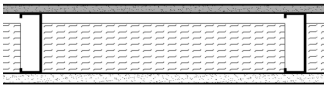
GYPSUM BOARD PARTITIONS – WOOD FRAMING (LOAD-BEARING) – EXTERIOR WALLS – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
44		2 Hr.	U371 WP 8417	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to interior side of 2x4 (38.1 mm x 88.9 mm) wood studs 16" (406 mm) o.c. with 1-1/4" (31.8 mm) type S screws 12" (305 mm) o.c. Face layer applied horizontally with 2" (50.8 mm) Type S screws 12" (305 mm) o.c. 5/8" (15.9 mm) eXP Fire-Shield Sheathing applied vertically or horizontally to exterior side with 1-3/4" (44.5 mm) galvanized roofing nails or 2" (50.8 mm) Type S screws, 8" (203 mm) o.c. Joints staggered each layer and side. Pre-furred wire stucco netting applied with 1" (25.4 mm) long steel staples 7" (178 mm) o.c. 3/4" (19.1 mm) Portland cement stucco applied over stucco net. 3" (76.2 mm) mineral wool insulation in stud cavity.		

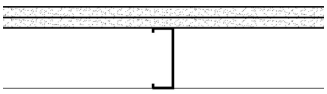
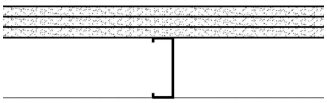
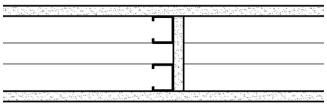
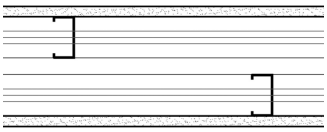
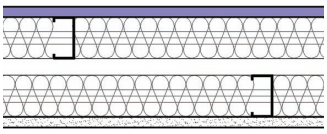
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING)

45		30 Min.	W411 WP 0703	5/8" (15.9 mm) High Strength Fire-Shield 30 Gypsum Board applied vertically or horizontally to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c.	36	NGC 2014006
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	46	NGC 2014005
46		1 Hr.	W411	Base layer 5/8" (15.9 mm) High Strength Fire-Shield 30 Gypsum Board applied vertically or horizontally to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c.		
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	54	NGC 2014008
47		1 Hr.	WP 1340	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs.	38	NGC 2384
				Sound rating with 2-1/2" (63.6 mm) steel studs.	40	NGC 2438
48		1 Hr.	V438 U465 WP 1109	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs.		
				Sound rating with 2-1/2" (63.6 mm) glass fiber insulation in stud cavity.	46	NGC 2017107
49		1 Hr.	V438 U465	5/8" (15.9 mm) Fire-Shield Gypsum Board applied horizontally to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c.		NGC 2018165
50		1 Hr.	V438 U465 WP 1114	5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 12" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	45	NGC 2018165
51		1 Hr.	V438 U465 WP 1015.1	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	55	OL14-0404
52		1 Hr.	V438 U465	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side with 1-5/8" (41.3 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 2-1/2" (63.6 mm) glass fiber insulation in stud cavity.	50	NGC 2522

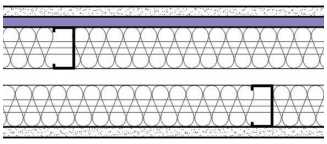
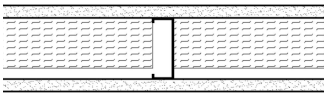
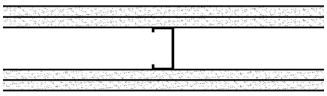
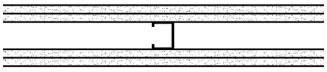
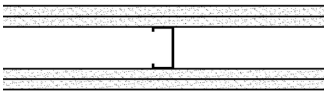
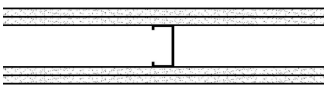
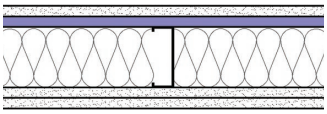
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
53		1 Hr.	V438 U465	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to studs through the SoundBreak XP Wall Board with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	57	RAL-TL06-334
54		1 Hr.	V438 U465	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side with 1/2" (12.7 mm) Type S-12 screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	51	NGC 2016017
55		1 Hr.	V438 U465	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side with 1/2" (12.7 mm) Type S-12 screws. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	56	NGC 2016018
56		1 Hr.	V450 V438 U465	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to both sides of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs.	39	RAL TL05-078
57		1 Hr.	V483	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side of studs with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 3" (76.2 mm) mineral fiber insulation friction fit in stud cavity.	54	RAL TL07-389
58		1 Hr.	V401 V438 WP 1071	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 2" (50.8 mm) mineral fiber insulation, 2.5 pcf (40 kg/m3), friction fit in stud cavity. Sound rating with 3-5/8" (92.1 mm) steel studs and 3" (76.2 mm) mineral fiber insulation in stud cavity.	45 47	NGC 2179 NGC 2017009
59		1 Hr.	W472 WP 1298	1/2" (12.7 mm) PermaBASE Cement Board applied vertically or horizontally to one side of 3-5/8" (92.1 mm) steel studs 16" (406 mm) o.c. with 1-1/8" (28.6 mm) cement board screws at 8" (203 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side with 1-1/4" (31.8 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. 3" (76.2 mm) mineral fiber insulation friction fit in stud cavity.	40	NGC 2018037

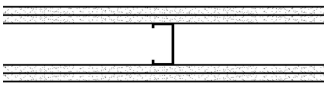
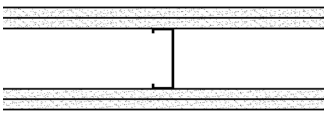
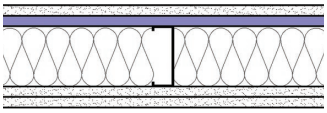
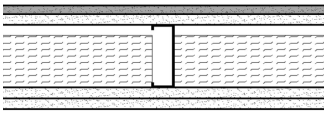
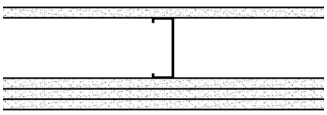
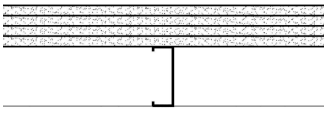
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
60		1 Hr.	V497 WP 1299	Base layer 5/8" (15.9 mm) Fire Shield Gypsum Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. ProForm® Quick Set™ Setting Compound applied to base layer with 1/4" x 1/4" (6.4 mm x 6.4 mm) notched trowel producing continuous beads. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to studs with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. starting 6" (152 mm) from the bottom of the gypsum board.		
				Sound rating with studs 16" (406 mm) o.c. and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	38	NGC 2013013
61		1 Hr.	V497 WP 1297	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. at vertical joints and intermediate studs. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Face layer Fire-Shield Gypsum Board applied vertically with 2-1/4" (57.2 mm) Type S screws 12" (203 mm) o.c. Joints staggered each layer and side.		
				Sound rating with 3-1/2" (63.5 mm) glass fiber insulation in stud cavity.	42	NGC 2018048
62		1 Hr.	U420 WP 5041	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to double row of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. and minimum 1" (25.4 mm) apart with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints 12" (305 mm) o.c. at intermediate studs. 5/8" (15.9 mm) gypsum board gussets 12" (305 mm) long and minimum 4-1/2" (114 mm) wide located at 1/3 points used as cross braces fastened to stud pairs with three 1" (25.4 mm) Type S screws at each stud. Optionally, 25-gauge minimum 4-1/2" (114 mm) long stud or runner pieces may be used as cross braces and applied with two 1/2" (12.7 mm) self-drilling screws at each end. Joints staggered on opposite sides.		
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	52	TL 76-155
63		1 Hr.	V488 WP 5040	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of a double row of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. evenly staggered between the two rows and a minimum 1" (25.4 mm) apart. Horizontally applied gypsum board fastened with 1" (25.4 mm) Type S or S-12 screws 8" (203 mm) o.c. in the field and 12" (305 mm) o.c. at floor and ceiling runners. Vertically applied gypsum board fastened with 1" (25.4 mm) Type S or S-12 screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs and floor and ceiling runners. Lateral bracing provided at each row of studs. Joints staggered on opposite sides.		
				Sound rating with 2-1/2" (63.6 mm) glass fiber insulation in each stud cavity.	56	NGC 2015108
64		1 Hr.	V488	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of a double row of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. evenly staggered between the two rows and a minimum 1" (25.4 mm) apart. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side with 1" (25.4 mm) Type S or S-12 screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs and floor and ceiling runners. Lateral bracing provided at each row of studs. Joints staggered on opposite sides. 2-1/2" (63.6 mm) glass fiber insulation in each stud cavity.	60	NGC 2015107

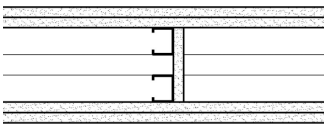
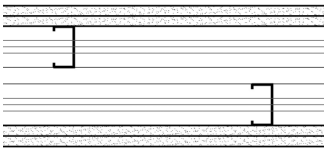
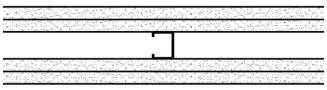
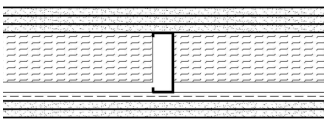
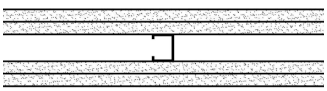
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
65		1 Hr.	V488	5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of a double row of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. evenly staggered between the two rows and a minimum 1" (25.4 mm) apart. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side with 1" (25.4 mm) Type S or S-12 screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs and floor and ceiling runners. Fire-Shield Gypsum Board applied vertically to studs through the SoundBreak XP Wall Board with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Lateral bracing provided at each row of studs. Joints staggered on opposite sides. 2-1/2" (63.6 mm) glass fiber insulation in each stud cavity.	62	NGC 2015110
66		2 Hr.	W432 WP 1571	3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied vertically or horizontally to each side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 8" (203 mm) o.c. 3" (76.2 mm) mineral fiber insulation, 2.5 pcf (40 kg/m^3), friction fit in stud cavity.	50	NGC 2015062
67		2 Hr.	V438	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs and 12" (305 mm) o.c. at floor and ceiling runners. Joints staggered each layer and side.		
68		2 Hr.	V438	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. Screws offset 8" (203 mm) from base layer. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	55	NGC 2017011
69		2 Hr.	V438 U411 WP 1575	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 2-1/2" (63.5 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs and 12" (305 mm) o.c. at floor and ceiling runners. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	54	NGC 2017104
70		2 Hr.	V438 U411 WP 1547	Base layer 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically to each side of 2-1/2" (63.5 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs and 12" (305 mm) o.c. at floor and ceiling runners. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	50	NGC 2018160
71		2 Hr.	V484 WP 1457	Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Base layer of 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	60	RAL TL07-168

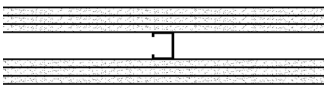
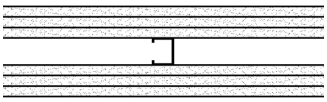
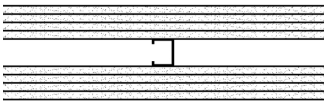
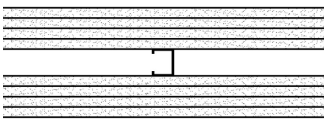
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
72		2 Hr.	V438 U412	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 2-1/2" (63.5 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs.	48	NGC 2282
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3" (76.2 mm) glass fiber insulation in stud cavity.	53	NGC 2288
73		2 Hr.	V450	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board or eXP Fire-Shield Sheathing applied vertically to both sides of 3-5/8" (92.1 mm) steel studs at 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs and 12" (305 mm) o.c. at floor and ceiling runners. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board or eXP Fire-Shield Sheathing applied vertically with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs and 12" (305 mm) o.c. at floor and ceiling runners. Joints staggered each layer and side.	56	NGC 3022
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.		
74		2 Hr.	V484	Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Base layer of 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to opposite side with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer and side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	60	RAL TL07-168
75		2 Hr.	W472 WP 1717	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board or 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 3-5/8" (92.1 mm) steel studs 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board or 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to one side with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. 1/2" (12.7 mm) PermaBASE Cement Board applied vertically to opposite side with 1-5/8" (41.3 mm) cement board screws 8" (203 mm) o.c. 3" (76.2 mm) mineral fiber insulation friction fit in stud cavity. Joints staggered each layer and side.	43	NGC 2018036
76		2 Hr.	WP 1567 V499	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 3-1/2" (88.9 mm) steel studs 24" (610 mm) o.c. with 1-1/8" (28.6 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Face layer Fire-Shield Gypsum Board applied vertically to one side with 2-1/4" (57.2 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Joints staggered each layer and side.		
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	52	NGC 2016024
77		2 Hr.	V497 WP 1715	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to one side of 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. at vertical joints and intermediate studs. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Third layer Fire-Shield Gypsum Board applied vertically with 2-1/2" (63.5 mm) Type S screws 16" (406 mm) o.c. Face layer Fire-Shield Gypsum Board applied vertically with 3" (76.2 mm) Type S screws 12" (203 mm) o.c. Joints staggered each layer and side.		
				Sound rating with 3-1/2" (63.5 mm) glass fiber insulation in stud cavity.	44	NGC 2018047

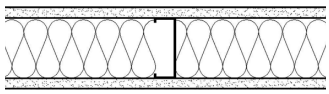
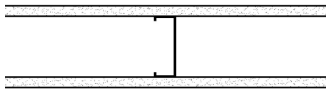
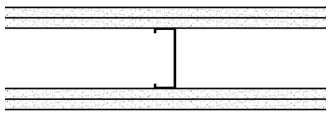
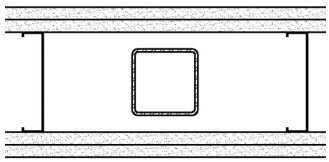
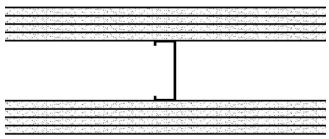
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
78		2 Hr.	U420 WP 5105	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of a double row of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. and not less than 1" (25.4 mm) apart with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Gypsum board pieces 12" (305 mm) long by not less than 4-1/2" (114 mm) wide located at 1/3 points used as cross braces fastened to stud pairs with three 1" (25.4 mm) Type S screws at each end of brace. Optionally, 25-gauge studs or runner pieces not less than 4-1/2" (114 mm) long may be used as cross braces and fastened with two No. 8 x 1/2" (12.7 mm) self-drilling steel screws at each end. Joints staggered each layer and side.		
				Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	57	TL 76-156
79		2 Hr.	V488 WP 5072	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of a double row of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. evenly staggered between the two rows with 1" (25.4 mm) Type S or S-12 screws 16" (406 mm) o.c. Face layer Fire-Shield Gypsum Board applied vertically or horizontally to each side with 1-5/8" (41.3 mm) Type S or S-12 screws 16" (406 mm) o.c. Screws offset 8" (203 mm) from screws in base layer. Joints staggered each layer and side.		
				Sound rating with 2-1/2" (63.6 mm) glass fiber insulation in stud cavity on each side.	64	NGC 2015112
80		3 Hr.	V455 WP 2752	Base layer 3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied vertically or horizontally to each side of 1-5/8" (41.3 mm) teel studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 16" (406 mm) o.c. Face layer 3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied vertically or horizontally to each side with 2" (50.8 mm) Type S screws 16" (406 mm) o.c.		
				Sound rating with 1-1/2" (41.3 mm) glass fiber insulation in stud cavity	55	NGC 2017037
81		3 Hr.	V455	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to one side of 3-1/2" (88.9 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws 24" (610 mm) o.c. Second layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S-12 screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 2-1/4" (57.2 mm) Type S-12 screws 12" (305 mm) o.c. Resilient channels 24" (610 mm) o.c. applied horizontally to opposite side with 1/2" (12.7 mm) Type S-12 screws. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. 3" (76.2 mm) mineral wool insulation in stud cavity.		
82		3 Hr.	W455 WP 2752	Base layer 3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs. Face layer 3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied vertically to each side with 2" (50.8 mm) Type S screws 16" (406 mm) o.c. at vertical joints and intermediate studs. Joints staggered each layer and side.		
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	55	NGC 2017037

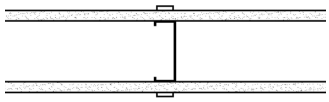
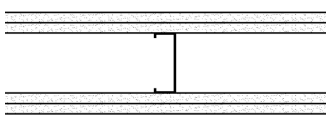
GYPSUM BOARD PARTITIONS – STEEL FRAMING (NON-LOAD-BEARING) – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
83		3 Hr.	V438 WP 2921	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. Screws offset 6" (152 mm) from layer below. Joints staggered each layer and side.	48	NGC 2631
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	53	NGC 2636
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	59	NGC 2017012
84		3 Hr.	V438 WP 2801	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. Screws offset 6" (152 mm) from layer below. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	59	NGC 2016101
85		4 Hr.	V438 WP 2960	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Third layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 2-1/4" (57.2 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side with 2-5/8" (66.7 mm) Type S screws, 12" (305 mm) o.c. Screws offset 6" (152 mm) from layer below. Joints staggered each layer and side.	51	NGC 2633
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	55	NGC 2634
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	62	NGC 2017013
86		4 Hr.	V438 WP 2946	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 1-5/8" (41.3 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Third layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 2-5/8" (66.7 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side with 3" (76.2 mm) Type S screws 12" (305 mm) o.c. Screws offset 6" (152 mm) from layer below. Joints staggered each layer and side.		
				Sound rating with 3-5/8" (92.1 mm) steel studs and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	61	NGC 2016100

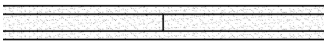
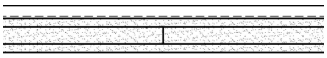
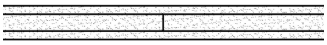
GYPSUM BOARD PARTITIONS – STEEL FRAMING (LOAD-BEARING)

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
87 	1 Hr.	W465 W469 WP 1213	5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically to each side of 3-1/2" (88.9 mm) 20 gauge steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws at 12" (305 mm) o.c. Studs laterally braced and fastened to tracks. Joints staggered on opposite sides. 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation in stud cavity.	40	NGC 2020021
88 	1 Hr.	W469 WP 1212	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 3-1/2" (88.9 mm) 20-gauge steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws at 12" (305 mm) o.c. Studs laterally braced and fastened to tracks. Joints staggered on opposite sides.		
			Sound rating with 3" (76.2 mm) glass fiber insulation in stud cavity.	39	NGC 2020022
89 	2 Hr.	W469 WP 1574	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side of 3-1/2" (88.9 mm) 20-gauge steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws 12" (305 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S-12 screws 12" (305 mm) o.c. Studs laterally braced and fastened to tracks. Joints staggered each layer and side.		
			Sound rating with 3" (76.2 mm) glass fiber insulation in stud cavity.	50	NGC 2020023
90 	2 Hr.	W450	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of 6" (152 mm) steel studs 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer and side. 4" x 4" (102 mm x 102 mm) rectangular Hollow Steel Section (HSS) centered within stud cavity.		
91 	3 Hr.	U426	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side of 3-1/2" (88.9 mm) 20-gauge steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws 48" (1,219 mm) o.c. Second layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 1-5/8" (41.3 mm) Type S-12 screws 48" (1,219 mm) o.c. Third layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 2-1/4" (57.2 mm) Type S-12 screws 48" (1,219 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side with 2-5/8" (66.7 mm) Type S-12 screws 12" (305 mm) o.c. Horizontally applied face layer fastened to inner layers with 1-1/2" (38.1 mm) Type G screws midway between studs. Studs laterally braced and fastened to tracks. Joints staggered each layer and side.		

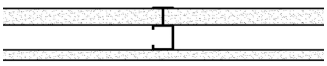
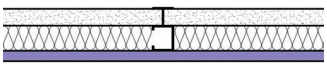
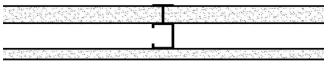
GYPSUM BOARD PARTITIONS – DURASAN PREFINISHED GYPSUM PANELS

92 	1 Hr.	U405 WP 6040	5/8" (15.9 mm) Durasan Prefinished Gypsum Board applied vertically to each side of 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. with steel batten retainers fastened to each stud with 1-1/4" (31.8 mm) Type S screws 9" (229 mm) o.c. Joints staggered on opposite sides.		
			Sound rating with 3" (76.2 mm) glass fiber insulation in stud cavity.	41	G&H NG-145FT
93 	2 Hr.	U411	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to 2-1/2" (63.6 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at vertical joints and 12" (305 mm) o.c. at intermediate studs. Face layer 5/8" (15.9 mm) Durasan Prefinished Gypsum Board laminated to base layer with joint compound applied with a notched spreader producing continuous 3/8" (9.5 mm) beads 2" (50.8 mm) o.c. and fastened to floor and ceiling runners with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer and side.		
			Sound rating with 3" (76.2 mm) glass fiber insulation in stud cavity.	56	NGC 3022

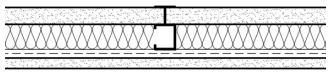
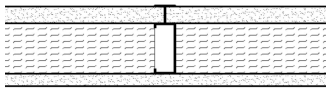
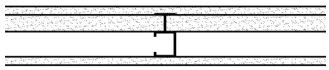
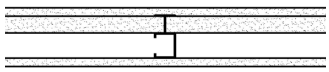
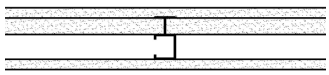
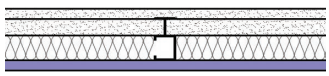
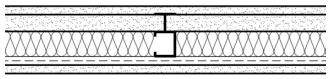
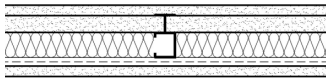
SOLID GYPSUM BOARD PARTITIONS

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
94		2 Hr.	U525	1" (25.4 mm) Shaftliner XP or eXP Shaftliner applied to 25-gauge, 1" (25.4 mm) x 2-1/4" (57.2 mm) high steel angles along floor and ceiling with two 1-5/16" (33.3 mm) Type S screws at top and bottom. 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with ProForm® Quick Set™ Setting Compound combed over entire contact surface and 1-5/16" (33.3 mm) Type S screws 24" (610 mm) o.c. horizontally and vertically and fastened to angles with 1-7/8" (47.6 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer and side.	34	NGC 2359
95		2 Hr.	U505 WP 7245	22-gauge, 3/4" (19.1 mm) x 1-1/4" (31.8 mm) high steel angle along floor and 22-gauge, 3/4" (19.1 mm) x 1-1/4" (31.8 mm) x 30" (762 mm) long steel angles fastened to end walls and spaced maximum 5' (1,524 mm) o.c. 25-gauge, 1" (25.4 mm) x 1-5/8" (41.3 mm) steel channel fastened to ceiling with one leg aligned with wall angles and oriented so the first two layers of gypsum board can be inserted into the channel. 25-gauge, 3/4" (19.1 mm) x 1-1/4" (31.8 mm) horizontal bracing angles spaced 5' (1,524 mm) o.c. with 1-1/4" (31.8 mm) leg fastened to 1-1/4" (31.8 mm) leg of wall angles. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with top edge inserted into ceiling channel to floor, wall, and bracing angles with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Second layer 1" (25.4 mm) Shaftliner XP or eXP Shaftliner applied vertically with top edge inserted into ceiling channel with ProForm Quick Set Setting Compound combed over entire contact surface and to floor, wall and bracing angles with 2-1/4" (57.2 mm) Type S-12 screws 12" (305 mm) o.c. Additional angles fastened to floor and end walls with 1-1/4" (31.8 mm) leg flat against the shaftliner panel. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with ProForm Quick Set Setting Compound combed over entire contact surface and to ceiling channel and floor and wall angles with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Joints staggered each layer and side.		
96		2 Hr.	U529	25-gauge 1" (25.4 mm) x 2" (50.8 mm) steel angles fastened to floor, ceiling and end walls. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to angles with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Second layer 1" (25.4 mm) Shaftliner XP or eXP Shaftliner applied vertically with ProForm Quick Set Setting Compound combed over entire contact surface and 1-1/2" (38.1 mm) Type G screws 24" (610 mm) o.c. vertically and horizontally. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with ProForm Quick Set Setting Compound combed over entire contact surface and 1-1/2" (38.1 mm) Type G screws 24" (610 mm) o.c. vertically and horizontally. Joints staggered each layer and side.		

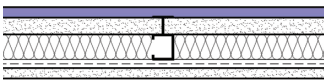
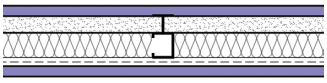
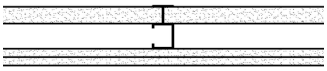
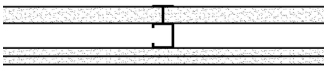
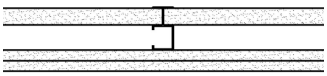
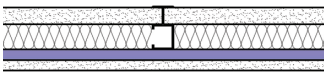
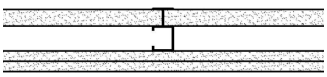
GYPSUM BOARD PARTITIONS – SHAFTWALL SYSTEMS

97		1 Hr.	W419 U499 WP 6751	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. on side opposite shaftliner panel.	37	NGC 2001003
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	42	NGC2016033
98		1 Hr.	W419 U499	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. on side opposite shaftliner panel. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	44	NGC 2015035
99		1 Hr.	W419	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.5 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically or horizontally to studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. at vertical joints and intermediate studs and floor and ceiling runners on side opposite shaftliner panel.		

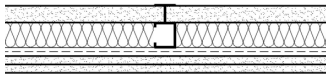
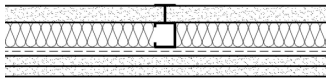
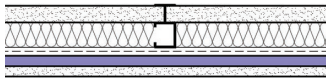
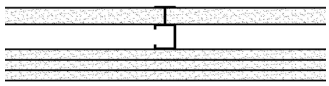
GYPSUM BOARD PARTITIONS – SHAFTWALL SYSTEMS – CONTINUED

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
100 	1 Hr.	W419 U499	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. 5/8" (19.1 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	48	NGC 2541
101 	2 Hr.	W441 WP 7066	1" (25.4 mm) eXP Shaftliner inserted between flanges of 4" (102 mm) steel C-T or C-H studs 24" (610 mm) o.c. 3/4" (19.1 mm) Ultra-Shield FS Gypsum Board applied to studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. on side opposite shaftliner panel. 3" (76.2 mm) mineral wool insulation in stud cavity.	51	NGC 2015043
102 	2 Hr.	U429	1" (25.4 mm) Shaftliner XP or eXP Shaftliner installed between flanges of 2-1/2" (63.6 mm) steel C-T or C-H studs 24" (610 mm) o.c. 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to each side with 1" (25.4 mm) Type S screws at 12" (305 mm) o.c.	42	NGC 2535
			Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity	48	NGC 2017005
103 	2 Hr.	W419 U498 WP 7079 ASW 1215	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c.	42	NGC 2535
			Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	48	NGC 2534
104 	2 Hr.	W419 U498 WP 7061	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically or horizontally to each side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered each side.	42	NGC 2535
			Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	48	NGC 2016034
105 	2 Hr.	W419 U498	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to shaftliner side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to opposite side with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered each side. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	53	NGC 2015036
106 	2 Hr.	W419 U498 WP 7062	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to shaftliner side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered on opposite sides. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	53	NGC 2017008
107 	2 Hr.	W419 U498	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to shaftliner side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered on opposite sides. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	52	NGC 2538

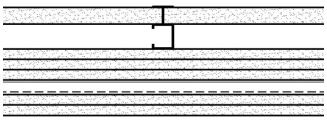
GYPSUM BOARD PARTITIONS – SHAFTWALL SYSTEMS – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
108		2 Hr.	W419 U498	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to shaftliner side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered on opposite sides. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	55	NGC 2015041
109		2 Hr.	W419 U498	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to shaftliner side of studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Joints staggered on opposite sides. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	56	NGC 2015040
110		2 Hr.	U428	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T or C-H studs 24" (610 mm) o.c. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied horizontally to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer.	40	NGC 2615
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	49	NGC 2017006
111		2 Hr.	W419 U497	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer.	40	NGC 2615
				Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	47	NGC 2616
112		2 Hr.	W419 U497 WP 7066.1	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer.	41	NGC 2508
				Sound rating with 6" (152 mm) studs using 5" (127 mm) glass fiber insulation in stud cavity.	51	NGC 201901
113		2 Hr.	W419 U497	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	51	NGC 2015037
114		2 Hr.	W419	1" (25.4 mm) eXP Shaftliner inserted between flanges of 2-1/2" (63.5 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically to studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. on side opposite shaftliner panel. Face layer 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer.		

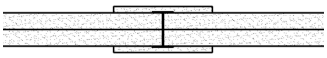
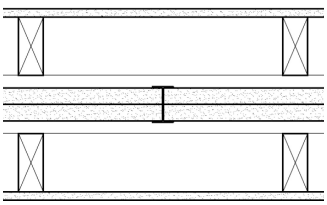
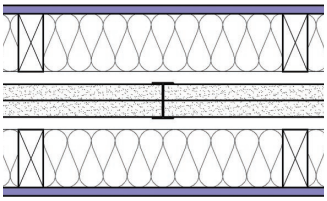
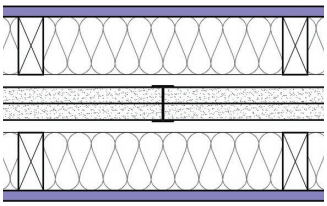
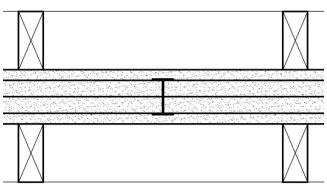
GYPSUM BOARD PARTITIONS – SHAFTWALL SYSTEMS – CONTINUED

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
115 	2 Hr.	W419 U497 WP 7064	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	52	NGC 2017007
116 	2 Hr.	W419 U497	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer. 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	51	NGC 2016038
117 	2 Hr.	W419 U497	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Resilient channels applied horizontally to studs 24" (610 mm) o.c. with 1/2" (12.7 mm) pan-head screws on side opposite shaftliner panel. Base layer 5/8" (15.9 mm) SoundBreak XP Wall Board applied vertically to channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Joints staggered each layer.		
			Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	53	NGC 2015039
118 	3 Hr.	W419 W414 WP 7424	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H or I studs 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Second layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Second layer fastened to base layer 2" (50.8 mm) from each side of vertical joints with 1-1/2" (38.1 mm) Type G screws 12" (305 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. starting 6" (152 mm) from the bottom of the gypsum board. Face layer fastened to inner layers 2" (50.8 mm) from each side of vertical joints with 1-1/2" (38.1 mm) Type G screws 12" (305 mm) o.c.		
			Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	50	NGC 2016039

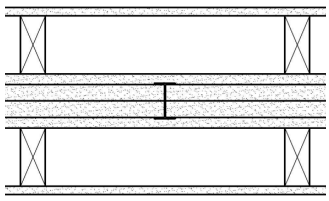
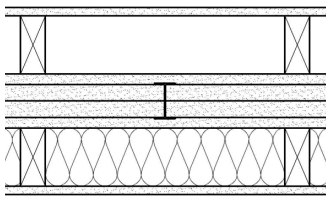
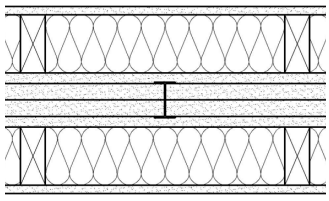
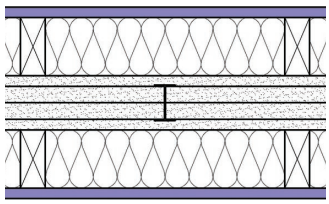
GYPSUM BOARD PARTITIONS – SHAFTWALL SYSTEMS – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
119		4 Hr.	W419 V451 WP 7640	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2-1/2" (63.6 mm) steel C-T, C-H, or I studs 24" (610 mm) o.c. Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs on side opposite shaftliner panel with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Third layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. and fastened to inner layers of gypsum board with 1-1/2" (38.1 mm) Type G screws 12" (305 mm) o.c. centered between Type S screws. Hat-shaped furring channels applied horizontally over third layer to studs 16" (406 mm) o.c. with 2-1/4" (57.2 mm) Type S screws. Fourth layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to furring channels with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. and 8" (203 mm) o.c. at horizontal joints. Fifth layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically to furring channels with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. and 8" (203 mm) o.c. at horizontal joints and to fourth layer with 1-1/2" (38.1 mm) Type G screws 16" (406 mm) o.c. centered between the furring channels. Joints staggered each layer. Sound rating with 1-1/2" (38.1 mm) glass fiber insulation in stud cavity.	 58	 NGC 2016040

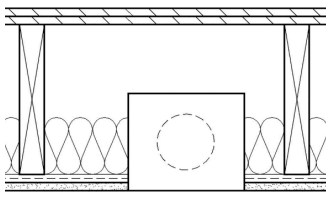
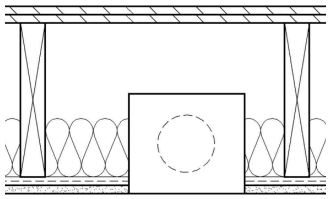
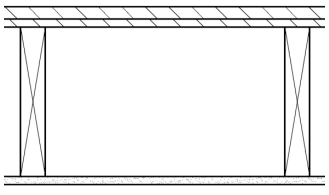
AREA SEPARATION FIRE WALLS

120		2 Hr.	WHI 694-0220.6	Two layers of 1" (25.4 mm) Shaftliner XP inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. H-studs and tracks covered by 1/2" (12.7 mm) Fire-Shield C Gypsum Board in 6" (152 mm) wide strips.	35	NGC 2827
121		2 Hr.	U347 ASW 0998	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 3/4" (19.1 mm) air space each side. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 1/2" (12.7 mm) Gold Bond Gypsum Board on each side. Sound rating with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity on each side.	 61	 RAL-TL05-199
122		2 Hr.	U347	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 3/4" (19.1 mm) air space each side. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 1/2" (12.7 mm) SoundBreak XP Wall Board on each side and 3-1/2" (88.9 mm) glass fiber insulation in stud cavity on each side.	65	NGC 2012081
123		2 Hr.	U347 ASW 0800	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 3/4" (19.1 mm) air space and adjacent construction each side. Sound rating with 2x4 (38.1 mm x 88.9 mm) wood stud partition and one layer of 5/8" (15.9 mm) SoundBreak XP Wall Board each side with 3-1/2" (88.9 mm) glass fiber insulation in stud cavity.	67	NRCC B-3451.1
124		3 Hr.	W454	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of H-studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. 2x4" (38.1 mm x 88.9 mm) wood stud partition on each side.	38	NGC 2017015

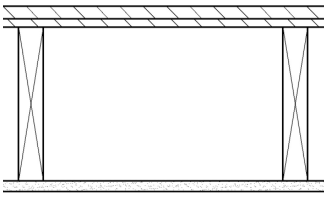
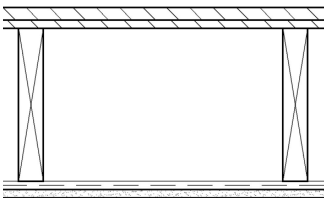
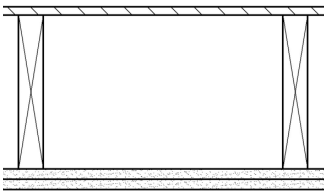
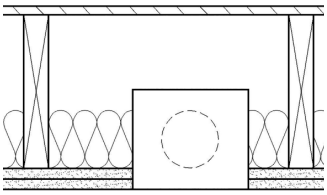
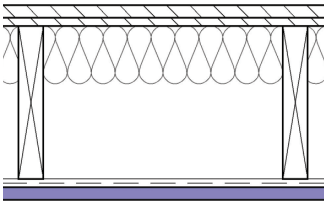
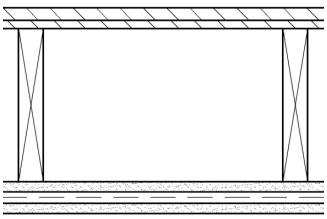
AREA SEPARATION FIRE WALLS – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
125		3 Hr.	W454	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of H-studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 1/2" (12.7 mm) Gold Bond Gypsum Board on each side.	46	NGC 2012027
				Sound rating with 1/2" (12.7 mm) Fire-Shield C Gypsum Board on wood stud partitions.	52	NGC 2017021
126		3 Hr.	W454	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of H-studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 1/2" (12.7 mm) Gold Bond Gypsum Board on each side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity on one side.	54	NGC 2012026
				Sound rating with 1/2" (12.7 mm) Fire-Shield C Gypsum Board on wood stud partitions.	61	NGC 2017020
127		3 Hr.	W454 ASW 2100	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of H-studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 1/2" (12.7 mm) Gold Bond Gypsum Board on each side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity on each side.	58	NGC 2017025
				Sound rating with 1/2" (12.7 mm) Fire-Shield C Gypsum Board on wood stud partitions.	62	NGC 2017019
128		3 Hr.	W454 ASW 2000	Two layers of 1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 2" (50.8 mm) steel H-studs 24" (610 mm) o.c. 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied vertically or horizontally to each side of H-studs with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. 2x4 (38.1 mm x 88.9 mm) wood stud partition with one layer of 5/8" (15.9 mm) SoundBreak XP Wall Board on each side. 3-1/2" (88.9 mm) glass fiber insulation in stud cavity on each side.	68	NGC 2017018

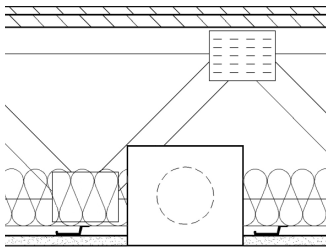
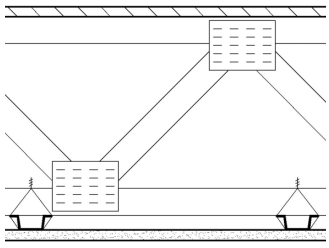
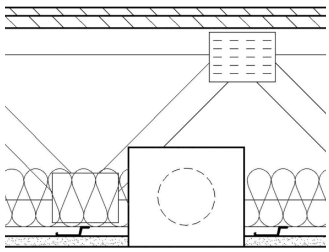
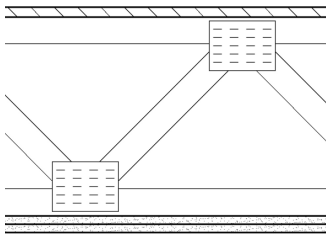
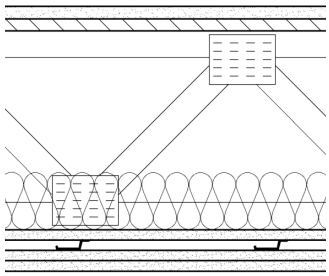
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – WOOD FRAMED

129		1 Hr.	M563	5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to resilient channels 12" (305 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Resilient channels applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type S screws. Minimum 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation installed directly over gypsum board. Wood joists supporting 15/32" (11.9 mm) wood structural panels and 15/32" (11.9 mm) wood structural panels finish floor or floor topping mixture.		
130		1 Hr.	M563	5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Resilient channels applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type S screws. Minimum 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation installed directly over gypsum board. Wood joists supporting 15/32" (11.9 mm) wood structural panels and 15/32" (11.9 mm) wood structural panels finish floor or floor topping mixture.		
131		1 Hr.	L522 FC 5410	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-3/4" (44.5 mm) long, 5d nails 6" (152 mm) o.c. Wood joists supporting 15/32" (11.9 mm) wood structural panels and nominal 1" (25.4 mm) wood finish floor or floor topping mixture. IIC: No carpet – 32 IIC: Carpet and pad – 66	37	NGC 4084

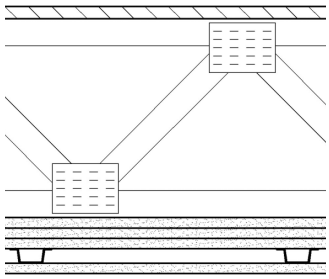
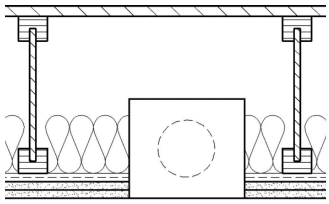
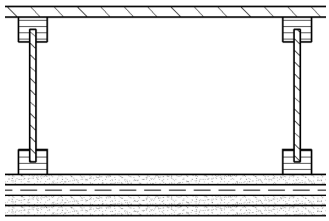
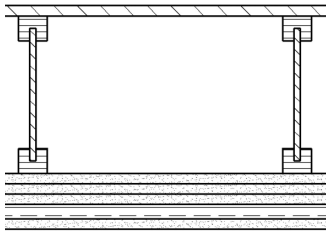
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – WOOD FRAMED – CONTINUED

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
132 	1 Hr.	L501 FC 5420	5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d nails 6" (152 mm) o.c. Wood joists supporting 15/32" (11.9 mm) wood structural panels and nominal 1" (25.4 mm) wood finish floor or floor topping mixture. IIC: No carpet – 32 IIC: Carpet and pad – 66	37	NGC 4024
133 	1 Hr.	L515 FC 5300	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. at ends and 12" (305 mm) o.c. at intermediate channels. Gypsum board end joints located midway between continuous channels and fastened to additional channels 64" (1.6 m) long with screws 8" (203 mm) o.c. Resilient channels applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-7/8" (47.6 mm) long, 6d coated nails. Wood joists supporting 15/32" (11.9 mm) wood structural panels and nominal 1" (25.4 mm) wood finish floor or floor topping mixture.	45	NGC 4010
134 	1 Hr.	FC 5529	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W or S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to joists with 1-7/8" (47.6 mm) Type W or S screws 12" (305 mm) o.c. at joints and intermediate joists and 1-1/2" (38.1 mm) Type G screws 12" (305 mm) o.c. placed 2" (50.8 mm) from each side of end joints. Joints staggered each layer. Wood joists supporting 1/2" (12.7 mm) plywood. Ceiling provides 1-hour fire-resistance protection for framing, including trusses.		
135 	1 Hr.	M559	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 16" (406 mm) o.c. in the field and 8" (203 mm) at butt joints. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to joists with 2" (50.8 mm) Type W screws 8" (203 mm) o.c. in the field and at butt joints. Minimum 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation installed directly over gypsum board. Wood joists supporting 19/32" (15.1 mm) wood structural panels.		
136 	1 Hr.	M514	3/4" (19.1 mm) SoundBreak XP Ceiling Board applied at right angles to resilient channels 24" (610 mm) with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Gypsum Board ends fastened to additional piece of resilient channel. End joints staggered 48" (1.22 m). Resilient channels applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type S screws. Wood joist supporting 15/32" (11.9 mm) plywood subfloor and nominal 1" (25.4 mm) wood finish floor or floor topping mixture. Maximum 3-1/2" (88.9 mm) glass fiber insulation secured against the underside of the subfloor with staples 12" (305 mm) o.c. IIC: 61	59	NGC 5019008 NGC 7019008
137 	2 Hr.	L505 FC 5724	Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to 2x10 (38.1 mm x 241 mm) wood joists 16" (406 mm) o.c. with 2-1/2" (63.6 mm) long, 8d nails 7" (178 mm) o.c. Resilient channels applied at right angles to wood joists through base layer 24" (610 mm) o.c. with 2-1/2" (63.6 mm) long, 8d nails. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Wood joists supporting 15/32" (11.9 mm) wood structural panels and nominal 1" (25.4 mm) wood finish floor or floor topping mixture.		

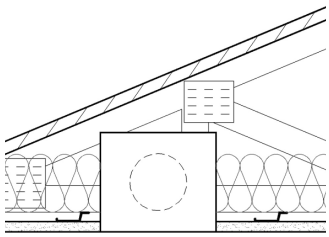
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – WOOD FRAMED – CONTINUED

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
138 	1 Hr.	L558 L563 FC 5078	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 12" (305 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Gypsum board end joints fastened with screws 8" (203 mm) o.c. to additional channels 60" (1.5 m) long located 3" (76.2 mm) from end joint. Resilient channels applied at right angles to 18" (457 mm) deep parallel chord wood trusses 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S or W screws. Glass fiber or mineral fiber batt or loose fill insulation installed directly over gypsum board. Wood trusses supporting 23/32" (18.3 mm) wood structural panels and 15/32" (11.9 mm) wood structural panels finish floor or floor topping mixture.	55	NGC 5011031
139 	1 Hr.	L528 FC 5516	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to 7/8" (22.2 mm) rigid furring channels 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. and 1-1/2" (38.1 mm) from edges. Gypsum board end joints located midway between continuous channels and fastened to additional channels 60" (1.5 m) long with screws 12" (305 mm) o.c. Rigid furring channels applied at right angles to 12" (305 mm) deep parallel chord wood trusses 24" (610 mm) o.c. with double-strand 18-gauge galvanized steel wire ties 48" (1,219 mm) o.c. Wood trusses supporting 23/32" (18.3 mm) wood structural panels.		
140 	1 Hr.	L558 M550 WP 5051	5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 8" (203 mm) o.c. Gypsum board end joints fastened with screws 8" (203 mm) o.c. to additional channels 60" (1.5 m) long located 3" (76 mm) from end joint. Resilient channels applied at right angles to 18" (457 mm) deep parallel chord wood trusses 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S or W screws. Minimum 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation installed directly over gypsum board. Wood trusses supporting 23/32" (18.3 mm) wood structural panels and 15/32" (11.9 mm) wood structural panel finish floor or floor topping mixture. IIC: 55	57	NGC 5019061 NGC 7019084
141 	1 Hr.	FC 5512	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to parallel chord wood trusses 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to trusses with 1-7/8" (47.6 mm) Type S screws 12" (305 mm) o.c. and 1-1/2" (38.1 mm) Type G screws 12" (305 mm) o.c. placed 3" (76.2 mm) from each side of end joints. Joints staggered each layer. Trusses supporting 19/32" (15.1 mm) plywood.		
142 	2 Hr.	M500 FC 5650	Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to 12" (305 mm) deep parallel chord wood trusses with 1-5/8" (41.3 mm) Type S screws 8" (203 mm) o.c. Resilient furring channels 12" (305 mm) o.c. applied at right angles to wood trusses through base layer with 1-7/8" (47.6 mm) Type S screws. Second layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels with 1" (25.4 mm) Type S-12 screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels through second layer with 1-5/8" (41.3 mm) Type S-12 screws 8" (203 mm) o.c. Joints staggered each layer. Mineral wool or glass fiber insulation draped over gypsum board. Trusses supporting 23/32" (18.3 mm) wood structural panels and floor topping mixture. IIC: 59	58	NGC 5020065 NGC 7020076

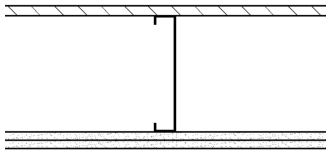
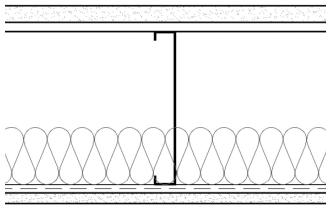
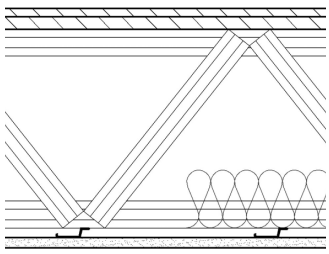
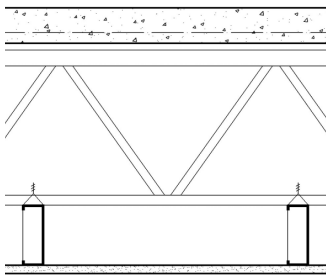
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – WOOD FRAMED – CONTINUED

Item No.	Fire Rating	UL/GA Design	Description	STC	Test No.
143 	2 Hr.	L556 FC 5751	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 18" (457 mm) deep parallel chord wood trusses 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to trusses with 2" (50.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered 24" (610 mm) from base layer. Third layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to trusses with 2-1/2" (63.6 mm) Type W screws 12" (305 mm) o.c. Joints staggered 12" (50.8 mm) from second layer. 7/8" (22.2 mm) rigid furring channels 24" (610 mm) o.c. applied at right angles to trusses over third layer with two 2-1/2" (63.6 mm) Type W screws at each truss. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to furring channels with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Trusses supporting 3/4" (19.1 mm) plywood.		
144 	1 Hr.	M546 FC 5079	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. in the field and 8" (203 mm) at butt joints. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels through second layer with 1-5/8" (41.3 mm) Type S screws 8" (203 mm) o.c. and 1-1/2" (38.1 mm) Type G screws 8" (203 mm) o.c. midway between channels at butt joints. Resilient channels applied at right angles to 9-1/2" (241 mm) wood I-joists 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws. Minimum 3-1/2" (88.9 mm) glass fiber or mineral fiber batt insulation installed directly over gypsum board. I-joists supporting 19/32" (15.1 mm) wood structural panels and 15/32" (11.9 mm) wood structural panels finish floor or floor topping mixture. IIC: 61	58	NGC5019076 NGC 7019100
145 	2 Hr.	L538	Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to 9-1/2" (241 mm) wood I-joists 19.2" (488 mm) o.c. with 1-5/8" (41.3 mm) Type S screws 8" (203 mm) o.c. Resilient channels 16" (406 mm) o.c. applied at right angles to wood joists through base layer with 1-7/8" (47.6 mm) Type S screws at each joist. Second layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels with 1" (25.4 mm) Type S-12 screws 8" (203 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels through second layer with 1-5/8" (41.3 mm) Type S-12 screws 8" (203 mm) o.c. Joints staggered minimum 16" (406 mm) from second layer. I-joists supporting 5/8" (15.9 mm) wood structural panel floor applied at right angle to joists.		
146 	2 Hr.	L556 FC 5750	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 9-1/2" (241 mm) wood I-joists 24" 610 mm) o.c. with 1-1/4" (31.8 mm) Type W screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to I-joists with 2" (50.8 mm) Type W screws 12" (305 mm) o.c. Joints staggered 24" (610 mm) from base layer. Third layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to I-joists with 2-1/2" (63.6 mm) Type W screws 12" (305 mm) o.c. Joints staggered 12" (305 mm) from second layer. 7/8" (22.2 mm) rigid furring channels 24" (610 mm) o.c. applied at right angles to I-joists over third layer with two 2-1/2" (63.6 mm) Type W screws at each truss. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to furring channels with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. I-joists supporting 3/4" (19.1 mm) plywood.		

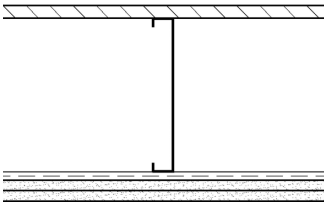
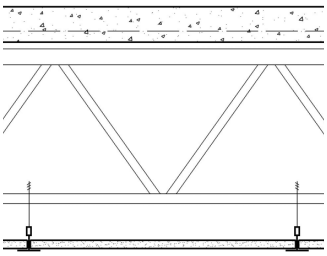
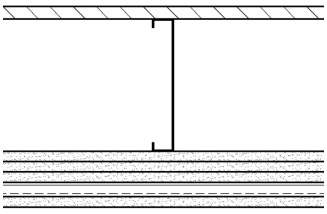
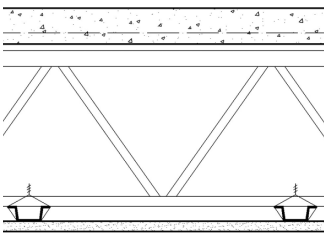
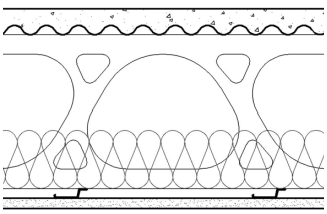
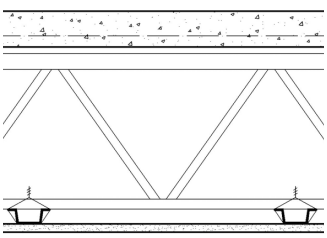
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – WOOD FRAMED – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
147		1 Hr.	P533 RC 2603	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 12" (305 mm) o.c. with 1-1/8" (28.6 mm) Type S screws 8" (203 mm) o.c. Resilient channels applied at right angles to bottom chord of wood trusses 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S screws. Glass fiber insulation draped over the back of the channels. Wood trusses supporting 15/32" (11.9 mm) wood structural panels.		

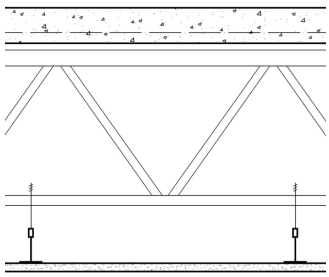
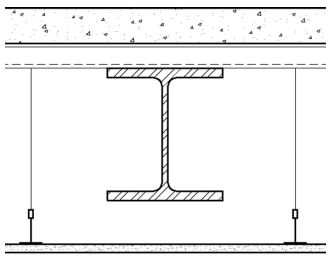
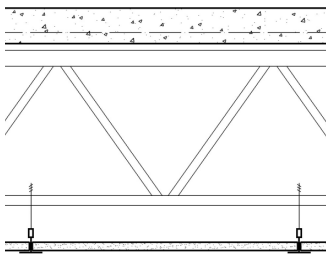
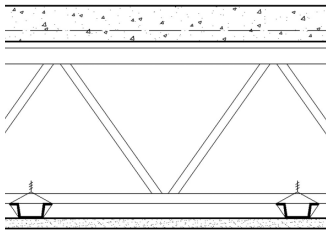
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – STEEL FRAMED

148		1 Hr.	L524 FC 4502	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to 7" (178 mm) deep, 18-gauge steel joists 24" (610 mm) o.c. with 1" (25.4 mm) Type S-12 screws 8" (203 mm) o.c. at ends and 12" (305 mm) o.c. at intermediate joists. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to joists with 1-1/2" (38.1 mm) Type G screws 8" (203 mm) o.c. at ends located between joists and 1-5/8" (41.3 mm) Type S-12 screws 12" (305 mm) o.c. at joists. Joints offset from base layer joints. Steel joists supporting 19/32" (15.1 mm) wood structural panels.		
149		1 Hr.	G560	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 12" (305 mm) o.c. with 1" (25.4 mm) Type S screws 1-1/2" (38.1 mm) and 4" (102 mm) from board edges and 8" (203 mm) o.c. in the field. Resilient channels fastened to 9-1/4" (235 mm) deep, steel joists 24" (610 mm) o.c. with 1/2" (12.7 mm) Type S screws. Joists supporting 9/16" (14.3 mm) steel deck and floor topping mixture.		
150		1 Hr.	L565 FC 4515	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Gypsum board end joints fastened to additional channels 60" (1,524 mm) long with screws 12" (305 mm) o.c. located 3" (76.2 mm) from end joint. Resilient channels applied at right angles to light gauge steel trusses 48" (1,219 mm) o.c. with 1/2" (12.7 mm) Type S-12 screws. Steel trusses supporting 23/32" (18.3 mm) wood structural panels and 15/32" (11.9 mm) wood structural panel finish floor or floor topping mixture. Optional mineral wool or glass fiber insulation draped over resilient channels. Resilient channels spaced 12" (305 mm) o.c. when insulation is used.		
151		1 Hr.	FC 1105	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to 3-5/8" (92.1 mm) steel studs 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Studs fastened to steel bar joists 24" (610 mm) o.c. with wire ties 8' (2.4 m) o.c. 3/8" (9.5 mm) rib lath supporting 2-1/2" (63.6 mm) concrete slab.		

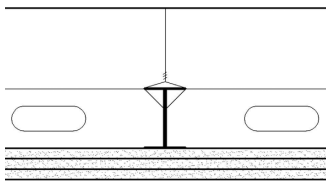
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – STEEL FRAMED – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
152		1-1/2 Hr.	L577	Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to channels through base layer with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Edge joints offset 16" (406 mm) from base layer joints. Butt joints of face layer fastened to base layer between resilient channels with 1-1/2" (38.1 mm) Type G screws 8" (203 mm) o.c. Resilient channels 16" (406 mm) o.c. applied at right angles to 9-3/8" (238 mm) deep, 16-gauge steel joists with 1/2" (12.7 mm) Type S-12 pan-head screws 24" (610 mm) o.c. Steel joists supporting 3/4" (19.1 mm) plywood.		
153		1-1/2 Hr.	G259 FC 1290	2' x 4' x 1/2" (610 mm x 1,219 mm x 12.7 mm) Gridstone Gypsum Ceiling Panels laid in fire-rated metal grid system suspended from steel joists supporting 2-1/2" (63.6 mm) concrete slab.		
154		2 Hr.	L556 FC 4750	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 8" (203 mm) deep, 18-gauge steel joists 24" (610 mm) o.c. with 1-1/4" (31.8 mm) Type S-12 screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to joists with 2" (50.8 mm) Type S-12 screws 12" (305 mm) o.c. Joints staggered 24" (102 mm) from base layer. Third layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to joists with 2-1/2" (63.6 mm) Type S-12 screws 12" (305 mm) o.c. Joints staggered 12" (305 mm) from second layer. 7/8" (22.2 mm) rigid furring channels 24" (610 mm) o.c. applied at right angles to joists over third layer with two 2-1/2" (63.6 mm) Type S-12 screws at each truss. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to furring channels with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Steel joists supporting 3/4" (19.1 mm) plywood.		
155		2 Hr.	G503	5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to rigid furring channels 12" o.c. (305 mm) with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Furring channels fastened to or suspended from steel bar joists 24" (610 mm) o.c. Bar joists supporting 2-1/2" (63.6 mm) concrete slab.		
156		2 Hr.	G563	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 12" (305 mm) o.c. with 1" (25.4 mm) Type S screws 8" (203 mm) o.c. Resilient channels fastened to 9-1/4" (235 mm) deep proprietary steel joists. Joists supporting steel deck and floor topping mixture.		
157		2 Hr.	G514 FC 2030	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to rigid furring channels 24" (610 mm) o.c. with 1" (25.4 mm) type S screws 12" (305 mm) o.c. Furring channels fastened to or suspended from steel bar joists 24" (610 mm) o.c. with wire ties 48" (1,219 mm) o.c. Bar joists supporting 2-1/2" (63.6 mm) concrete slab. IIC: No carpet – 21 IIC: Carpet and pad – 67	53	NGC 4075

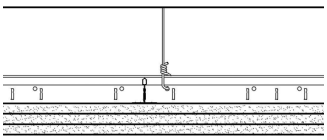
GYPSUM BOARD FLOOR/CEILING ASSEMBLIES – STEEL FRAMED – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
158		2 Hr.	G523	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to cross tees of metal suspension system with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Ceiling grid suspended from steel bar joists 24" (610 mm) o.c. supporting 2-1/2" (63.6 mm) concrete slab.		
159		2 Hr.	D502	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to cross tees of metal suspension system with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Ceiling grid suspended from 2-1/2" (63.6 mm) concrete slab on steel deck.		
160		2 Hr.	G222 FC 2190	2' x 2' x 1/2" (610 mm x 610 mm x 12.7 mm) Gridstone Gypsum Ceiling Panels laid in fire-rated metal grid system suspended from steel joists supporting 2-1/2" (63.6 mm) concrete slab.		
161		3 Hr.	G512 FC 3012	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to rigid furring channels 24" (610 mm) o.c. with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Furring channels fastened to bar joists 24" (610 mm) o.c. with wire ties. Bar joists supporting 2-1/2" (63.6 mm) concrete slab.		

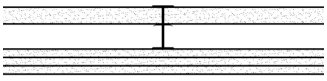
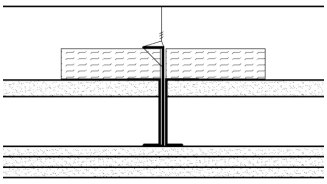
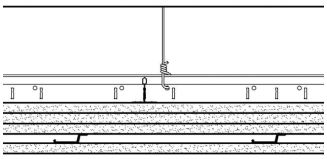
GYPSUM BOARD HORIZONTAL MEMBRANES

162		1 Hr.	I504 HM 7101	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to 3-5/8 in (92.1 mm) steel studs 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to studs with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. with end and edge joints staggered 16" (406 mm) from base layer joints. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. with end and edge joints staggered 16" (406 mm) from joints in second layer.		

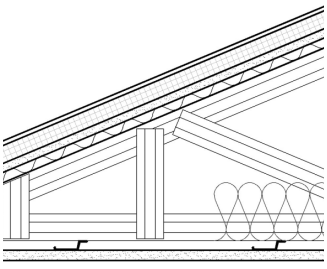
GYPSUM BOARD HORIZONTAL MEMBRANES – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
163		1 Hr.	I504	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to cross Tees of suspended ceiling grid system spaced 16" (406 mm) o.c. with 1" (25.4 mm) Type S screws 16" (406 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to Tees with 1-5/8" (41.3 mm) Type S screws 16" (406 mm) o.c. with end and edge joints staggered 16" (406 mm) from base layer joints. Face layer 5/8" (15.9 mm) Fire Shield Gypsum Board applied at right angles to Tees with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c. with end and edge joints staggered 16" (406 mm) from joints in second layer.		

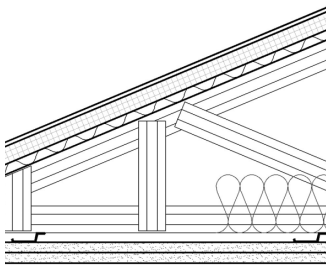
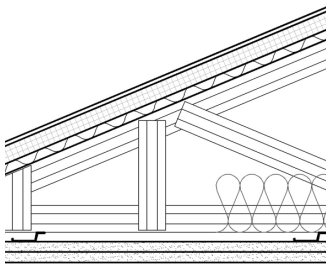
HORIZONTAL SHAFTWALL MEMBRANES AND DUCT PROTECTION SYSTEMS

164		2 Hr.	WHI 694-0300.1	1" (25.4 mm) Shaftliner XP inserted between flanges of 2-1/2" (63.6 mm) steel I-studs 24" (610 mm) o.c. Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied parallel to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied parallel to studs with 1-5/8" (41.3 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied at right angles to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c.		
165		2 Hr.	I516 HM 7201	1" (25.4 mm) Shaftliner XP or eXP Shaftliner inserted between flanges of 4" (102 mm) steel C-T studs 24" (610 mm) o.c. C-T studs supported by J-Tracks fastened to each side of 6" (152 mm) steel track 8' (2.4 m) o.c. 6" (152 mm) steel track suspended from deck with 8-gauge steel wires. 2" x 6" (50.8 mm x 152 mm) strips of mineral wool insulation draped over J-Tracks on each side of 6" (152 mm) track. Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to studs with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to studs with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied with long dimension parallel to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c.		
166		2 Hr.	I512 HM 7207	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to cross Tees of suspended ceiling grid system spaced 16" (406 mm) o.c. with 1-1/4" (31.8 mm) Type S screws 12" (305 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to Tees with 2" (50.8 mm) Type S screws 12" (305 mm) o.c. Third layer 5/8" (15.9 mm) Fire Shield Gypsum Board applied at right angles to Tees with 2-1/2" (63.5 mm) Type S screws 12" (305 mm) o.c. Resilient channels 16" (406 mm) o.c. fastened perpendicular to cross Tees with 2-1/4" (57.2 mm) Type S screws. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to resilient channels with 1" (25.4 mm) Type S screws 12" (305 mm) o.c.		

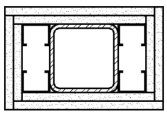
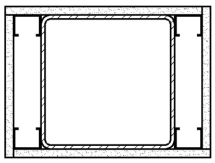
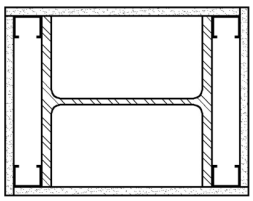
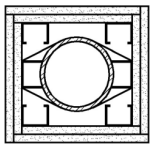
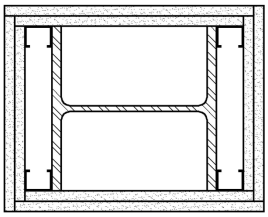
GYPSUM BOARD ROOF/CEILING ASSEMBLIES – STEEL FRAMED

167		1 Hr.	P540 RC 2501	5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Gypsum board end joints fastened to additional channels 60" (1.5 m) long with screws 12" (305 mm) o.c. located 3" (76.2 mm) from end joint. Resilient channels fastened to steel trusses 48" (1,219 mm) o.c. with 1/2" (12.7 mm) S-12 screws. Resilient channels spaced 12" (305 mm) o.c. when insulation is used. Steel trusses supporting steel roof deck covered by 1/2" (12.7 mm) eXP Fire-Shield Sheathing. Insulation boards laid over gypsum sheathing and covered with a class A, B or C roofing system. Optional mineral wool or glass fiber insulation draped over resilient channels. Resilient channels spaced 12" (305 mm) o.c. when insulation is used.		

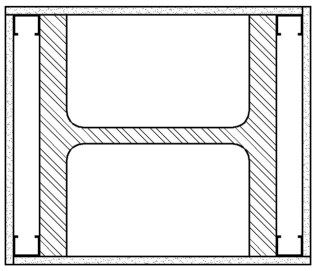
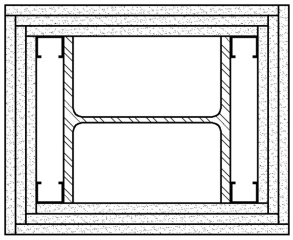
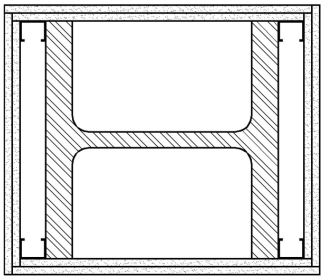
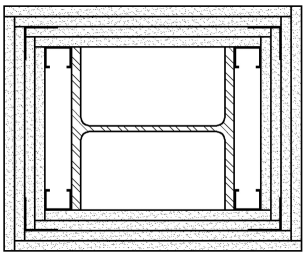
GYPSUM BOARD ROOF/CEILING ASSEMBLIES – STEEL FRAMED – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
168		1 Hr.	P541	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied at right angles to resilient channels 24" (610 mm) o.c. with 1-1/8" (28.6 mm) Type S screws 8" (203 mm) o.c. at ends and 12" (305 mm) o.c. at intermediate channels. Gypsum board end joints fastened to additional channels extending 3" (76.2 mm) beyond ends of end joints. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with long dimension perpendicular to channels with 1-3/4" (44.5 mm) Type S screws 8" (203 mm) o.c. Resilient channels fastened to steel trusses 48" (1,219 mm) o.c. with 1/2" (12.7 mm) Type S-12 screws. Steel trusses supporting steel roof deck and covered with a class A, B or C roofing system. Optional mineral wool or glass fiber insulation draped over resilient channels. Resilient channels spaced 12" (305 mm) o.c. when insulation is used.		
169		2 Hr.	P543 FC 2752	Base layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to resilient channels 16" (406 mm) o.c. with 1-1/8" (28.6 mm) Type S screws 12" (305 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield C Gypsum Board applied at right angles to channels through base layer with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Resilient channels fastened to steel trusses 48" (1,219 mm) o.c. with 1/2" (12.7 mm) Type S-12 screws. Resilient channels spaced 12" (305 mm) o.c. when insulation is used. Steel trusses supporting steel roof deck covered by 1/2" (12.7 mm) eXP Sheathing or 1/2" (12.7 mm) DEXcell Roof Board. Insulation boards laid over gypsum sheathing and covered with a class A, B or C roofing system.		

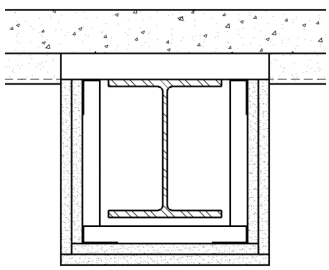
GYPSUM BOARD FIREPROOFING – STEEL COLUMNS

170		1 Hr.	X528 CM 1452	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of TS 4x4x0.188 steel tube column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-3/4" (44.5 mm) Type S screws 12" (305 mm) o.c.		
171		1 Hr.	X528 CM 1851	5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of TS 8x8x.250 steel tube column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c.		
172		1 Hr.	X528 CM 1001	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W10x49 steel column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c.		
173		1-1/2 Hr.	X531	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of 4-1/2" (114 mm) OD steel pipe column with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c.		
174		2 Hr.	X528 CM 2017	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W10x49 steel column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically with 1-3/4" (44.5 mm) Type S screws 12" (305 mm) o.c.		

GYPSUM BOARD FIREPROOFING – STEEL COLUMNS – CONTINUED

Item No.		Fire Rating	UL/GA Design	Description	STC	Test No.
175		2 Hr.	X520 CM 2110	1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W14x228 steel column with 1" (25.4 mm) Type S screws 12" (305 mm) o.c.		
176		3 Hr.	X510 CM 3120	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W10x49 steel column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. and wire tied with two strands 18-gauge wire 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c.		
177		3 Hr.	X513 CM 3130	Base layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W14x228 steel column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Face layer 1/2" (12.7 mm) Fire-Shield C Gypsum Board applied vertically to studs with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c.		
178		4 Hr.	X501	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically to 1-5/8" (41.3 mm) steel studs at each corner of W10x49 steel column with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. Second layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. 2" x 2" (50.8 mm x 50.8 mm) 25-gauge steel angles applied to corners with 1-5/8" (41.3 mm) Type S screws 24" (610 mm) o.c. Third layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically and fastened to angles with 1" (25.4 mm) Type S screws 12" (305 mm) o.c. and wire tied with two strands 18-gauge wire 24" (610 mm) o.c. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied vertically and fastened to angles with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c.		

GYPSUM BOARD FIREPROOFING – STEEL BEAMS

179		2 Hr.	N501 BM 2120	Base layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied with 1-1/4" (31.8 mm) Type S screws 16" (406 mm) o.c. to steel frames 24" (610 mm) o.c. fabricated from 25-gauge, 1" (25.4 mm) x 2" (50.8 mm) steel angles. Face layer 5/8" (15.9 mm) Fire-Shield Gypsum Board applied to frames with 1-3/4" (44.5 mm) Type S screws 8" (203 mm) o.c.		

Product Overview

Gold Bond® XP® Gypsum Board Products

Gold Bond® XP® Gypsum Board – See page 51.

Gold Bond® XP® Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. With PURPLE paper on the face side and heavy mold- and moisture-resistant, 100% recycled gray paper on the back side, you can count on XP Gypsum Board to help protect your projects from mold.

Thickness: 1/2" (12.7 mm) / Regular, Type C
5/8" (15.9 mm) / Type C, Type X

Width: 4' (1,219 mm)
54" (1,372 mm) / 5/8" Type X

Length: 8' – 12' (2,438 – 3,658 mm)

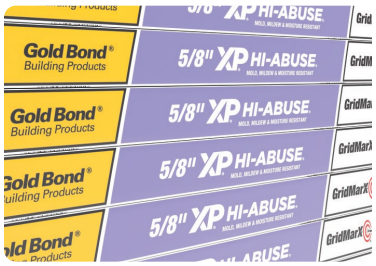
Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® XP® Hi-Abuse® Gypsum Board – See page 57.



Gold Bond® XP® Hi-Abuse® Gypsum Board has a mold- and moisture-resistant Type X gypsum core encased in abrasion-, mold- and moisture-resistant, 100% recycled PURPLE paper on the face side and heavy mold- and moisture-resistant, 100% recycled gray paper on the back side. This abuse-resistant gypsum board is ideal to use in wall assemblies where surface abrasion is a concern, such as corridors, entryways, lobby areas and warehouses.

Thickness: 5/8" (15.9 mm) / Type X

Width: 4' (1,219 mm)

Length: 8' – 12' (2,438 – 3,658 mm)

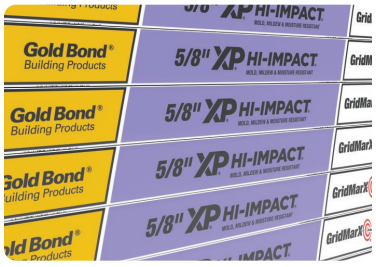
Tapered Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® XP® Hi-Impact® Gypsum Board – See page 61.



Gold Bond® XP® Hi-Impact® Gypsum Board offers the same mold-, moisture- and abuse-resistant features as XP® Hi-Abuse® Gypsum Board. In addition, it has fiberglass mesh embedded into the core, providing even more impact/penetration resistance. It can be used as a tile backer board in dry areas or areas with limited water exposure, such as toilet/sink areas and areas above tile in tubs and showers.

Thickness: 5/8" (15.9 mm) / Type X

Width: 4' (1,219 mm)

Length: 8' – 12' (2,438 – 3,658 mm)

Tapered Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Grade X

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® SoundBreak XP Wall® Board – See page 66.

Gold Bond® SoundBreak XP Wall® Board consists of two pieces of high-density, mold-, mildew- and moisture-resistant gypsum board, with a specially designed PURPLE paper, laminated together with a sound-damping, viscoelastic polymer. Use it for interior wall assemblies where sound transmission between rooms or dwelling units is a concern.

Thickness: 1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Slightly Tapered Edge
Features GridMarX® guide marks
ASTM C1396, ASTM C1766
Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® SoundBreak XP Ceiling® Board – See page 71.

Gold Bond® SoundBreak XP Ceiling® Board consists of two pieces of high-density, mold-, mildew- and moisture-resistant gypsum board, with a specially designed PURPLE paper, laminated together with a sound-damping, viscoelastic polymer. It provides higher Sound Transmission Class (STC) and Impact Insulation Class (IIC) values than standard gypsum board when applied to the underside of fire-rated floor-ceiling assemblies where airborne sound transmission and structurally transmitted sound are a concern.

Thickness: 3/4" (19.1 mm) / Type C
Width: 4' (1,219 mm)
Length:* 8' – 10' (2,438 – 3,048 mm)

Slightly Tapered Edge
Features GridMarX® guide marks
ASTM C1396, ASTM C1766
Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® SoundBreak XP Retrofit® Board – See page 75.

Gold Bond® SoundBreak XP Retrofit® Board consists of a high-density, mold- and moisture-resistant gypsum board with specially designed PURPLE paper on the front and a sound-damping, viscoelastic polymer adhered to the back paper. Use SoundBreak XP Retrofit on one side of a gypsum board wall to improve the acoustical performance by creating a constrained damping layer when installed over the existing surface.

Thickness: 5/16" (7.9 mm)
Width: 4' (1,219 mm)
Length: 10' (3,048 mm)

Slightly Tapered Edge
Features GridMarX® guide marks
ASTM C1396, ASTM C1766
Fed. Spec. #: SS-L-30D Type III Grade X

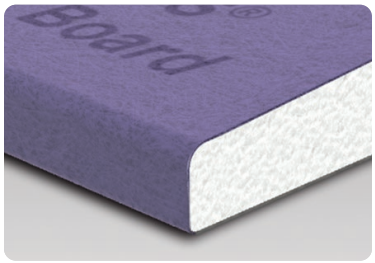
Gold Bond® XP® Fire-Shield® Radius Gypsum Board – See page 79.

Gold Bond® XP® Fire-Shield® Radius Gypsum Board consists of a high-density, fire-resistant gypsum core encased in a heavy, abrasion- and mold-, mildew- and moisture-resistant PURPLE paper. Used in the construction of multi-layered, fire-rated wall assemblies. Specifically engineered for radius applications requiring a fire rating.

Thickness: 5/16" (7.9 mm)
Width: 4' (1,219 mm)
Length: 8' (2,438 mm), 10' (3,048 mm), 12' (3,658 mm)

Tapered Edge
Features GridMarX® guide marks
ASTM C1396
Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® XP® Ultra-Shield FS® Gypsum Board – See page 83.

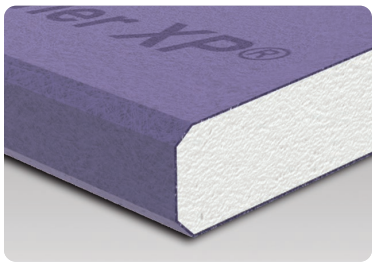


Gold Bond® XP® Ultra-Shield FS® Gypsum Board consists of a mold-, mildew-, moisture- and fire-resistant gypsum core encased in heavy, 100% recycled paper on the face and back sides. Use it for 2- and 3-hour wall partitions and 2-hour cavity shaftwall assemblies to reduce material and installation labor.

Thickness: 3/4" (19.1 mm)
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Slightly Tapered Edge
Features GridMarX® guide marks
ASTM C1396, ASTM C1766
Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® Shaftliner XP® – See page 87.



Gold Bond® Shaftliner XP® gypsum panels consist of a fire-resistant Type X gypsum core encased in a mold-, mildew- and moisture-resistant, 100% recycled PURPLE paper on the face and back sides.

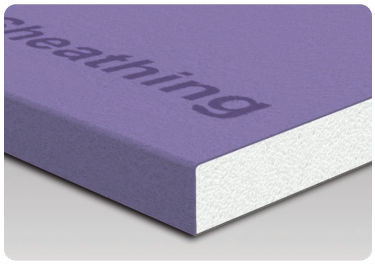
Shaftliner XP panels are designed to be used to construct lightweight fire barriers for elevator shafts, stairwells and area separation fire walls in multifamily housing.

Thickness: 1" (25.4 mm) / Type X
Width: 2' (610 mm)
Length: 8' – 12' (2,438 – 3,658 mm)

Double Beveled Edge
ASTM C1396
Fed. Spec. #: SS-L-30D Type III Grade X

Gold Bond® eXP® Gypsum Panel Products

Gold Bond® eXP® Sheathing – See page 92.



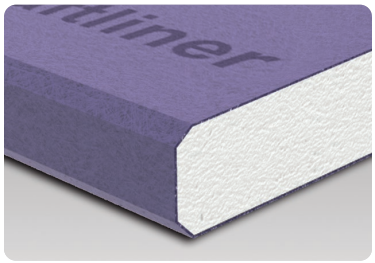
Gold Bond® eXP® Sheathing consists of a moisture- and mold-resistant gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides. The glass mat is folded around the long edges to reinforce and protect the core, and it provides superior weather resistance. Use eXP Sheathing for attachment to the outside of wall and soffit framing as a substrate for exterior cladding.

Thickness: 1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Square Edge
Features GridMarX® guide marks
ASTM C1177
Fed. Spec. #: SS-L-30D Type II Grade X

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® eXP® Shaftliner – See page 98.



Gold Bond® eXP® Shaftliner consists of an enhanced moisture- and mold-resistant Type X gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides. Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 hr.).

Thickness: 1" (25.4 mm) / Type X
Width: 2' (610 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Double Beveled Edge
ASTM C1658
Fed. Spec. #: SS-L-30D Type II Grade X

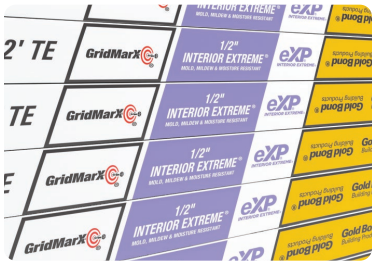
Gold Bond® eXP® Tile Backer – See page 101.

eXP Tile Backer is an acrylic-coated, moisture- and mold-resistant gypsum panel specially designed for use as a substrate for tile applications in high moisture rooms. Use eXP Tile Backer as a code-compliant substrate for tile and other finishes in both wet and non-wet areas, areas of high humidity and fire-rated assemblies (5/8" Type X). It is ideally suited for interior walls and ceilings.

Thickness: 1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X
Width: 4' (1,219 mm)
Length:* 8' (2,438 mm)

Square Edge
ASTM C1178
Fed. Spec. #: SS-L-30D Type II Grade X

Gold Bond® eXP® Interior Extreme® Gypsum Panel – See page 106.



Gold Bond® eXP® Interior Extreme® Gypsum Panels consist of a moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. Use it wherever gypsum board is specified in interior applications for the entire project, wood or metal framing, for increased resistance to incidental moisture.

Thickness: 1/2" (12.7 mm) / Regular, Type C
5/8" (15.9 mm) / Type C, Type X
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Tapered Edge
Features GridMarX® guide marks
ASTM C1658
Fed. Spec. #: SS-L-30D Type II Grade X

Gold Bond® eXP® Interior Extreme® AR Gypsum Panel – See page 111.

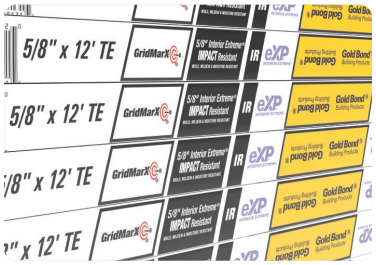
Gold Bond® eXP® Interior Extreme® AR Gypsum Panels consist of an abuse-, moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. The AR panel has a denser core and an enhanced glass mat. Use it for interior applications in areas prone to surface abrasion and indentation.

Thickness: 5/8" (15.9 mm) / Type X
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Tapered Edge
Features GridMarX® guide marks
ASTM C1658
Fed. Spec. #: SS-L-30D Type II Grade X

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® eXP® Interior Extreme® IR Gypsum Panel – See page 115.



Gold Bond® eXP® Interior Extreme® IR Gypsum Panels consist of an impact-resistant and a moisture- and mold-resistant gypsum core encased in a coated, specially designed glass mat on the face, back and sides. It has a denser core and an enhanced glass mat for increased resistance to indentation and impact. Use it for interior applications requiring increased resistance to incidental moisture.

Thickness: 5/8" (15.9 mm) / Type X
Width: 4' (1,219 mm)
Length:* 8' – 12' (2,438 – 3,658 mm)

Tapered Edge

Features GridMarX® guide marks

ASTM C1658

Fed. Spec. #: SS-L-30D Type II Grade X

Gold Bond® Gypsum Board Products

Gold Bond® Gypsum Board – See page 119.

Gold Bond® Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face and back sides. Use it for interior, non-fire-rated wall and ceiling applications.

Thickness: 1/4" (6.4 mm) / Regular
3/8" (9.5 mm) / Regular
Width: 4' (1,219 mm)
Length: 8' – 12' (2,438 – 3,658 mm)

Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III

Gold Bond® High Strength LITE® Gypsum Board – See page 123.

Gold Bond® High Strength LITE® Gypsum Board is a gypsum board that is formulated to be 25% lighter than standard 1/2" gypsum board. The result is a superior board that is lighter in weight, sag resistant, and easier to handle. High Strength LITE® Gypsum Board can be used for walls and ceilings in non-fire rated single layer construction where framing members are spaced up to 24" o.c.

Thickness: 1/2" (12.7 mm) / Regular
Width: 4' (1,219 mm), 54" (1,372 mm)
Length: 4': 8' – 14' (2,438 – 4,267 mm)
54": 12' – 14' (3,657 – 4,267 mm)

Tapered or Square Edge

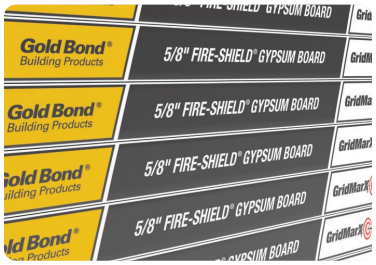
Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® Fire-Shield® Gypsum Board – See page 127.



Gold Bond® Fire-Shield® Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face and back sides. It features a Type X core to provide additional fire resistance ratings when used in laboratory tested systems. A specially formulated Type C core is also available when required.

Thickness: 1/2" (12.7 mm) / Type C
5/8" (15.9 mm) / Type C, Type X

Width: 1/2": 4' (1,219 mm)
5/8": 4' (1,219 mm), 54" (1,372 mm)

Length: 8' – 12' (2,438 - 3,658 mm)

Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type II Grade X

Gold Bond® High Strength Fire-Shield 30® Gypsum Board – See page 131.

Gold Bond® High Strength Fire-Shield 30® Gypsum Board consists of a fire-resistant, non-Type X gypsum core specially formulated to be 30% lighter than standard Type X gypsum board. High Strength Fire-Shield 30 is approved for single layer gypsum board construction for 30-minute fire-rated or non-rated assemblies.

Thickness: 5/8" (15.9 mm) / Non-Type X

Width: 4' (1,219 mm), 54" (1,372 mm)

Length: 8' – 12' (2,438 - 3,658 mm)

Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III

Gold Bond® High Strength Fire-Shield 60® Gypsum Board – See page 135.

Gold Bond® High Strength Fire-Shield 60® Gypsum Board consists of a fire-resistant, Type X gypsum core specially formulated to be 20% lighter than standard Type X gypsum board. High Strength Fire-Shield 60 Gypsum Board features a Type X core to provide additional fire-resistance ratings when used in specific UL designs.

Thickness: 5/8" (15.9 mm) / Type X

Width: 4' (1,219 mm), 54" (1,372 mm)

Length: 8' – 12' (2,438 - 3,658 mm)

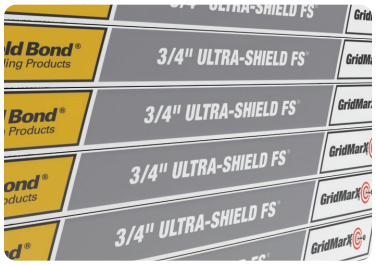
Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III

Gold Bond® Ultra-Shield FS® Gypsum Board – See page 139.



Gold Bond® Ultra-Shield FS® Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face and back sides. Use it for 2- and 3-hour wall partitions, and 2-hour cavity shaftwall assemblies to reduce material and installation labor.

Thickness: 3/4" (19.1 mm)

Width: 4' (1,219 mm)

Length: 8' – 12' (2,438 – 3,658 mm)

Tapered Edge

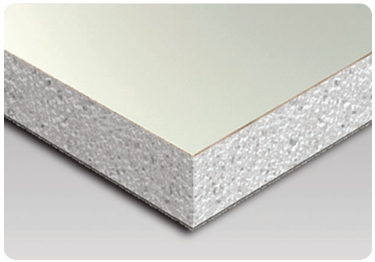
Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Grade X

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® Foil Back Gypsum Board – See page 143.



Gold Bond® Foil Back Gypsum Board consists of a fire-resistant gypsum core with 100% recycled paper on the face side and strong liner paper on the back side. A Type III aluminum foil vapor retarder, laminated to the back surface, is designed to prevent condensation from occurring within the wall cavity. Use it on the interior face of exterior walls and ceilings in new construction and remodeling with furred masonry, wood or steel framing.

Thickness: 1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X

Width: 1/2": 4' (1,219 mm)
5/8": 4' (1,219 mm), 54" (1,372 mm)

Length: 8' – 16' (2,438 – 4,877 mm)

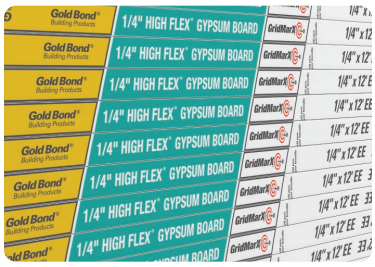
Tapered or Square Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Form C

Gold Bond® High Flex® Gypsum Board – See page 147.



Gold Bond® High Flex® Gypsum Board panels consist of a fire-resistant gypsum core encased in heavy, natural-finish paper on the face side and strong liner paper on the back side. It is specifically designed for radius construction such as curved walls, archways and stairways. It can be used for both concave and convex surfaces. High Flex Gypsum Board is typically applied in double layers.

Thickness: 1/4" (6.4 mm) / Regular

Width: 4' (1,219 mm)

Length: 8' (2,438 mm)

Slightly Tapered Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type III

Gold Bond® Kal-Kore® Plaster Base – See page 151.

Gold Bond® Kal-Kore® Plaster Base is a tapered edge gypsum plaster base with a 100% recycled, highly absorptive face paper surface designed to permit rapid trowel application of Gypsolite® Plaster, Two-Way Hardwall Plaster, Kal-Kote® Basecoat Plaster, Uni-Kal® or X-KALibur® Veneer Plasters.

Kal-Kore Plaster Base and veneer plaster systems may be specified for virtually all types of partition and ceiling constructions, including wood or steel framing, furring and masonry.

Thickness: 3/8" (9.5 mm) / Regular
1/2" (12.7 mm) / LITE, Type C
5/8" (15.9 mm) / Type C, Type X

Width: 3/8", 1/2" Type C and 5/8" Type X:
4' (1,219 mm), 54" (1,372 mm)
1/2" LITE, 5/8" Type C: 4' (1,219 mm)

Length: 8' – 12' (2,438 – 3,658 mm)

Tapered Edge

Features GridMarX® guide marks

ASTM C1396

Fed. Spec. #: SS-L-30D Type IV

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® Durasan® Prefinished Gypsum Board – See page 156.

Gold Bond® Durasan® Prefinished Gypsum Board consists of a fire-resistant gypsum core with a decorative vinyl covering over the face paper. Apply Durasan directly to metal or wood studs or as a finish layer over gypsum board. It is ideal for most demountable partition systems. Durasan eliminates the need for joint treatment and paint.

Thickness: 1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X

Width: 1/2": 4' (1,219 mm)
5/8": 4' (1,219 mm), 54" (1,372 mm)*

Length: 8' – 10' (2,438 – 3,048 mm)

Beveled Edge

ASTM C1396

Fed. Spec. #: SS-L-30D Type III Class 3, SS-L-30D Type III Grade X Class 3

* Special order

Gold Bond® Gridstone® Gypsum Ceiling Panels – See page 161.

Gold Bond® Gridstone® Gypsum Ceiling Panels consist of a non-combustible gypsum core. The 2-mil. white, stipple-textured vinyl laminate combines high light reflectance with easy cleanability. Gridstone panels are ideal for interior and unexposed exterior ceiling applications such as soffits, parking garages, kitchens and baths.

Thickness: 1/2" (12.7 mm) / Type X

Width: 2' (610 mm)
(Actual size is 23-3/4")

Length: GB-5044: 2' (610 mm)
(Actual size is 23-3/4")
GB-5045: 4' (1,219 mm)
(Actual size is 47-3/4")

Square Edge

ASTM C1396

Gold Bond® Gridstone® CleanRoom Ceiling Panels – See page 164.

Gold Bond® Gridstone® CleanRoom Ceiling Panels are prefinished ceiling panels with a non-combustible gypsum core. The 2-mil. white, stipple-textured vinyl laminate combines high light reflectance with easy cleanability. These panels are for use in systems designed for areas requiring high levels of air cleanliness or low airborne particulate levels such as clean rooms and clean zones.

Thickness: 1/2" (12.7 mm) / Type X

Width: 2' (610 mm)
(Actual size is 23-3/4")

Length: GB-5040: 2' (610 mm)
(Actual size is 23-3/4")
GB-5030: 4' (1,219 mm)
(Actual size is 47-3/4")

Square Edge

ASTM C1396

Gold Bond® Gridstone® Hi-Strength Ceiling Panels – See page 167.

Gold Bond® Gridstone® Hi-Strength Ceiling Panels consist of a non-combustible high strength gypsum core formulated with increased uniformity and integrity which increases its sag resistance. These panels can be used for interior and exterior ceiling applications in protected, well-ventilated spaces.

Thickness: 5/16" (7.9 mm) / Type X

Width: 2' (610 mm)
(Actual size is 23-3/4")

Length: GB-5020: 2' (610 mm)
(Actual size is 23-3/4")
GB-5010: 4' (1,219 mm)
(Actual size is 47-3/4")

Square Edge

ASTM C1396

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gold Bond® Plaster Systems

Gold Bond® Two-Way Hardwall Plaster – See page 172.

Gold Bond® Two-Way Hardwall Plaster is a neat basecoat gypsum plaster which requires the jobsite addition of an aggregate and water to produce working qualities. When properly proportioned with aggregate, it forms a hard, durable base for the finish coats of another gypsum plaster. It is designed for interior use over all accepted plaster bases as described in ASTM C842.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Over Gypsum Plaster Base – 7/16" thickness: Approx. 40-50 sq ft (3.7-4.6 m^2) per bag

Over Metal Lath – 7/16" thickness: Approx. 20-26 sq ft (1.9-2.4 m^2) per bag

Over Brick, Clay Tile, Concrete Block – 9/16" thickness: Approx. 40-50 sq ft (3.7-4.6 m^2) per bag

Gold Bond® Gypsolite® Plaster – See page 172.

Gold Bond® Gypsolite® Plaster is a lightweight gypsum basecoat plaster mixed at the plant with correctly sized and proportioned perlite aggregate, requiring only the addition of water on the job. Gypsolite Plaster is designed for interior use in trowel application over gypsum or metal lath as described in ASTM C842.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Over Gypsum Plaster Base – 7/16" thickness: Approx. 32-35 sq ft (3.0-3.5 m^2) per bag

Over Metal Lath – 9/16" thickness: Approx. 16-19 sq ft (1.5-1.8 m^2) per bag

Gold Bond® Super-White Gauging Plasters – See page 173.

Gold Bond® Super-White Gauging Plaster Slow Set and Gold Bond® Super-White Gauging Plaster Quick Set are designed for interior smooth trowel application over a gypsum plaster basecoat. It is specially ground, calcined gypsum, which readily mixes with water and lime putty. It is designed primarily for interior smooth trowel application over a gypsum plaster basecoat.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 225-315 sq ft (21-29 m^2) per bag

Gold Bond® Super-White Moulding Plaster – See page 173.

Gold Bond® Super-White Moulding Plaster is a very white, finely ground gypsum, primarily used for all kinds of ornamental plaster work. Because of its low expansion, excellent strength and hardness, it is especially adaptable for casting in rubber, gelatin and other types of moulds.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Gold Bond® Kal-Kote® Basecoat Plaster – See page 177.

Gold Bond® Kal-Kote® Basecoat Plaster is a specially-designed high-strength basecoat plaster for application 1/16" minimum thickness over Kal-Kore® Plaster Base, masonry or monolithic concrete that has been treated with a bonding agent. The strength of Kal-Kote Basecoat Plaster is substantially greater than that exhibited by typical sanded basecoat plaster.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 93-106 sq ft (8.6-9.8 m^2) per bag

Gold Bond® Kal-Kote® Smooth Finish Plaster – See page 177.

Gold Bond® Kal-Kote® Smooth Finish Plaster is designed to provide a white smooth trowel finish using conventional plastering techniques. Kal-Kote Smooth is a veneer finish coat that bonds directly to Kal-Kote Basecoat Plaster.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 145-160 sq ft (13-15 m^2) per bag

Gold Bond® Kal-Kote® Texture Finish Plaster – See page 178.

Gold Bond® Kal-Kote® Texture Finish Plaster is designed to provide a variety of decorative surfaces using common plastering techniques. It can be applied as a 1/16" finish coat over Kal-Kote Basecoat Plaster or used as a finish coat over conventional basecoat plaster.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 145-160 sq ft (13-15 m^2) per bag

Gold Bond® Uni-Kal® Veneer Plaster – See page 178.

Gold Bond® Uni-Kal® Veneer Plaster is a mill-mixed veneer finish plaster for smooth and textured troweled applications. A finish coat of Uni-Kal Veneer Plaster may be used for interior smooth and textured trowel application over a gypsum plaster basecoat or as a one-coat application over a gypsum plaster base.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 135-150 sq ft (12-14 m^2) per bag

Gold Bond® X-KALibur® Extended Set Veneer Plaster – See page 179.

Gold Bond® X-KALibur® Extended Set Veneer Plaster is a mill-mixed veneer finish plaster for smooth troweled applications where an extended setting time is desirable. A finish coat of X-KALibur may be used for interior smooth and textured trowel application over a gypsum plaster basecoat or as a one-coat application over a gypsum plaster base.

Packaging:
Bag: 49.5 lbs (22.5 kg)

Coverage:
Approx. 135-150 sq ft (12-14 m^2) per bag

Notes

XP Products Offer Solutions for Every Application

Whether you are designing a project or installing product in the field, PURPLE products from Gold Bond Building Products, LLC offer single-source solutions that provide the performance, support, and resources to get the job done right.

Our portfolio of PURPLE XP® paper-faced products deliver the confidence and peace of mind you need to stand behind your work. They are mold- and moisture-resistant, UL GREENGUARD certified for indoor air quality and manufactured in our signature PURPLE color. So, be sure to ask for PURPLE and know you're building with the best.

MOLD & MOISTURE RESISTANT

Set the standard for mold-resistance and performance in high-moisture environments while working with lightweight, cost-efficient gypsum board.

All XP products feature SPORGARD® technology with extra mold-inhibiting properties.

ABUSE & IMPACT RESISTANT

Utilize XP products that offer superior impact resistance and surface durability along with other features like 100% recycled paper.

ACOUSTICAL

Reduce unwanted noise with the family of SoundBreak® XP® products. SoundBreak products deliver industry-leading noise reduction with innovative solutions for walls and ceilings.

GRIDMARX®

Our patented GridMarX® installation guide marks have proven to reduce material costs and increase efficiency on the jobsite. GridMarX guide marks are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

LOW-EMITTING MATERIALS

XP products have achieved UL GREENGUARD and UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

Qualifies as a low-emitting material per California Specification Section 01350 in accordance with CDPH Standard Method, v1.2. For more information, visit: **calrecycle.ca.gov**.

PURPLE
EVOLVE YOUR WALLS™

XP® Gypsum Board

Extra Protection Against Mold and Mildew

1. Mold- and Moisture-Resistant Face Paper
2. Enhanced Mold- and Moisture-Resistant Core
3. Heavy Mold- and Moisture-Resistant Back Paper

Gold Bond XP® Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth. Long edges of the panels are tapered.

With PURPLE paper on the face side and heavy, mold- and moisture-resistant, 100% recycled gray paper on the back side, you can count on XP Gypsum Board to help protect your projects from mold.

It is available as Regular XP Gypsum Board, Gold Bond® XP® Fire-Shield® Gypsum Board, or Gold Bond® XP® Fire-Shield C™ Gypsum Board.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® XP® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick Regular and Type C Boards and 5/8" (15.9 mm) thick Type X or Type C Boards are available in 4' (1,219 mm) widths and 8' (2,438 mm) to 12' (3,658 mm) lengths. 5/8" (15.9 mm) thick XP Fire-Shield is also available in 54" (1,375 mm) width.

FINISHING

Tapered or square edge.

BASIC USES

Applications

- Use it on both wood- and steel-framed construction for interior wall and ceiling applications.
- Use it as a tile backer board in dry areas or areas with limited moisture, such as toilet or sink areas, and wall and ceiling areas above tile in tubs and showers.
- Approved for use in protected exterior soffit applications. Reference GA-216, *Application and Finishing of Gypsum Panel Products* for installation recommendations.
- 1/2" (12.7 mm) XP® Fire-Shield® Type C, 5/8" (15.9 mm) XP® Fire-Shield® Type X, and 5/8" (15.9 mm) XP® Fire-Shield® Type C have specially formulated cores designed for use in specific fire-rated assemblies.

Advantages

- Suitable for all interior applications, including walls and ceilings. Also use it as a tile backer board in dry areas and in areas with limited moisture.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- 5/8" Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12, the 12" o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit **MaX12.com** for more information.
- Features GridMarX® guide marks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will align within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	1/2" XP	1/2" XP Fire-Shield C	5/8" XP Fire-Shield	5/8" XP Fire-Shield C
Thickness[1], Nominal	1/2" (12.7 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm) 54" (1,372 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	1.5 – 1.6 lbs/sq ft (7.32 – 7.81 k/m^2)	1.9 lbs/sq ft (9.28 k/m^2)	2.2 lbs/sq ft (10.74 k/m^2)	2.3 lbs/sq ft (11.23 k/m^2)
Edges[1]	Tapered or Square	Tapered or Square	Tapered or Square	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (343 N)	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	10' (3.048 mm)	10' (3.048 mm)	15' (4,572 mm)	15' (4,572 mm)
Thermal Resistance[5]	R = .45	R = .45	R = .56	R = .56
Permeance[6]	37 perms	37 perms	37 perms	37 perms
Water Absorption[1] (% of Weight)	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Mold Resistance[7], ASTM D3273	Score of 10	Score of 10	Score of 10	Score of 10
Mold Resistance[8], ASTM G21	Score of 0	Score of 0	Score of 0	Score of 0
Product Standard Compliance	ASTM C1396	ASTM C1396	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics				
Core Type	Regular	Type C	Type X	Type C
UL Type Designation	N/A	FSW-C	FSW	FSW-C
Combustibility[2]	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A	Class A	Class A
Flame Spread[3]	15	15	15	15
Smoke Development[3]	0	0	0	0
Applicable Standards and References				
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*				
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*				
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*				
ASTM C1396 *Standard Specification for Gypsum Board*				
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*				
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*				
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*				
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*				
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*				
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*				
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*				
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*				
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*				
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*				

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.

- Double nailing is an alternate method of attachment devised to minimize nail pops. This system requires doubling up on the field nails. The total quantity of nails used does not double, however, since maximum nail spacing is increased to 12" (305 mm) o.c. and conventional nailing is used on the perimeter. Application is accomplished by first single nailing the field of the board, starting at the center and working toward ends and edges. Another nail is then driven in close proximity (2" [50.8 mm] to 2-1/2" [63.6 mm]) to each of the first nails. The first series of nails are then struck again to ensure the board is drawn tightly to the framing member.
- When using adhesive to attach gypsum board, apply drywall adhesive to the face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

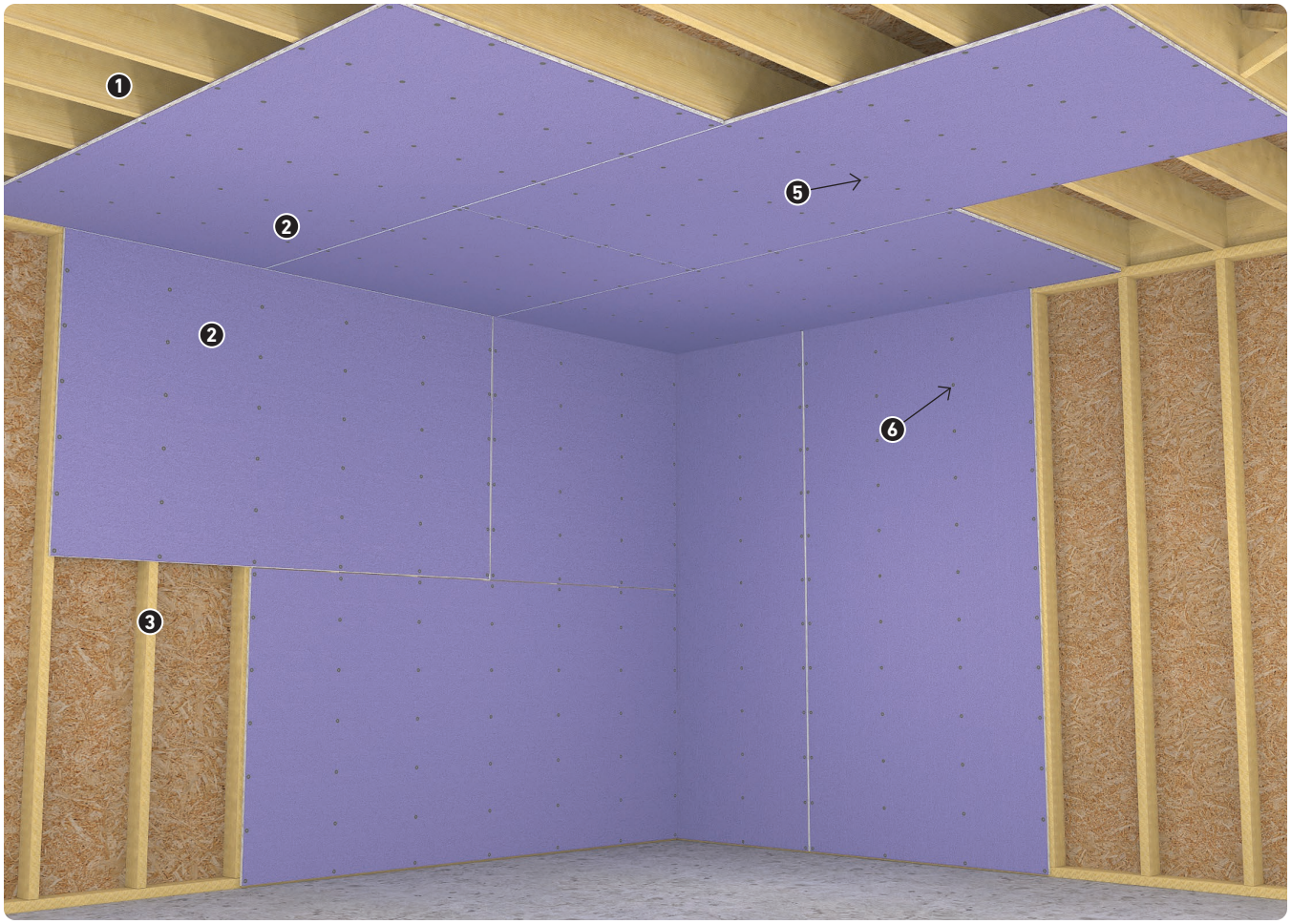
Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

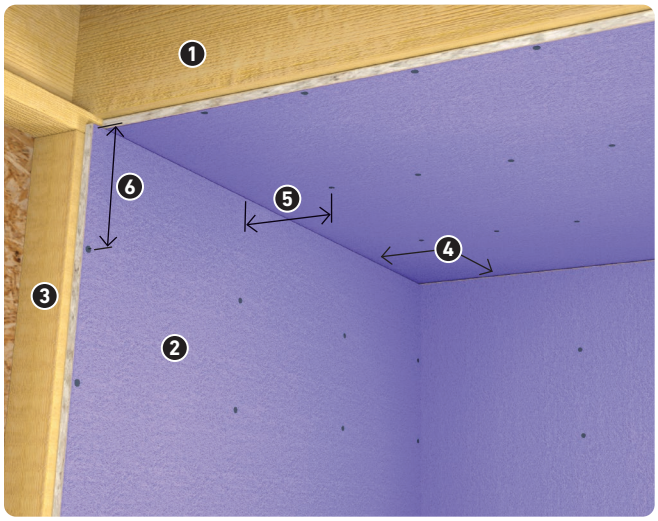
LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Apply 1/2" (12.7 mm) gypsum board ceilings to be decorated with water-based spray texture perpendicular to the framing spaced a maximum of 16" (406 mm) o.c.
- Space supporting framing for single-layer application of 1/2" (12.7 mm) gypsum board a maximum of 24" (610 mm) o.c.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install or treat joints until building is properly enclosed.

Standard Application with Nails – Single Layer



Floating Ceiling Corner – Nail Installation



SYSTEM COMPONENTS

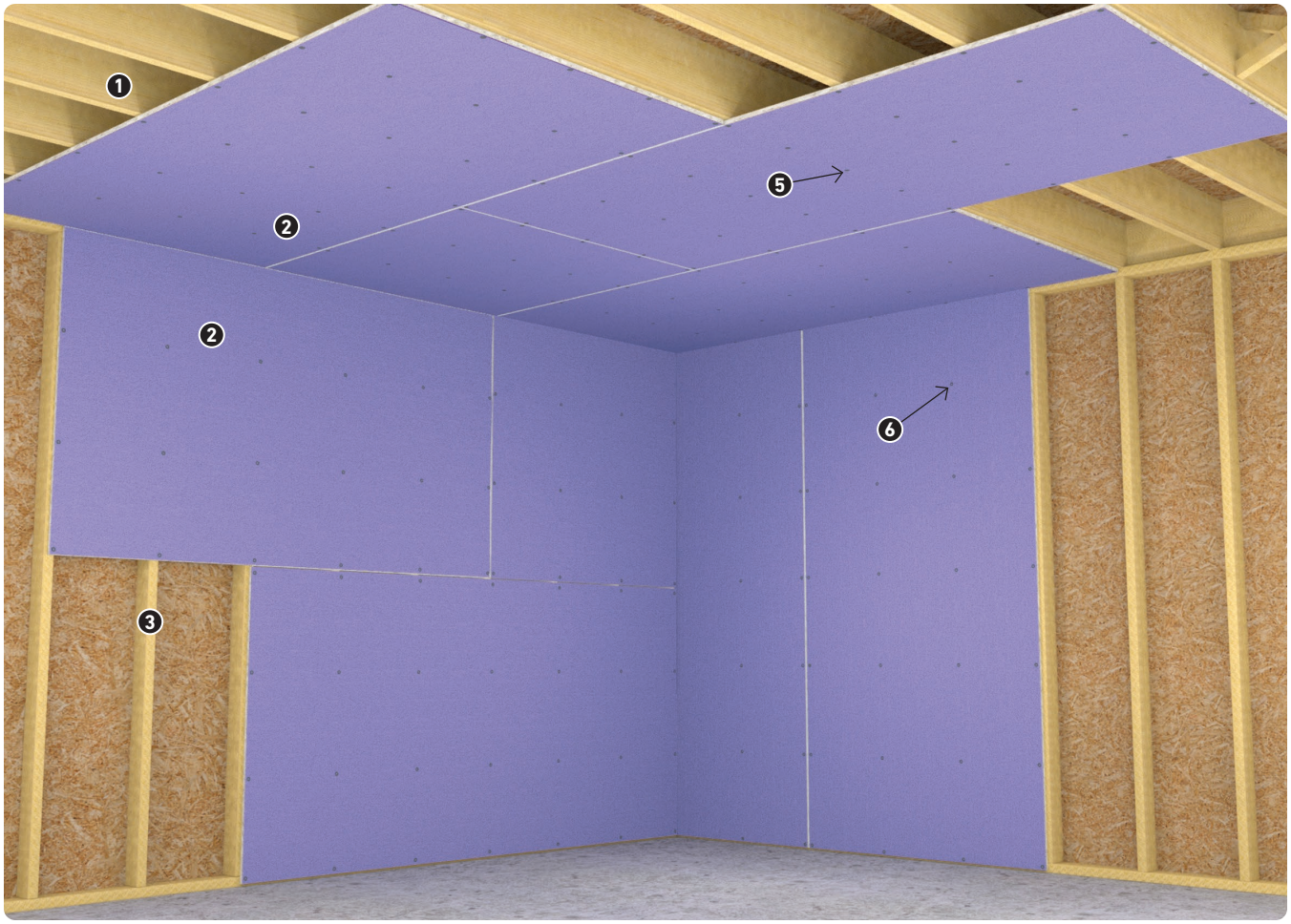
1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 7" o.c.
6. Wall: 8" o.c.

INSTALLATION NOTES

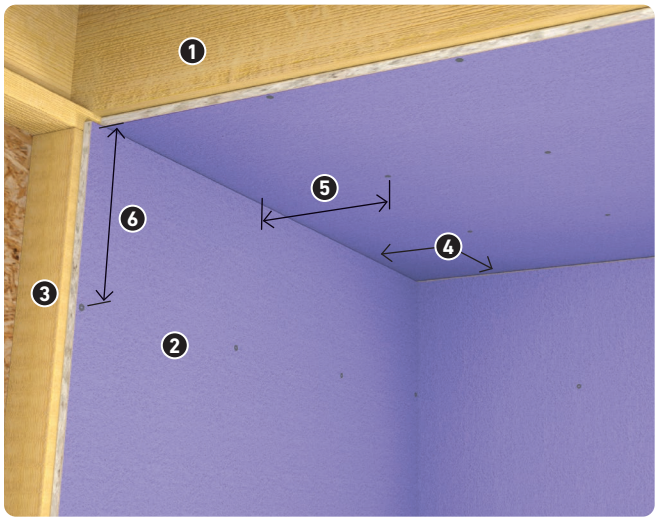
1/2" (12.7 mm) and 5/8" (15.9 mm) XP Gypsum Board

- 24" o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)
- 16" o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)
- Minimum gypsum board nail length 1-3/8"

Standard Application with Screws – Single Layer



Floating Ceiling Corner – Screw Installation



SYSTEM COMPONENTS

1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 12" o.c.
6. Wall: 16" o.c.
   Floating Ceiling: 12" o.c.

INSTALLATION NOTES

1/2" (12.7 mm) and 5/8" (15.9 mm) XP Gypsum Board

- 24" o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)
  - Screw spacing not to exceed 12" o.c.
- 16" o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)
- Minimum gypsum board screw length 1-1/8"

XP® Hi-Abuse® Gypsum Board

Protects Against Abuse and Abrasion

1. Abrasion-, Mold- and Moisture-Resistant Face Paper
2. Enhanced Mold- and Moisture-Resistant Type X Core
3. Heavy Mold- and Moisture-Resistant Back Paper

Gold Bond® XP® Hi-Abuse® Gypsum Board has a mold- and moisture-resistant Type X gypsum core encased in abrasion-, mold- and moisture-resistant, 100% recycled PURPLE paper on the face side and mold- and moisture-resistant, 100% recycled gray paper on the back side.

This abuse-resistant gypsum board is ideal to use in wall assemblies where surface abrasion is a concern, such as corridors, entryways, lobby areas and warehouses.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® XP® Hi-Abuse® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered edge.

XP® HI-ABUSE®

BASIC USES

Applications

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation, mold, mildew and moisture resistance are major concerns.
- Use 5/8" (15.9 mm) Hi-Abuse XP Gypsum Board where Type X gypsum board is specified in certain fire-rated wall assemblies.
- Use as a tile backer board in dry areas or areas with limited water exposure, such as toilet and sink areas and wall and ceiling areas above tile in tubs and showers.

Advantages

- Provides greater resistance to surface abuse and indentation over standard gypsum board.
- Provides more protection against surface abrasion – stands up to scrapes, scratches and scuffs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- 5/8" Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12, the 12" o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit **MaX12.com** for more information.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points, in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. GridMarX also provides quick identification and uniform nail/screw patterns. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4" (6.4 mm) clearance between boards an adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these points. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	XP Hi-Abuse
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.8 lbs/sq ft (13.67 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	15' (4,572 mm)
Thermal Resistance[5]	R = .56
Permeance[6]	37 perms
Water Absorption[1] (% of Weight)	≤ 5%
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM G21	Score of 0
Surface Abrasion[9]	Level 3
Indentation[9]	Level 1
Soft-Body Impact[9]	Level 2
Hard-Body Impact[9]	Level 1
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and FIber-Reinforced Cement Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

- Double nailing is an alternate method of attachment devised to minimize nailpops. This system requires doubling up on the field nails. The total quantity of nails used does not double, however, since maximum nail spacing is increased to 12" (305 mm) o.c. and conventional nailing is used on the perimeter. Application is accomplished by first single nailing the field of the board, starting at the center and working toward ends and edges. Another nail is then driven in close proximity (2" [50.8 mm] to 2-1/2" [63.5 mm]) to each of the first nails. The first series of nails are then struck again to ensure the board is drawn tightly to the framing member.
- When using adhesive to attach gypsum board, apply drywall adhesive to face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

Mold and Mildew Resistance

XP Hi-Abuse Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent laboratory, XP Hi-Abuse Gypsum Board received the highest possible ratings on ASTM G21 and ASTM D3273.

No material can be considered "mold proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, XP Hi-Abuse Gypsum Board can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

Fire Resistance Ratings

Fire resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the test. Further, precautions should be taken that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Ceiling areas abutting skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the ceiling board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- To maximize impact resistance and eliminate potential screw spinout, a minimum 20-gauge (.0312" design thickness) steel stud is required, as outlined in GA-216.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Do not use boards as a nailing base.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install or treat joints until the building is properly enclosed.

XP® Hi-Impact® Gypsum Board

Resists Impact

1. Heavy Abrasion-, Mold- and Moisture-Resistant Face Paper
2. Enhanced Mold- and Moisture-Resistant Type X Core
3. Fiberglass Mesh Reinforcement
4. Heavy Mold- and Moisture-Resistant Back Paper

Gold Bond® XP® Hi-Impact® Gypsum Board offers the same mold-, moisture- and abuse-resistant features as XP® Hi-Abuse® Gypsum Board, and in addition, it has fiberglass mesh embedded into the core, providing even more impact/penetration resistance. It also has a specially formulated core to provide fire-resistance ratings. And you can use XP® Hi-Impact® Gypsum Board as a tile backer board in dry areas or areas with limited water exposure, such as toilet/sink areas and areas above tile in tubs and showers.

This impact-resistant gypsum board is designed for use in areas prone to cavity penetration, such as gymnasiums, correctional facilities, schools and hospitals.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® XP® Hi-Impact® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered edge.

XP® HI-IMPACT®

BASIC USES

Applications

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation, mold, mildew and moisture resistance are major concerns.
- Use 5/8" (15.9 mm) XP Hi-Impact Gypsum Board where Type X Gypsum Board is specified in certain fire-rated wall assemblies.
- Use as a tile backer board in dry areas or areas with limited water exposure, such as toilet and sink areas and wall and ceiling areas above tile in tubs and showers.

Advantages

- Specially designed gypsum core with a built-in fiberglass mesh offers superior protection against impact and penetrations into the wall cavity.
- Provides greater resistance to surface abrasion, indentation, impact and penetration over standard gypsum board.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- 5/8" Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12, the 12" o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit **MaX12.com** for more information.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points, in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. GridMarX also provides quick identification and uniform nail/screw patterns. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these points. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	XP Hi-Impact
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.8 lbs/sq ft (13.67 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	15' (4,572 mm)
Thermal Resistance[5]	R = .56
Permeance[6]	37 perms
Water Absorption[1] (% of Weight)	≤ 5%
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM G21	Score of 0
Surface Abrasion[9]	Level 3
Indentation[9]	Level 1
Soft-Body Impact[9]	Level 3
Hard-Body Impact[9]	Level 3
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

- Double nailing is an alternate method of attachment devised to minimize nailpops. This system requires doubling up on the field nails. The total quantity of nails used does not double, however, since maximum nail spacing is increased to 12" (305 mm) o.c. and conventional nailing is used on the perimeter. Application is accomplished by first single nailing the field of the board, starting at the center and working toward ends and edges. Another nail is then driven in close proximity (2" [50.8 mm] to 2-1/2" [63.5 mm]) to each of the first nails. The first series of nails are then struck again to ensure the board is drawn tightly to the framing member.
- When using adhesive to attach gypsum board, apply drywall adhesive to face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

Mold and Mildew Resistance

XP Hi-Impact Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent laboratory, XP Hi-Impact Gypsum Board received the highest possible ratings on ASTM G21 and ASTM D3273.

No material can be considered "mold proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, XP Hi-Impact Gypsum Board can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

Fire Resistance Ratings

Fire resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the test. Further, precautions should be taken that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Ceiling areas abutting skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the ceiling board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312" design thickness) steel stud is required, as outlined in GA-216.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies. Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Do not use boards as a nailing base.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install or treat joints until the building is properly enclosed.

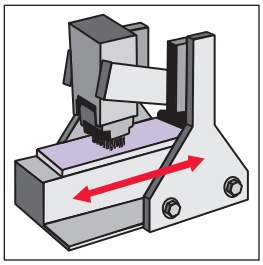
How Much Abuse and Impact Can XP Gypsum Board Take?

Do you need a gypsum board that can protect those high-traffic areas where interior damage is likely to occur? XP® Hi-Abuse® Gypsum Board, XP® Hi-Impact® Gypsum Board and SoundBreak XP Wall® Board are excellent choices and are tested in accordance with ASTM C1629, but there are differences between them.

ABUSE AND IMPACT RESULTS

Product	ASTM D4977 Surface Abrasion Classification Level	ASTM D5420 Surface Indentation Classification Level	ASTM E695 Soft-Body Impact Classification Level	Annex A1 Hard-Body Impact Classification Level
XP® Hi-Abuse® Gypsum Board	3	1	2	1
XP® Hi-Impact® Gypsum Board	3	1	3	3
SoundBreak XP Wall® Board	3	1	2	1

SURFACE ABRASION



Modified ASTM D4977

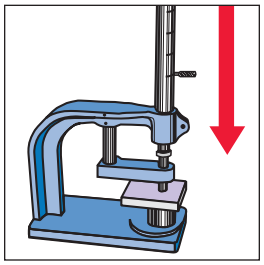
This test measures the ability of a gypsum panel surface to resist scratches and scuffs by subjecting the panel to 50 back and forth cycles with a wire brush. The depth of the abrasion is measured. The test was originally developed to test granule adhesion to mineral surfaced roofing and was modified by adding 25 pounds of additional weight to the wire brush.

Surface Abrasion Resistance

Performance Requirements: ASTM D977

Classification Level	Abraded Depth Maximum
1	0.126" (3.2 mm)
2	0.059" (1.5 mm)
3	0.010" (0.3 mm)

SURFACE INDENTATION



ASTM D5420 - Gardner Impact Test

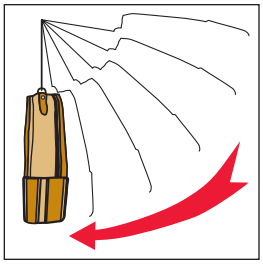
This test measures the ability of a gypsum panel to resist dents by a small hard object, by raising and dropping a hemispherical rod onto the gypsum panel. The depth of the indentation is measured. The original test was developed to test flat, rigid sheets of plastic.

Indentation Resistance

Performance Requirements: ASTM D5420

Classification Level	Indentation Maximum
1	0.150" (3.8 mm)
2	0.100" (2.5 mm)
3	0.050" (1.3 mm)

SINGLE DROP SOFT-BODY IMPACT



Modified ASTM E695

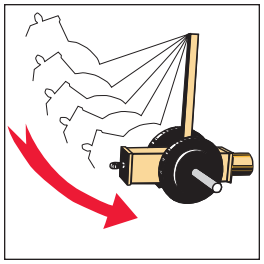
This test measures the ability of a gypsum panel to withstand a single impact of a heavy soft object. This test is conducted by swinging a leather bag loaded with steel pellets into the panel. When the panel breaks, the height of the drop and weight of the bag are used to calculate the foot-pound measurement required to break the panel. The test was originally developed to measure relative resistance of wall, floor, and roof construction to impact loading.

Soft-Body Impact Test

Performance Requirements: ASTM E695

Classification Level	Soft-Body Minimum
1	90 ft-lbs (112 J)
2	195 ft-lbs (265 J)
3	300 ft-lbs (408 J)

HARD-BODY IMPACT



Annex A1

This test measures the ability of a gypsum panel to withstand the impact of a hard object such as a hammer or heel of a boot. A panel is impacted with 2-3/4" steel cylinder mounted to a ram. Weights are added to the ram and the panel is impacted one time. The maximum amount of impact force the panel can withstand without breaching the stud cavity is reported. This is a new test proposed by manufacturers of high performance panels.

Hard-Body Impact Test

Performance Requirements: Annex A1

Classification Level	Hard-Body Minimum
1	50 ft-lbs (68 J)
2	100 ft-lbs (136 J)
3	150 ft-lbs (204 J)

Tests witnessed by H.P. White Laboratory, Inc.

SoundBreak XP Wall® Board

Sound Control and Damping for Walls

1. Heavy Mold-, Mildew- and Moisture-Resistant Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Type X Core
3. Viscoelastic Polymer

Gold Bond® SoundBreak® XP Wall® Board consists of two pieces of high-density, mold-, mildew- and moisture-resistant gypsum board, with a specially designed PURPLE paper, laminated together with a sound-damping, viscoelastic polymer. This acoustically enhanced, fire-resistant gypsum core is encased in heavy, 100% recycled paper on the face and back sides and offers superior abrasion, mold, mildew and moisture resistance.

Use it for high-rated Sound Transmission Class (STC) wall and ceiling assemblies, where sound transmission between rooms or dwelling units is a concern.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® SoundBreak XP Wall® Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) and 5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) width and 8' (2,438 mm) to 12' (3,658 mm) lengths.

FINISHING

Slightly tapered edge.

SoundBreak XP WALL BOARD

BASIC USES

Applications

- Use it for interior wall assemblies, where sound transmission between rooms or dwelling units is a concern.
- 5/8" (15.9 mm) SoundBreak XP Wall Board may be used where Type X gypsum board is specified in fire-rated assemblies.

Advantages

- Provides high-rated Sound Transmission Class (STC) values per an independent third-party acoustical laboratory using ASTM E90 test procedures.
- Achieves high STC values in a thinner wall assembly, increasing usable floor space.
- Provides STC Ratings up to 56 for single-layer, steel stud partitions and up to 67 for area separation walls.
- Superior sound damping, cost-efficient material that finishes easily and decorates in the same manner as standard gypsum board.
- For speed of installation and lower installation costs, vertical board joints do not require acoustical sealant.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Heavy, abrasion-resistant paper and a dense core provides greater resistance to surface abuse and indentation when tested in accordance with ASTM C1629.
- Installs like traditional gypsum board without requiring additional clips or channels.
- Cuts by scoring deeply from both sides before snapping or by using a hand or power saw.
- Fire-resistant material will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will align within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	1/2" SoundBreak XP	5/8" SoundBreak XP
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.3 lbs/sq ft (11.23 k/m^2)	2.7 lbs/sq ft (13.18 k/m^2)
Edges[1]	Slightly Tapered	Slightly Tapered
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	10' (3,048 mm)	15' (4,572 mm)
Thermal Resistance[5]	R = .45	R = .56
Permeance[6]	45 perms	37 perms
Mold Resistance[7], ASTM D3273	Score of 10	Score of 10
Mold Resistance[8], ASTM G21	Score of 0	Score of 0
Surface Abrasion[9]	Level 3	Level 3
Indentation[9]	Level 1	Level 1
Soft-Body Impact[9]	Level 1	Level 2
Hard-Body Impact[9]	N/A	Level 1
Product Standard Compliance	ASTM C1396, C1766	ASTM C1396, C1766
Fire-Resistance Characteristics		
Core Type	Regular	Type X
UL Type Designation	N/A	SBWB
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	15	15
Smoke Development[3]	0	0
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1396 *Standard Specification for Gypsum Board*		
ASTM C1629 *Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*		
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*		
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*		
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*		
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*		
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*		
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*		
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*		
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

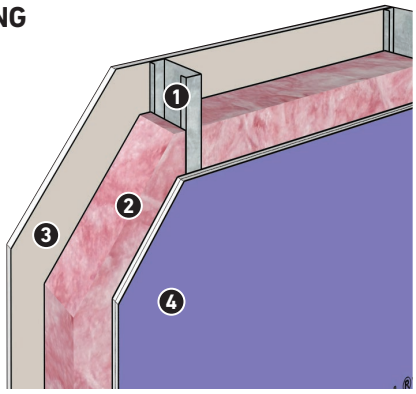
1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

SoundBreak® XP® Acoustical Drawings – Steel Studs

1-HOUR FIRE RATING

UL Design: V438, U465
STC-55
OL14-0404

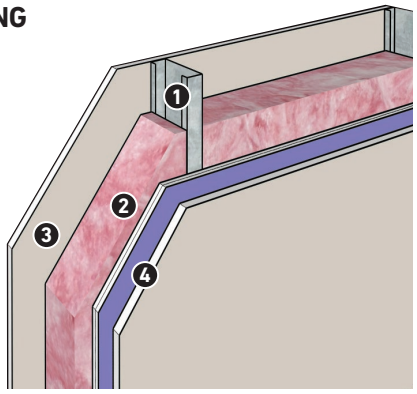
1. 3-5/8" steel studs, 20 gauge, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 5/8" Fire-Shield Gypsum Board
4. 5/8" SoundBreak XP Wall Board



1-HOUR FIRE RATING

UL Design: V438, U465
STC-57
RAL-TL06-334

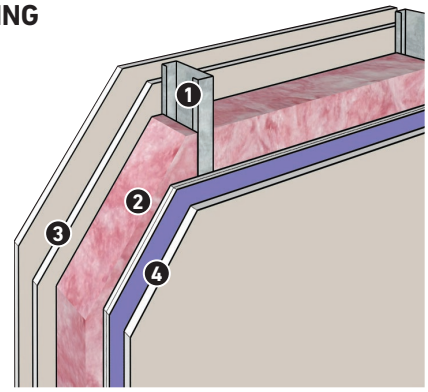
1. 3-5/8" steel studs, 25 gauge, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 5/8" Fire-Shield Gypsum Board
4. 5/8" Fire-Shield Gypsum Board on 1/2" SoundBreak XP Wall Board



2-HOUR FIRE RATING

UL Design: V438, U411
STC-60
RAL-TL07-168

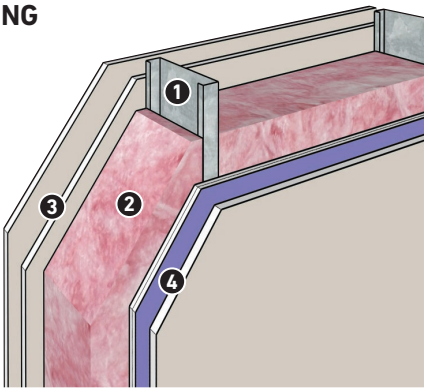
1. 3-5/8" steel studs, 25 gauge, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 2 layers 5/8" Fire-Shield Gypsum Board
4. 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board



2-HOUR FIRE RATING

UL Design: V438, U411
STC-61
NRCC B-3456.2

1. 6" steel studs, 25 gauge, 24" o.c.
2. 6" glass fiber insulation
3. 2 layers 5/8" Fire-Shield Gypsum Board
4. 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board



Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

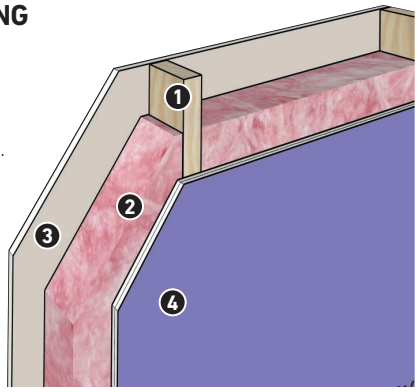
Ceiling areas abutting skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the ceiling board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.

SoundBreak® XP® Acoustical Drawings – Wood Studs

1-HOUR FIRE RATING

UL Design: U309
STC-50
NGC 2009015

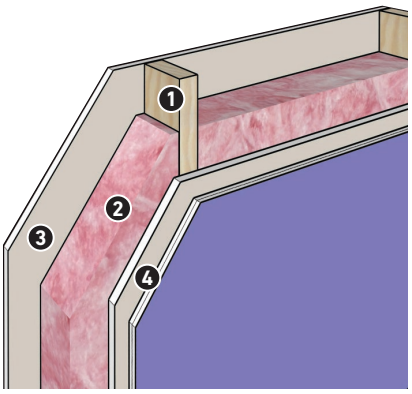
1. 2x4 wood studs, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 5/8" Fire-Shield Gypsum Board
4. 5/8" SoundBreak XP Wall Board



NOT RATED

STC-51
NGC 2009028

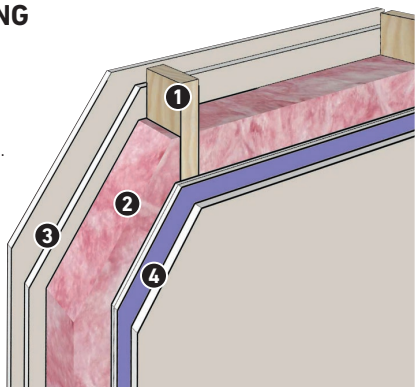
1. 2x4 wood studs, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 1/2" gypsum board
4. 1/2" SoundBreak XP Wall Board on 1/2" gypsum board



2-HOUR FIRE RATING

GA File: WP 4135
STC-54
NGC 2009016

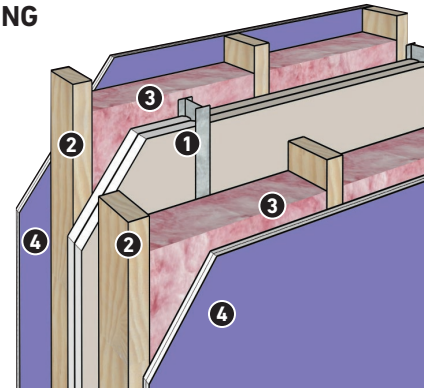
1. 2x4 wood studs, 24" o.c.
2. 3-1/2" glass fiber insulation
3. 2 layers 5/8" Fire-Shield Gypsum Board
4. 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board



2-HOUR FIRE RATING

UL Design: U347
STC-67
NRCC B-3451.1

1. Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs, 3/4" air space
2. 2x4 wood studs, 16" o.c. each side
3. 3-1/2" glass fiber insulation each side
4. 5/8" SoundBreak XP Wall Board



LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Apply 1/2" (12.7 mm) gypsum board ceilings to be decorated with water-based spray texture perpendicular to the framing spaced a maximum of 16" (406 mm) o.c.
- Space supporting framing for single-layer application of 1/2" (12.7 mm) gypsum board a maximum of 24" (610 mm) o.c.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not treat joints until building is properly enclosed.

SoundBreak XP Ceiling® Board

Sound Damping for Ceilings

1. Heavy Mold-, Mildew- and Moisture-Resistant Paper
2. Enhanced High-Density, Mold-Resistant Type X Core
3. Viscoelastic Polymer

Gold Bond® SoundBreak XP Ceiling® Board consists of two pieces of high-density, mold-, mildew- and moisture-resistant gypsum board, with a specially designed PURPLE paper, laminated together with a sound-damping, viscoelastic polymer. The acoustically enhanced, fire-resistant gypsum core is encased in heavy, 100% recycled paper on both sides that offers superior abrasion, mold, mildew and moisture resistance.

SoundBreak XP Ceiling Board provides higher Sound Transmission Class (STC) and Impact Insulation Class (IIC) values than standard gypsum board when applied to the underside of floor-ceiling assemblies where airborne sound transmission and structurally transmitted sound are a concern.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® SoundBreak XP Ceiling® Board has achieved UL GREENGUARD Gold Certification.

SIZES

3/4" (19.1 mm) thick boards are available in 4' (1,219 mm) width and 8' (2,438 mm) to 10' (3,048 mm) lengths.

FINISHING

Slightly tapered edge.

SoundBreak XP CEILING BOARD

BASIC USES

Applications

Apply it to floor-ceiling assemblies where airborne sound transmission and structurally transmitted sound are a concern and high Sound Transmission Class (STC) and Impact Insulation Class (IIC) values are desired.

Use 3/4" (19.1 mm) SoundBreak XP Ceiling Board to provide a 1-hour fire-rating in specific UL floor-ceiling designs.

Advantages

- Provides high Sound Transmission Class (STC) and Impact Insulation Class (IIC) values per an independent third-party acoustical laboratory using ASTM E90 test procedures.
- In specific floor-ceiling assemblies, provides both STC and IIC ratings above 60.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Heavy, abrasion-resistant paper and dense core provide greater resistance to surface abuse and indentation when tested in accordance with ASTM C1629.
- Installs like traditional gypsum board.
- Fire-resistant material will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install SoundBreak XP Ceiling Board with methods described in ASTM C840, GA-216 and tested fire- and sound-rated assemblies.
- Examine and inspect framing materials to which ceiling board is to be applied. Remedy all defects prior to installation of the ceiling board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply ceiling board first to ceilings at right angles to framing members. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the board when installing a vapor retarder behind the ceiling board. Install the insulation immediately after the ceiling board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- The use of a hand or electric saw is recommended for cutting 3/4" SoundBreak XP Ceiling Board.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Hold ceiling board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the ceiling board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of ceiling board.
- Maintain a room temperature of not less than 50˚F (10˚C) during application of joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	SoundBreak XP Ceiling Board
Thickness[1], Nominal	3/4" (19.1 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 10' (2,438 – 3,048 mm)
Weight, Nominal	2.9 lbs/sq ft (14.16 k/m^2)
Edges[1]	Slightly Tapered
Flexural Strength[1], Perpendicular	≥ 167 lbf. (743 N)
Flexural Strength[1], Parallel	≥ 56 lbf. (249 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	N/A
Thermal Resistance[5]	R = .64
Permeance[6]	N/A
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM G21	Score of 0
Surface Abrasion[9]	Level 3
Indentation[9]	Level 1
Soft-Body Impact[9]	N/A
Hard-Body Impact[9]	N/A
Product Standard Compliance	ASTM C1396, C1766
Fire-Resistance Characteristics	
Core Type	Type C
UL Type Designation	SBCB
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E90 *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Guidelines for Optimum Performance and Sound Reduction

- Stagger gypsum board joints from one side of the partition to the other.
- Allow a 1/4" gap along all wall perimeter edges and completely seal 1/4" gap with acoustical sealant.
- Refrain from wall penetrations when possible.
- Limit necessary wall penetrations to one per stud cavity.
- Seal all penetrations with acoustical sealant or putty pads.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Ceiling areas abutting skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the ceiling board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose ceiling board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above ceilings.
- Avoid installing ceiling board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of ceilings without perimeter relief.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install or treat joints until the building is properly enclosed.

SoundBreak XP Retrofit® Board

Noise Reduction Without the Demolition

1. Heavy Mold- and Moisture-Resistant Paper
2. Slightly Tapered Edge
3. Enhanced High-Density, Mold-Resistant Core
4. Viscoelastic Polymer

Gold Bond® SoundBreak XP Retrofit® Board consists of a high-density, mold- and moisture-resistant gypsum board with specially designed PURPLE paper on the front and a sound-damping, viscoelastic polymer adhered to the back paper. This acoustically enhanced, fire-resistant gypsum core is encased in heavy, 100% recycled paper on both sides that offers superior abrasion, mold and moisture resistance.

Use SoundBreak XP Retrofit on one side of a gypsum board wall to improve the acoustical performance by creating a constrained damping layer when installed over the existing surface.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® SoundBreak XP Retrofit® Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/16" (7.9 mm) thick boards are available in 4' (1,219 mm) width and 10' (3,048 mm) length.

FINISHING

Slightly tapered edge.

SoundBreak XP RETROFIT BOARD

BASIC USES

Applications

Use SoundBreak XP Retrofit to improve the acoustical performance of an existing wall assembly, and to achieve a higher Sound Transmission Class (STC) rating for existing interior gypsum board walls where sound transmission has become a concern.

Install 5/16" (7.9 mm) thick SoundBreak XP Retrofit over existing interior gypsum board walls in residential, multifamily and commercial applications for additional sound damping between rooms or dwelling units.

Advantages

- When installing over an existing interior wall assembly, SoundBreak XP Retrofit enhances Sound Transmission Class (STC) values per an independent third-party acoustical laboratory using ASTM E90 test procedures.
- Achieves increased STC values in a thinner wall assembly, increasing usable floor space.
- Superior sound damping, cost-efficient material that finishes easily and decorates in the same manner as standard gypsum board.
- For speed of installation and lower installation costs, vertical board joints do not require acoustical sealant.
- Heavy, abrasion-resistant paper and dense core provide greater resistance to surface abuse when tested in accordance with ASTM C1629.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Fire-resistant material with a gypsum core will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features GridMarX® guide marks on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

SoundBreak XP Retrofit Board

- Remove all wall moldings, outlet and switch plates before installing SoundBreak XP Retrofit Board.
- For optimum performance, install acoustical putty pads on all electrical outlet and switch boxes.
- To install the board, locate framing members and temporarily mark their location on the floor and/or ceiling. Next, apply three 1/2" beads of construction adhesive complying with ASTM C557 to the back of SoundBreak XP Retrofit, parallel to the long edge. Use a 1/4" deep notched spreader to evenly distribute construction adhesive.
- Starting in the corner, stand the board up vertically against the wall making sure it is plumb. The PURPLE face side should be visible to the installer. Secure the board to the framing members with 1-1/2" (38.1 mm) drywall screws across the top, middle and bottom of the board. Ensure the board is tight to the existing surface. Additional fasteners may be needed.
- Ensure the gaps around the perimeter of the wall are sealed air tight with latex or acoustical sealant.
- Finish corners with joint tape and compound and spot fastener heads in the same manner as traditional gypsum board.
- After joint compound is dry and sanded, reinstall wall moldings.
- Decorate using conventional primer and paint.
- Reinstalling outlet and switch plates may require the use of box extensions.

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations.
- Hold SoundBreak XP Retrofit Board in firm contact with the existing gypsum board while driving fasteners. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	SoundBreak XP Retrofit Board
Thickness[1], Nominal	5/16" (7.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	10' (3,048 mm)
Weight, Nominal	1.3 – 1.4 lbs/sq ft (6.35 – 6.84 k/m^2)
Edges[1]	Slightly Tapered
Flexural Strength[1], Perpendicular	≥ 62 lbf. (276 N)
Flexural Strength[1], Parallel	≥ 21 lbf. (93 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 46 lbf. (205 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	N/A
Thermal Resistance[5]	N/A
Permeance[6]	N/A
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM G21	Score of 0
Surface Abrasion[9]	Level 3
Indentation[9]	N/A
Soft-Body Impact[9]	N/A
Hard-Body Impact[9]	N/A
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	N/A
UL Type Designation	N/A
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E90 *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Mold and Mildew Resistance

- SoundBreak XP Retrofit Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent laboratory, SoundBreak XP Retrofit Board received the highest possible ratings on ASTM G21 and ASTM D3273.
- No material can be considered "mold proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, SoundBreak XP Retrofit Board can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

Accessories

Use quality products, such as 1-1/2" (38.1 mm) drywall screws, construction adhesive (ASTM C557), latex or acoustical sealant, joint tape and setting compounds.

Guidelines for Optimum Performance and Sound Reduction

- Stagger gypsum board joints from one side of the partition to the other.
- Allow a 1/4" gap along all wall perimeter edges and completely seal 1/4" gap with acoustical sealant.
- Refrain from wall penetrations when possible.
- Limit necessary wall penetrations to one per stud cavity.
- Seal all penetrations with acoustical sealant or putty pads.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints, and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- Do not use on ceilings.
- Doors and windows will reduce the acoustical performance of a partition and may limit the effectiveness of SoundBreak XP Retrofit Board.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose SoundBreak XP Retrofit to temperatures exceeding 125°F (52°C) for extended periods of time.
- Store SoundBreak XP Retrofit off the ground and under cover. To prevent sagging, use sufficient risers to ensure support for the entire length of the gypsum board.
- Keep SoundBreak XP Retrofit dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining SoundBreak XP Retrofit Board. For additional information, refer to the Gypsum Association publication, *Guidelines for Prevention of Mold Growth on Gypsum Board (GA-238)*, at **gypsum.org**.
- Do not use power tools to cut the gypsum board.

XP® Fire-Shield® Radius Gypsum Board

For Use on Curved, Fire-Rated Wall Assemblies

1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper

Gold Bond® XP® Fire-Shield® Radius Gypsum Board is 5/16" thick and consists of a high-density, fire-resistant gypsum core encased in a heavy, abrasion- and mold-, mildew- and moisture-resistant PURPLE paper. Used in the construction of multi-layered, fire-rated wall assemblies. Specifically engineered for radius applications requiring a fire rating.

Tapered edges allow joints to be reinforced with joint tape, setting joint compound or ready mix joint compound. For optimum mold and mildew resistance, mold-resistant joint compounds are recommended.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® XP® Fire-Shield® Radius Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/16" (7.9 mm) thick boards are available in 4' (1,219 mm) width and standard lengths of 8' (2,438 mm), 10' (3,048 mm) and 12' (3,658 mm).

FINISHING

Tapered edge.

XP® FIRE-SHIELD®

BASIC USES

Applications

For use on multi-layered, fire rated wall assemblies. 5/16" XP Fire-Shield Radius Gypsum Board in curved applications requiring a fire rating are based on testing conducted in accordance with ASTM E119 for linear construction.

Advantages

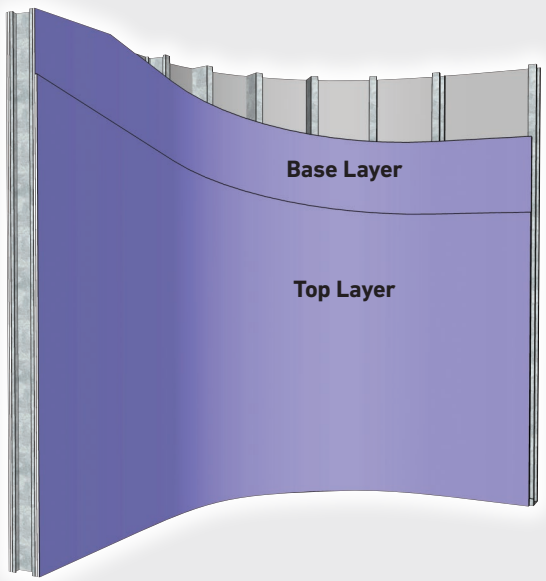
- For use in approved 1- and 2-hour fire-rated wall assemblies.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Easily scored and snaps easily, no special handling requirements.
- Heavy, abrasion-resistant paper and a denser core provides greater resistance to surface abuse when tested in accordance with ASTM C1629.
- Lightweight, cost-efficient material that readily accepts a wide range of decorative finishes.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

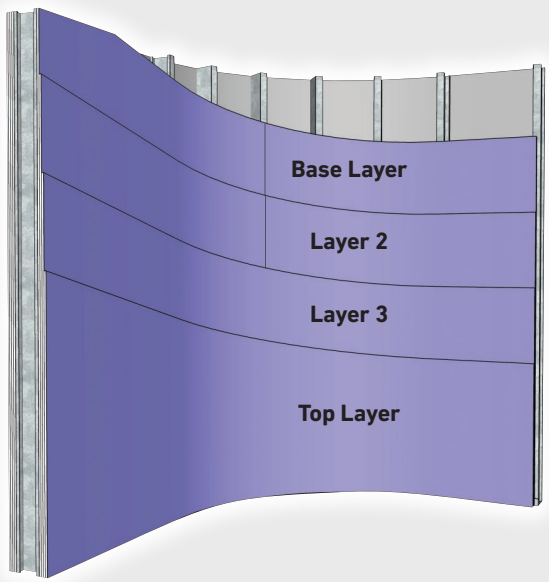
General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will align within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.

ONE-HOUR FIRE RATING



TWO-HOUR FIRE RATING



TECHNICAL DATA

Physical Properties	XP Fire-Shield Radius
Thickness[1], Nominal	5/16" (7.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' (2,438 mm), 10' (3,048 mm), 12' (3,658 mm)
Weight, Nominal	1.3 – 1.4 lbs/sq ft (6.35 – 6.84 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 62 lbf. (276 N)
Flexural Strength[1], Parallel	≥ 21 lbf. (93 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 46 lbf. (205 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	2' (610 mm)
Thermal Resistance[5]	N/A
Permeance[6]	22 perms
Water Absorption[1] (% of Weight)	≤ 5%
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM G21	Score of 0
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	N/A
UL Type Designation	FSW
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM G21.

- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- When using adhesive to attach gypsum board, apply drywall adhesive to the face of studs in continuous beads. Reference ASTM C840 Section 10.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- All ends and edges of gypsum board should occur over framing members or other solid backing except where joints occur at right angles to framing or furring members.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install or treat joints until building is properly enclosed.

XP® UltraShield FS® Gypsum Board

Increased Fire Resistance with Fewer Layers

1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant UltraShield 3/4" Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper

Gold Bond® XP® Ultra-Shield FS® Gypsum Board is 3/4" thick and consists of a mold-, mildew-, moisture- and fire-resistant gypsum core encased in 100% recycled paper on the face and back sides. The PURPLE face paper is folded around the long edges to reinforce and protect the core, and the ends are cut square and finished smooth.

Use it for 2- and 3-hour wall partitions and 2-hour cavity shaftwall assemblies to reduce material and installation labor. The core allows one layer of 3/4" XP Ultra-Shield FS to replace two layers of 5/8" Type X, or two layers of 3/4" XP Ultra-Shield FS to replace three layers of 5/8" Type X, in specific UL assemblies.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

XP® Ultra-Shield FS® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

3/4" (19.1 mm) thick boards are available in 4' (1,219 mm) width and 8' (2,438 mm) to 12' (3,658 mm) lengths.

FINISHING

Tapered edge.

BASIC USES

Applications

Use 3/4" XP Ultra-Shield FS Gypsum Board to achieve increased resistance to fire, mold, mildew and moisture, and to reduce sound transmission.

Advantages

- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Reduces labor and material costs by using fewer layers (up to 10%).
- UL Classified for fire resistance, surface-burning characteristics and non-combustibility.
- Cost-efficient material that readily accepts a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Locate gypsum board joints at openings so that no joint will align within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	XP Ultra-Shield FS
Thickness[1], Nominal	3/4" (19.1 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.85 lbs/sq ft (13.91 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 167 lbf. (743 N)
Flexural Strength[1], Parallel	≥ 56 lbf. (249 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 97 lbf. (432 N)
Hardness[1] – Core, Edges and Ends	N/A
Thermal Resistance[5]	R = .64
Mold Resistance[6], ASTM D3273	Score of 10
Mold Resistance[7], ASTM G21	Score of 0
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Ultra-Shield
UL Type Designation	Ultra-Shield
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
7. Tested in accordance with ASTM G21.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Ceiling areas abutting skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the ceiling board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints on single layer, or on the face layer on two-layer applications within 12" (305 mm) of the corners of window or door frames unless installing control joints at the door frame corners.
- Space supporting framing for single-layer application of 3/4" (19.1 mm) gypsum board a maximum of 24" (610 mm) o.c.

Gold Bond® Shaftliner XP®

Use in Shaftwalls, Stairwells and Area Separation Fire Walls

1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Type X Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper

Gold Bond® Shaftliner XP® gypsum panels consist of a mold-, mildew- and moisture-resistant Type X gypsum core encased in a mold-, mildew- and moisture-resistant, 100% recycled PURPLE paper on the face and back sides.

Shaftliner XP is designed to provide extra protection against mold and mildew. The face paper is folded around the long edges to reinforce and protect the core, and the ends are beveled and finished smooth. Long edges of panels are beveled for ease of installation.

Shaftliner XP panels are designed to be used to construct lightweight fire barriers for elevator shafts (1-4 hr.), stairwells and area separation fire walls in multifamily housing. The panels are key components in the I-Stud, C-T Stud and C-H Stud Cavity Shaftwall Systems and the H-Stud Area Separation Fire Wall Systems.

Gold Bond® Shaftliner XP® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1" (25.4 mm) thick shaftliner is available in 2' (610mm) width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Double beveled.

SHAFTLINER XP®

BASIC USES

Applications

Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 -3 hr.).

Advantages

- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Features SPORGARD® technology with extra mold-inhibiting properties.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Cuts easily for quick installation.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

Install Shaftliner XP consistent with methods described in specific application details for National Gypsum Cavity Shaftwall Systems or Area Separation Fire Wall Systems in *NGC Construction Guide*, or with other fire-resistance-rated designs.

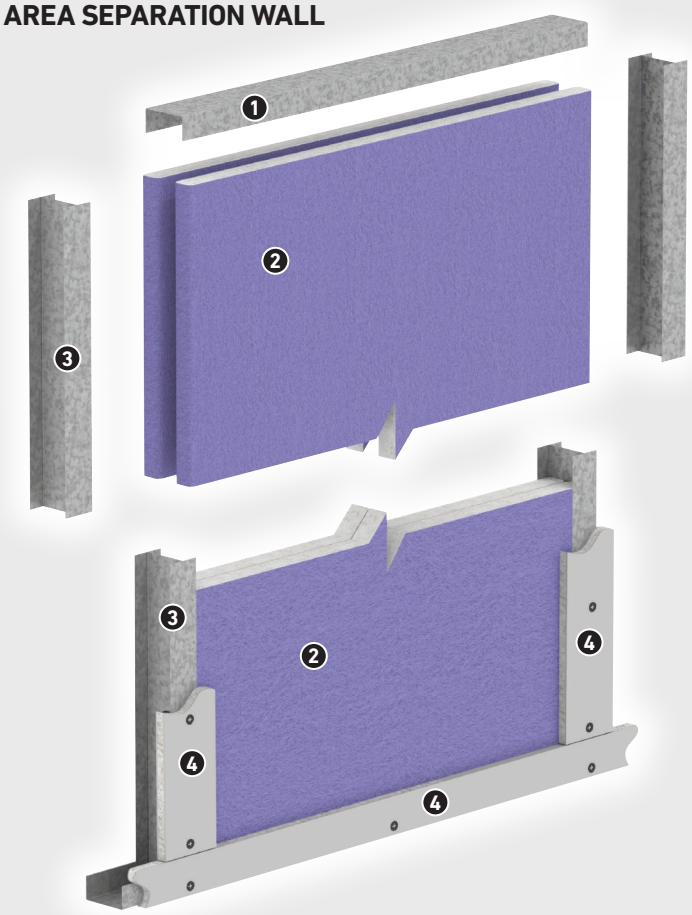
Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*. Maintain adequate ventilation in the working area during installation and curing period.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture.
- Avoid exposure to extreme temperatures. Do not use shaftliner where it will be exposed to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Do not use shaftliner in an unlined air supply duct.
- Isolate shaftliner from contact with building structure in locations where structural movement may impose direct loads on shaftliner assemblies.
- Do not immerse Shaftliner XP in water and do not subject to cascading water.

BASIC COMPONENTS OF AREA SEPARATION WALL

1. 2" C-Track
2. 1" Shaftliner XP®
3. 2" H-Stud
4. 1/2" Fire-Shield C™ Gypsum Batten



TECHNICAL DATA

Physical Properties	Shaftliner XP
Thickness[1], Nominal	1" (25.4 mm)
Width[1], Nominal	2' (610 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	3.75 lbs/sq ft (18.31 k/m^2)
Edges[1]	Double Beveled
Flexural Strength[1], Perpendicular	≥ 228 lbf. (1,014 N)
Flexural Strength[1], Parallel	≥ 77 lbf. (343 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Thermal Resistance[5]	R = .83
Mold Resistance[6], ASTM D3273	Score of 10
Mold Resistance[7], ASTM G21	Score of 0
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
7. Tested in accordance with ASTM G21.

Mold and Mildew Resistance

Gold Bond® XP® Gypsum Board products with SPORGARD® were designed to provide extra protection against mold and mildew compared to standard wallboard products. When tested by an independent laboratory, XP Gypsum Board products with SPORGARD received the highest possible ratings on ASTM G21 and D3273.

Gold Bond® eXP® Gypsum Panels were designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent lab per ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*, eXP Gypsum Panels achieved a score of 10, the best possible score for this test.

No material can be considered "mold-proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, XP and eXP products can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

PURPLE
EVOLVE YOUR WALLS™

Notes

High Performance Products for the Life of the Building

PURPLE eXP® is a technologically advanced fiberglass-faced gypsum line utilizing Sealed Surface Technology. With a solution for most every design or building challenge, our eXP products will help you construct the finest quality interior and exterior walls and ceilings. Our PURPLE coated fiberglass facers provide excellent weather and water resistance. Dimensionally stable under changes in temperature and humidity, eXP products resist warping, rippling and buckling.

FIRE RESISTANT

- Approved component in specific UL fire-rated designs.
- Non-combustible, fire-resistant material helps protect framing elements, even when cladding is combustible.

MOLD & MOISTURE RESISTANT

- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- PURPLE coated glass mat provides excellent weather and water resistance. Extraordinarily sturdy, glass mat will stand up to the elements.
- Provides superior water resistance without impeding vapor transmission.

STRENGTH

- Adds structural strength to stabilize structural framing.
- Fiberglass mats integrated into the gypsum core strengthen the panel.
- Strong foundation (or base) to build high-performance wall systems.

DIMENSIONAL STABILITY

- Dimensionally stable under changes in temperature and moisture conditions. eXP resists warping, rippling and buckling.
- Uniform flexural strength allows panels to be installed vertically or horizontally without sacrificing wall or ceiling strength.
- Long-term protection for the life of the structure.

GRIDMARX®

- Select products feature GridMarX® preprinted fastening guide on the panel to allow for faster and more accurate installation.

EASY TO HANDLE

- Lightweight and easy to handle. It can be cut and fastened with standard drywall tools and fasteners.
- Helps enhance construction schedules and offers long-term protection for the life of the building.
- Sealed Surface Technology is an additional coating on the mat that improves ease of use and enables a cleaner score and snap.

LOW-EMITTING MATERIALS

Select eXP products have achieved UL GREENGUARD and UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

Products that achieve UL GREENGUARD and UL GREENGUARD Gold Certification qualify as low-emitting per California Specification Section 01350 in accordance with CDPH Standard Method, v1.2. For more information, visit: **calrecycle.ca.gov**.

PURPLE
EVOLVE YOUR WALLS™

eXP® Sheathing

Mold and Moisture Resistant with Superior Exposure Capabilities

1. Coated Fiberglass Mat
2. Square Edges
3. Enhanced Moisture- and Mold-Resistant Core

Gold Bond® eXP® Sheathing consists of a moisture- and mold-resistant gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides. It is available in either a Regular or Type X core. The glass mat is folded around the long edges to reinforce and protect the core, and it provides superior weather resistance.

Use eXP Sheathing for attachment to the outside of wall and soffit framing as a substrate for exterior cladding.

GridMarX® are printed on the glass mat surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® eXP® Sheathing has achieved UL GREENGUARD Certification.

SIZES

1/2" (12.7 mm) Regular and 5/8" (15.9 mm) Fire-Shield Type X panels are available in 4' (1,219 mm) width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Square edge.

BASIC USES

Applications

- Use it as a sheathing on wood or steel framing to provide fire resistance and weather protection when used under exterior claddings, such as wood, vinyl and fiber cement siding, masonry veneer, Exterior Insulation and Finish System (EIFS) and stucco.
- Use it as a sheathing in fire-resistance-rated exterior wall assemblies.

Advantages

- Fire-resistant material with a non-combustible gypsum core helps protect framing elements, even when cladding is combustible.
- Does not require taping of joints when used in fire-rated exterior wall assemblies.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Provides superior water resistance without impeding vapor transmission.
- Scores and snaps to exact size without sawing.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Ideally suited for soffit applications and radius applications.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to Gold Bond Building Products, LLC limited warranties for further details.
- Coated fiberglass facers for easy handling.
- Features the GridMarX® guide marks on the panel to allow for faster and accurate installation.
- Achieves UL GREENGUARD Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

Install eXP Sheathing in accordance with manufacturer's written recommendations, GA-253, Application of Gypsum Sheathing; ASTM C1280 Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; and other standards referenced in this document.

Fastening

Nails: Galvanized, 11-gauge, 7/16" (11.1 mm) head, 1-1/2" (38.1 mm) long for 1/2" (12.7 mm) sheathing and 1-3/4" (44.4 mm) long for 5/8" (15.9 mm) sheathing.

Screws: ASTM C1002 or ASTM C954, 1-1/4" (31.7 mm) long Type W for wood framing and 1" (25.4 mm) long Type S-12 for metal framing.

Staples: Galvanized 16-gauge, 7/16" (11.1 mm) crown, 1-1/2" (38.1 mm) long for 1/2" (12.7 mm) sheathing and 1-5/8" (41.3 mm) long for 5/8" (15.9 mm) sheathing.

All fasteners used to attach the sheathing to structural framing must be driven so that the heads are at, or slightly below the surface of the sheathing without fracturing the core. Staples should be driven with the crown parallel to the framing. Fasteners should be no less than 3/8" (9.5 mm) from the edges and ends of the panel. When shear values are not required, fasteners should be spaced not more than 8" (203 mm) o.c. along the vertical ends or edges and intermediate supports.

Sheathing

eXP Sheathing may be attached parallel to or perpendicular to wood or metal framing. For horizontal applications, install eXP Sheathing with end joints staggered.

Use appropriate panel orientation for specific fire assemblies and shear wall applications, as required by the design.

Install eXP Sheathing with vertical edges butting over the center of framing members. Fit sheathing snugly around all openings.

Install panels with a 3/8" (9.5 mm) gap where non-load-bearing construction abuts structural elements.

To prevent wicking, install panels with a 1/4" (6.4 mm) gap where they abut masonry or similar materials that might retain moisture.

Locate control joints as required by building design and as recommended by the manufacturer of the specified cladding material.

Vinyl, Wood and Fiber Cement Siding

Apply horizontal siding and vertical siding panels directly over eXP Sheathing covered with weather-resistive barrier. Butt siding joints over framing members. Fasteners should have a minimum 1" (25.4 mm) penetration into each wood framing member and penetration of each metal framing member recommended by fastener manufacturer.

TECHNICAL DATA

Physical Properties	eXP Sheathing	eXP Sheathing Fire-Shield
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	1.9 lbs/sq ft (9.28 k/m^2)	2.5 lbs/sq ft (12.21 k/m^2)
Edges[1]	Square	Square
Flexural Strength[1], Perpendicular	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)
Flexural Strength[1], Parallel	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 2/8" (6.4 mm)	≤ 1/8" (3.2 mm)
Nail Pull Resistance[1]	≥ 80 lbf. (356 N)	≥ 90 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
Bending Radius	6' (1,829 mm)	8' (2,438 mm)
Thermal Resistance[5]	R = .43	R = .54
Permeance[6]	22 perms	19 perms
Water Absorption[1] (% of Weight)	≤ 10%	≤ 10%
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F	9.26 x 10^{-6} in/in/°F
Racking Strength[7] (Ultimate – not design value)	> 540 lbs/ft (732 N/m)	> 654 lbs/ft (887 N/m)
Mold Resistance[8], ASTM D3273	Score of 10	Score of 10
Compressive Strength[9]	≥ 500 psi	≥ 500 psi
Product Standard Compliance	ASTM C1177	ASTM C1177
Fire-Resistance Characteristics		
Core Type	Regular	Type X
UL Type Designation	N/A	FSW-6
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	0	0
Smoke Development[3]	0	0
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1177 *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing*		
ASTM C1280 *Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing*		
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*		
ASTM E72 *Standard Test Methods for Conducting Strength Tests of Panels for Building Construction*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*		
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*		
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*		
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*		
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*		
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*		
Gypsum Association, GA-253, *Application of Gypsum Sheathing*		
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

1. Specified values per ASTM C1177, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96
7. Tested in accordance with ASTM E72.
8. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
9. Tested in accordance with ASTM C473, annex X3.

Stucco

Nail or screw 3.4 lb. self-furring galvanized diamond mesh metal lath through weather-resistant barrier and eXP Sheathing into the framing. Install metal lath immediately after installing eXP Sheathing.

Brick Veneer

Wall ties for masonry veneer should be fastened through eXP Sheathing with fasteners that penetrate a minimum of 1" (25.4 mm) into wood framing and recommended penetration of cold-formed metal framing. Maintain an air space of minimum 2" (50.8 mm) between eXP Sheathing and brick veneer per recommendations of the Brick Institute of America.

Shear Wall Applications with eXP Sheathing

For shear walls constructed with 1/2" (12.7 mm) and 5/8" (15.9 mm) eXP Sheathing, apply sheathing vertically to wood studs 16" (406 mm) o.c. with 11-gauge, 1-3/4" (44.4 mm) long, galvanized nails 4" (102 mm) o.c. at edges and 8" (203 mm) o.c. at intermediate studs.

Corner Bracing: Where continuous diagonal bracing is required, many building codes allow the use of 48" (1,219 mm) wide 5/8" (15.9 mm) gypsum sheathing panels applied vertically to be used in place of 1" (25.4 mm) x 4" (102 mm) wood let-in or metal strap bracing.

Shear Walls: Where wind or seismic forces require shear walls to resist these lateral forces, most building codes provide allowable shear values for walls having gypsum sheathing applied vertically to wood framing. Specific values with construction requirements and limitations are contained in the model building code (ICC: International Building Code [IBC] and International Residential Code for One- and Two-Family Dwellings [IRC]). Shear values for all gypsum panels, including gypsum sheathing, are defined in GA-229, *Shear Values for Screw Application of Gypsum Board on Walls*.

Mold and Mildew Resistance

eXP Sheathing was designed to provide extra protection against mold and mildew. When tested by an independent laboratory, per ASTM D3273, eXP Sheathing achieved a score of 10, the best possible score for this test.

The use of eXP Sheathing in actual installations may not achieve the same results as were achieved in controlled, laboratory conditions. No material can be considered "mold proof," nor is it certain that any material will resist mold indefinitely. When used in conjunction with good design, handling and construction practices, eXP Sheathing can provide increased mold resistance versus standard sheathing products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

Fire Resistance Ratings

Fire resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the test. Further, precautions should be taken that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL.

5/8" eXP Fire-Shield Sheathing is tested in accordance with ASTM Standard E119 and is classified as Type X for use in UL Listings.

Joint Treatment

eXP Sheathing is compatible with a variety of exterior systems. For applications requiring joint treatment, joint finishes must be compatible with the exterior system specified. Consult your weather/water-resistant barrier manufacturer, cladding manufacturer or local building code authority to determine the appropriate joint treatment. The eXP Sheathing 12-month exposure limited warranty does not require, for its applicability, the use of joint treatment or a weather barrier.

Decoration

Soffit and Ceiling applications only

Embed 2" (51 mm) wide paper or fiberglass mesh tape in a setting compound over all joints. Once dry, apply a skim coat of setting compound over the panels to achieve a uniform, smooth finish over the entire area. Prime with exterior grade primer and finish with two coats of exterior grade paint.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

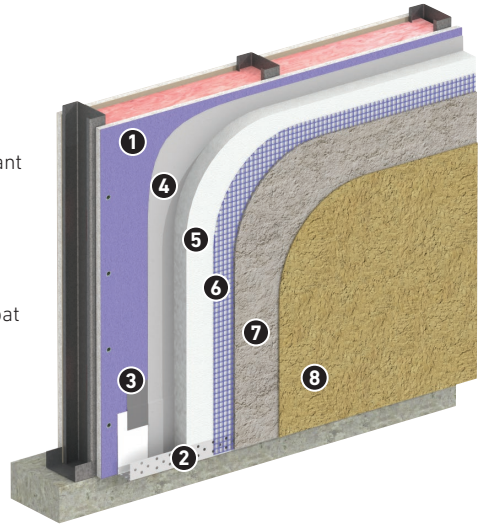
LIMITATIONS

- eXP Sheathing is not a finished surface, nor is it a substrate for the direct application of joint compound, stucco, paint or textures in exterior wall applications. Exterior soffit applications are permitted. Placement of vapor retarders within the wall assembly is the responsibility of the design professional.
- Do not use eXP Sheathing as a nailing base. Mechanical fasteners should pass through the sheathing and engage the framing member behind the panel.
- Install materials used in conjunction with eXP Sheathing per the respective manufacturer's recommendations.
- eXP Sheathing is resistant to weather, but it is not intended for immersion in water and should not be subjected to ponding or to cascading water conditions.
- Do not apply eXP Sheathing below grade. Comply with building code grade clearance requirements.
- Do not laminate eXP Sheathing directly to masonry surfaces; fasten panels to furring strips or framing.
- eXP Sheathing is not intended for tile applications. For tile applications, use Gold Bond® eXP® Tile Backer.
- Gypsum sheathing is not a replacement for specific structurally engineered sheathing in shear wall designs.
- Adhesive-only application of eXP Sheathing to framing is not recommended.
- Framing supports must not exceed 24" (610 mm) o.c.
- Design details, including fasteners, sealants and control joints, must be properly installed per system specifications. Openings and penetrations must be properly flashed and sealed according to code, building design and weather-resistive barrier manufacturer's instructions. Failure to do so will void the warranty; refer to eXP Sheathing warranty for terms, conditions and limitations.
- Avoid conditions that will create moisture in the air and condensation on eXP Sheathing. The use of unvented or improperly vented forced air heaters in the building creates water vapor volumes which can condense on the exterior sheathing. The use of these heaters and any resulting damage is not the responsibility of Gold Bond Building Products. Please consult heater manufacturer for proper use and ventilation.

Common eXP Sheathing Exterior Applications

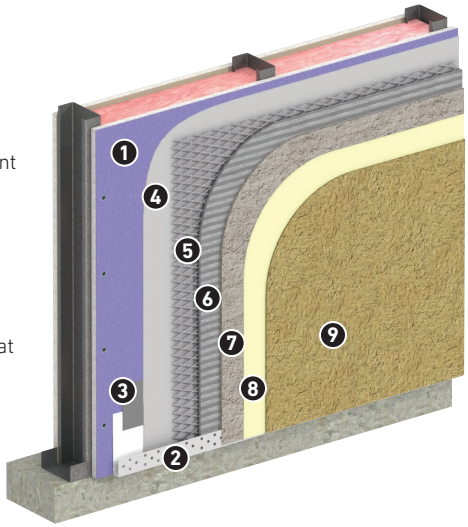
EIFS

1. eXP Sheathing
2. Weep Screed
3. Screed Flashing
4. Weather-Resistant Barrier
5. Rigid Insulation
6. Mesh
7. Basecoat
8. Stucco Finish Coat



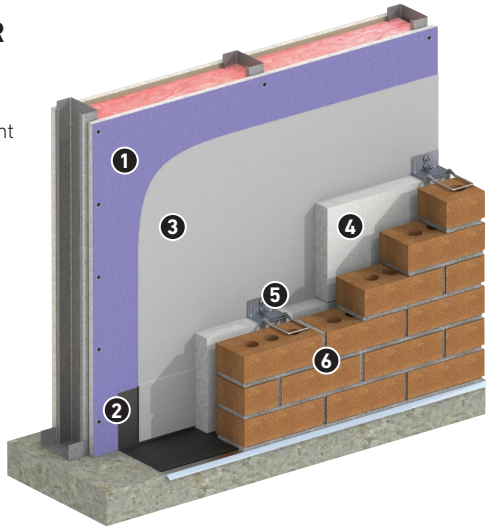
STUCCO

1. eXP Sheathing
2. Weep Screed
3. Screed Flashing
4. Weather-Resistant Barrier
5. Metal Lath
6. Scratch Coat
7. Brown Coat
8. Primer
9. Stucco Finish Coat



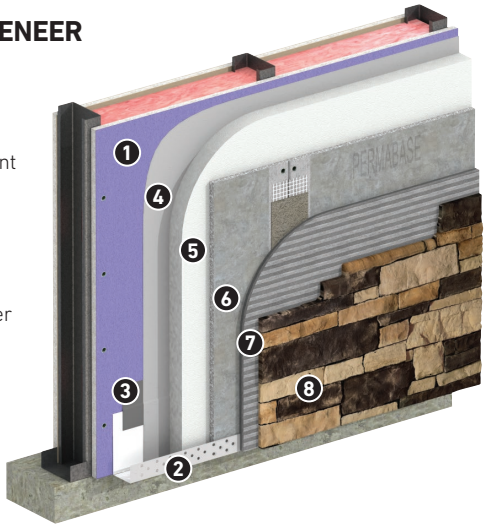
BRICK VENEER

1. eXP Sheathing
2. Base Flashing
3. Weather-Resistant Barrier
4. Rigid Insulation
5. Veneer Tie
6. Brick Veneer



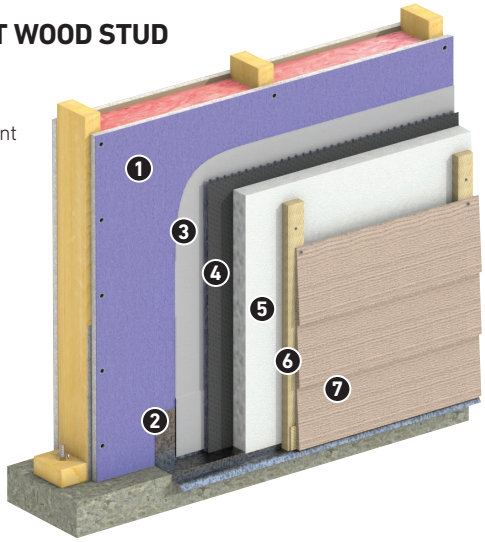
THIN STONE VENEER

1. eXP Sheathing
2. Weep Screed
3. Base Flashing
4. Weather-Resistant Barrier
5. Rigid Insulation
6. Cement Board
7. Basecoat
8. Thin Stone Veeneer



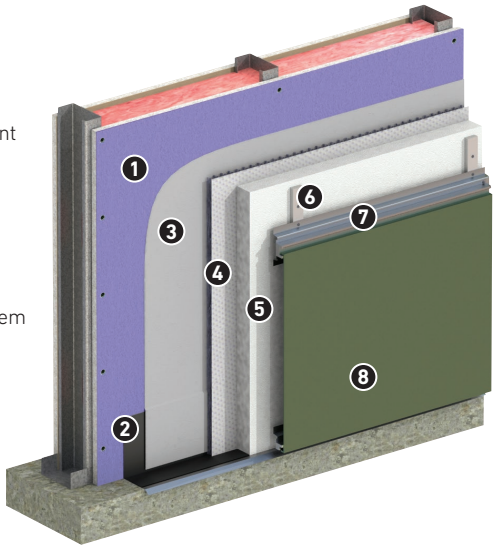
FIBER CEMENT WOOD STUD

1. eXP Sheathing
2. Base Flashing
3. Weather-Resistant Barrier
4. Drainage Mat
5. Rigid Insulation
6. Furring Strips
7. Lap Siding



METAL PANEL

1. eXP Sheathing
2. Base Flashing
3. Weather-Resistant Barrier
4. Drainage Mat
5. Rigid Insulation
6. Furring Strips
7. Horizontal Girts
8. Metal Panel System



eXP® Shaftliner

Lightweight, Weather-Resistant Fire Barrier

1. Coated Fiberglass Mat
2. Double Beveled Edges
3. Enhanced Moisture- and Mold-Resistant Core

Gold Bond® eXP® Shaftliner consists of an enhanced moisture- and mold-resistant Type X gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides. The glass mat is folded around the long edges to reinforce and protect the core.

Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 hr.).

For ease of installation, the long edges of eXP Shaftliner are double beveled.

Gold Bond® eXP® Shaftliner has achieved UL GREENGUARD Gold Certification.

SIZES

1" (25.4 mm) thick panels are available in 2' (610 mm) nominal width and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Double beveled edge.

BASIC USES

Applications

eXP Cavity Shaftwall Systems: These systems enclose elevator, horizontal shafts and chase walls in buildings where it is advantageous to erect these walls from one side only. eXP Shaftliner is the right choice when designing for fire resistance and changing air pressure. Shaftwalls are non-load-bearing partitions made up of gypsum board and metal framing. These systems are lightweight and economical compared with conventional shaftwalls.

eXP Area Separation Wall Systems: These systems are a popular method for constructing today's multifamily housing units. These assemblies will be exposed to outdoor elements during the building process, and eXP Shaftliner features a coated glass mat facer and gypsum core that can provide increased protection.

Advantages

- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Provides superior water resistance, without impeding vapor transmission.
- Scores and snaps to exact size without sawing.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to Gold Bond Building Products, LLC limited warranties for further details.
- Fiberglass mat on face and back has special coating for easy handling.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

Install eXP Shaftliner consistent with methods described in specific application details in the Cavity Shaftwall Systems or Area Separation Wall System sections or with other fire-resistance-rated designs.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture.
- Avoid exposure to extreme temperatures. Do not expose glass mat gypsum panels to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Do not use eXP Shaftliner panels in an unlined air supply duct.
- Isolate gypsum panels from contact with building structure in locations where structural movement may impose direct loads on gypsum panel assemblies.
- eXP Shaftliner is weather resistant, but do not immerse in water and do not subject to cascading water conditions.

TECHNICAL DATA

Physical Properties	eXP Shaftliner
Thickness[1], Nominal	1" (25.4 mm)
Width[1], Nominal	2' (610 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	3.75 lbs/sq ft (18.31 k/m^2)
Edges[1]	Double Beveled
Flexural Strength[1], Perpendicular	≥ 230 lbf. (1,023 N)
Flexural Strength[1], Parallel	≥ 80 lbf. (356 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 80 lbf. (356 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)
Thermal Resistance[5]	R = .65
Water Absorption[1] (% of Weight)	≤ 5%
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F
Mold Resistance[6], ASTM D3273	Score of 10
Product Standard Compliance	ASTM C1658
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-7
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1658 *Standard Specification for Glass Mat Gypsum Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.

eXP® Tile Backer

Tile Substrate for Wet Areas

1. Acrylic-Coated Water Barrier
2. Coated Fiberglass Mat
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond eXP® Tile Backer is manufactured with an enhanced moisture- and mold-resistant core encased in specially designed coated glass mat facers. The facer is then coated with a specially formulated acrylic coating, which provides superior protection against moisture and humidity. It provides an integral water barrier, eliminating the need for a separate water barrier. eXP Tile Backer is available in either a Regular or Type X core.

eXP Tile Backer is an acrylic-coated, moisture- and mold-resistant gypsum panel specially designed for use as a substrate for tile applications in high moisture rooms, including showers, bathrooms, indoor swimming pools, laundry rooms and kitchens.

Use eXP Tile Backer as a code-compliant substrate for tile and other finishes in both wet and non-wet areas, areas of high humidity and fire-rated assemblies (5/8" Type X). It is ideally suited for interior walls and ceilings.

GridMarX® are printed on the glass mat surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® eXP® Tile Backer has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) Regular and 5/8" (15.9 mm) Fire-Shield Type X panels are available in 4' (1,219 mm) nominal width and in 8' (2,438 mm) length.

FINISHING

Square edge.

eXP® TILE BACKER

BASIC USES

Applications

- Use in both wood- and metal-framed construction for interior wall, ceiling and countertop assemblies as a substrate for tile and other finishes. It provides increased mold and moisture resistance in both wet and non-wet areas, areas of high humidity and in fire-rated assemblies.
- The specially formulated 5/8" (15.9 mm) Type X core has superior fire-resistive performance when used in specific fire-rated assemblies.

Advantages

- Acrylic-coated fiberglass front facer provides an integral water barrier, eliminating the need for a separate water barrier.
- Approved for use in high-moisture environments, such as baths, showers, indoor pools, kitchens and laundry rooms.
- 5/8" (15.9 mm) eXP Tile Backer is an approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install eXP Tile Backer in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which tile backer boards are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Do not embed eXP Tile Backer into mortar bed in showers. Install with gray side facing away from the framing, apply tile/finishes to the gray side.
- Score/cut from the gray side using a standard utility knife. Cutouts are made easily with a utility knife or saw. Panel joints must be tight. Fill gaps and inside corners with flexible sealant.
- Drive fasteners flush with the panel surface; do not countersink.
- Hold tile backer boards in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Take care to avoid breaking the facer of the tile backer board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Embed alkali-resistant fiberglass tape with the tile setting material at tile backer board joints prior to tile installation.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of tile backer boards.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the tile backer boards and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*.
- Avoid installing water-sensitive materials on eXP Tile Backer panels in pre-rock applications until the building is enclosed.

Ceilings

- Apply tile backer boards first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Bring panel edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the tile backer boards on ceilings. Install the insulation immediately after the panels when using loose fill insulation. Avoid installation practices that might allow condensation to form behind panels.
- When used as a tile substrate for ceilings, apply panels perpendicular to the supports spaced a maximum of 12" (305 mm) o.c. for 1/2" (12.7 mm) and 16" (406 mm) o.c. for 5/8" (15.9 mm). Space fasteners 8" (203 mm) o.c. along all support members.

Walls

- Locate gypsum panel joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Install tile backer boards either horizontally or vertically to framing using fasteners every 8" (203 mm) o.c. When applying tile, use minimum 20-gauge steel or wood framing spaced 16" (406 mm) o.c. without blocking, or 24" (610 mm) o.c. with blocking at all joints for 1/2" (12.7 mm), and spaced 24" (610 mm) o.c. for 5/8" (15.9 mm).

Fasteners

	1/2" eXP Tile Backer	5/8" eXP Tile Backer
Wood Framing	1-1/2" min. galvanized roofing nail	1-3/4" min. galvanized roofing nail
	1-1/4" min. corrosion resistant coarse thread bugle head	1-1/4" min. corrosion resistant coarse thread bugle head
Metal Framing	1" min. corrosion resistant sharp point or drill point bugle head screw	1" min. corrosion resistant sharp point or drill point bugle head screw*

* Or as required in specified fire rated assembly.

TECHNICAL DATA

Physical Properties	eXP Tile Backer	eXP Fire-Shield Tile Backer
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)
Length[1,4], Standard	8' (2,438 mm)	8' (2,438 mm)
Weight, Nominal	2.0 lbs/sq ft (9.76 k/m^2)	2.5 lbs/sq ft (12.21 k/m^2)
Edges[1]	Square	Square
Flexural Strength[1], Perpendicular	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)
Flexural Strength[1], Parallel	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 2/8" (6.4 mm)	≤ 1/8" (3.2 mm)
Nail Pull Resistance[1]	≥ 70 lbf. (311 N)	≥ 90 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
Bending Radius	12' (3,658 mm)	16' (4,877 mm)
Thermal Resistance[5]	R = .43	R = .50
Permeance[6]	2 perms	2 perms
Water Absorption[1] (% of Weight)	≤ 5%	≤ 5%
Surface Water Absorption[1]	≤ .5 grams	≤ .5 grams
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F	9.26 x 10^{-6} in/in/°F
Mold Resistance[7], ASTM D3273	Score of 10	Score of 10
Mold Resistance[8], ASTM D6329	Pass	Pass
Product Standard Compliance	ASTM C1178	ASTM C1178
Fire-Resistance Characteristics		
Core Type	Regular	Type X
UL Type Designation	N/A	FSW-6
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	0	0
Smoke Development[3]	0	0
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1178 *Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel*		
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*		
ASTM D6329 *Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*		
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Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM D6329.

Countertops

Apply eXP Tile Backer over a minimum 23/32" (18.3 mm) exterior-grade plywood sub-base using a bed of thin-set mortar applied with a 1/4" (6.4 mm) x 1/4" (6.4 mm) notched trowel between the plywood and eXP Tile Backer. Fasten using 1-1/4" (31.8 mm) long corrosion-resistant roofing nails or coarse thread bugle-head screws spaced no more than 8" (203 mm) o.c. in both directions.

Penetrations

Caulk or seal fixture or plumbing penetrations and abutments to dissimilar materials.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

FINISHING

Tile Application Over eXP Tile Backer

Tile can be set using either thin-set mortar (ANSI A118.1 or A118.4) or organic adhesive (ANSI A136.1). Embed alkali-resistant fiberglass tape with the tile-setting material prior to tile installation. Install using manufacturer's instructions. Allow tile-setting material to cure for a day prior to grout application.

Non-Tile Application Over eXP Tile Backer

Dry non-tile applications: Outside the wet areas of showers and baths, tape joints with gypsum board tape and embed with setting tape joint compound. Skim the entire surface with a joint compound to create a smooth surface for finishing. Use setting compound or all-purpose ready mix joint compound for skim coat.

High Humid Area Applications

For areas of higher than normal humidity, such as swimming pools and process facilities, finish the walls with materials suitable for humid environments, such as direct-applied finish systems. Caulk all transitions and abutments to dissimilar materials with a flexible caulk. Seal all penetrations, including outlets and switches.

LIMITATIONS

- For interior use only.
- Always apply tile/finishes to the acrylic face.
- Treat joints under tile with alkali-resistant fiberglass mesh tape set in thin-set mortar or tile adhesive.
- Do not use conventional paper gypsum board tape, joint compound, gypsum board nails and gypsum board screws in wet areas.
- Do not use on floor installations.
- Do not use in shower pans or shower curbs.
- Do not use as a base for nailing and mechanical fastening.
- Do not expose to temperatures exceeding 125˚F (52˚C).
- Avoid continuous exposure to extreme conditions in applications such as saunas, steam rooms and radiant barriers at fireplaces.
- Do not install a vapor barrier directly behind tiled eXP Tile Backer. Consult your local building code for vapor barrier requirements.
- Do not apply eXP Tile Backer directly to concrete or masonry block.

Common eXP Tile Backer Installation Applications

SHOWER INSTALLATION

1. eXP® Tile Backer
2. Fiberglass Mesh Tape (Alkali-Resistant) Embedded in Joint Compound
3. Latex Portland Cement Mortar
4. Tile and Grout

SHOWER INSTALLATION

1. Support Framing 1/4" / 12" Slope Towards Drain
2. Plywood, Min. 1/2"
3. eXP® Tile Backer
4. Membrane
5. Sealant
6. Latex Portland Cement Mortar
7. Tile and Grout

eXP® Interior Extreme®

Increased Resistance to Incidental Moisture

1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® eXP® Interior Extreme® Gypsum Panels consist of a moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. It is available in a Regular, Type X or Type C core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it wherever gypsum board is specified in interior applications for the entire project, wood or metal framing, for increased resistance to incidental moisture.

GridMarX® are printed on the glass mat surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® eXP® Interior Extreme® Gypsum Panels have achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) Regular or Type C panels and 5/8" (15.9 mm) Fire-Shield Type X or Type C panels are available in 4' (1,219 mm) nominal width and in 8' (2,438 mm) to 12' (3,658 mm) lengths.

FINISHING

Tapered edge.

eXP® INTERIOR EXTREME®

BASIC USES

Applications

- Use it in both wood- and metal-framed construction for interior wall and ceiling finishing to provide increased moisture and mold resistance.
- Use it on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely. Also approved for use in protected exterior soffit applications.
- Can use for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

Advantages

- Versatile product can be used throughout entire project wherever gypsum board is specified.
- May use for pre-rock applications before building is completely enclosed, which may speed installation.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Scores and snaps easily without sawing.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to Gold Bond Building Products, LLC limited warranties for further details.
- Features the GridMarX® guide marks on the panel to allow for faster and accurate installation.
- 1/2" (12.7 mm) Fire-Shield C, 5/8" (15.9 mm) Fire-Shield Type X or Type C have specially formulated cores that are approved components in specific UL fire-rated designs.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Panel edges should be brought into contact with each other but not forced into place.
- Install batt or blanket ceiling insulation before the gypsum panels on ceilings when installing a polyethylene vapor barrier on ceilings behind the gypsum panels. Install the insulation immediately after the gypsum panels when using loose fill insulation. Avoid installation practices that allow condensation to form behind panels.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum panels.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials on eXP Interior Extreme Gypsum Panels in pre-rock applications until the building is enclosed.

TECHNICAL DATA

Physical Properties	eXP Interior Extreme	1/2" eXP Interior Extreme Type C	5/8" eXP Interior Extreme Type X	5/8" eXP Interior Extreme Type C
Thickness[1], Nominal	1/2" (12.7 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.0 lbs/sq ft (9.76 k/m^2)	2.1 lbs/sq ft (10.25 k/m^2)	2.5 lbs/sq ft (12.21 k/m^2)	2.5 lbs/sq ft (12.21 k/m^2)
Edges[1]	Tapered	Tapered	Tapered	Tapered
Flexural Strength[1], Perpendicular	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)	≥ 140 lbf. (623 N)
Flexural Strength[1], Parallel	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 2/8" (6.4 mm)	≤ 2/8" (6.4 mm)	≤ 1/8" (3.2 mm)	≤ 1/8" (3.2 mm)
Nail Pull Resistance[1]	≥ 80 lbf. (356 N)	≥ 80 lbf. (356 N)	≥ 90 lbf. (400 N)	≥ 90 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
Bending Radius	6' (1,829 mm)	6' (1,829 mm)	8' (2,438 mm)	8' (2,438 mm)
Thermal Resistance[5]	R = .43	R = .43	R = .50	R = .50
Permeance[6]	22 perms	22 perms	19 perms	19 perms
Water Absorption[1] (% of Weight)	≤ 5%	≤ 5%	≤ 5%	≤ 5%
Surface Water Absorption[1]	≤ 1.6 grams	≤ 1.6 grams	≤ 1.6 grams	≤ 1.6 grams
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH	6.25 x 10^{-6} in/in/%RH	6.25 x 10^{-6} in/in/%RH	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F	9.26 x 10^{-6} in/in/°F	9.26 x 10^{-6} in/in/°F	9.26 x 10^{-6} in/in/°F
Mold Resistance[7], ASTM D3273	Score of 10	Score of 10	Score of 10	Score of 10
Mold Resistance[8], ASTM D6329	Pass	Pass	Pass	Pass
Product Standard Compliance	ASTM C1658	ASTM C1658	ASTM C1658	ASTM C1658
Fire-Resistance Characteristics				
Core Type	Regular	Type C	Type X	Type C
UL Type Designation	N/A	eXP-C	FSW-6	eXP-C
Combustibility[2]	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A	Class A	Class A
Flame Spread[3]	0	0	0	0
Smoke Development[3]	0	0	0	0
Applicable Standards and References				
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*				
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*				
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*				
ASTM C1658 *Standard Specification for Glass Mat Gypsum Panels*				
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*				
ASTM D6329 *Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers*				
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*				
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*				
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*				
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*				
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*				
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*				
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*				
Gypsum Association, GA-253, *Application of Gypsum Sheathing*				
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*				

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM D6329.

Finishing

Perform finishing of eXP Interior Extreme Gypsum Panels in accordance with GA-214. Joints between eXP Interior Extreme Gypsum Panels may be finished with paper tape and ready mix joint compound or setting compound. To achieve a "paperless" wall assembly, finish the joints with fiberglass mesh tape and setting compound. In most areas to receive final decoration, skim coating of the entire surface is recommended.

Decoration

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum panel board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

LIMITATIONS

- Do not use for exposed exterior applications. eXP Interior Extreme Gypsum Panels are intended for interior applications or projects.
- Do not use panels as a nailing base.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum panels are not recommended where they will be exposed to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- Use setting-type joint compound when treating joints in pre-rock applications. Provide weather protection for all joint treatment prior to completion of the building enclosure.

Common eXP Interior Extreme Installation Applications

PRE-ROCK INSTALLATION

1. Topping out with eXP® Interior Extreme® Gypsum Panel in an Exposed Environment
2. Pre-rock with eXP® Interior Extreme® Gypsum Panel

SOFFIT INSTALLATION

1. eXP® Interior Extreme® Gypsum Panel
2. Mesh Tape Set in Setting Compound
3. Skim Coat Setting Compound
4. eXP® Sheathing

eXP® Interior Extreme® AR

For Areas Prone to Surface Abrasion and Indentation

1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® eXP® Interior Extreme® AR Gypsum Panels consist of an abuse-, moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. In addition to moisture and mold resistance, the AR panel has a denser core and an enhanced glass mat for increased resistance to indentation and abrasion. It is available in a Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it for interior applications in areas prone to surface abrasion and indentation, including corridors, entryways, lobby areas and warehouses.

GridMarX® are printed on the glass mat surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® eXP® Interior Extreme® AR Gypsum Panels have achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) Type X panels are available in 4' (1,219 mm) nominal width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered edge.

eXP® INTERIOR EXTREME® AR

BASIC USES

Applications

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation and moisture, mold and mildew resistance are major concerns.
- Use it on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely.
- Use it for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

Advantages

- Provides greater resistance to surface abuse and impact penetration over standard gypsum board.
- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to Gold Bond Building Products, LLC limited warranties for further details.
- Features the GridMarX® preprinted fastening guide on the panel to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216. Note that cutting and scoring should be from the back side of the panels.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Panel edges should be brought into contact with each other but not forced into place.
- Install batt or blanket ceiling insulation before the gypsum panels on ceilings when installing a polyethylene vapor barrier on ceilings behind the gypsum panels. Install the insulation immediately after the gypsum panels when using loose fill insulation. Avoid installation practices that allow condensation to form behind panels.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum panels.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Listed impact ratings apply to walls constructed with eXP Interior Extreme AR Gypsum Panels applied with long edges parallel to and centered over minimum 20-gauge framing members spaced a maximum of 16" (406 mm) o.c.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials on eXP Interior Extreme Gypsum Panels in pre-rock applications until the building is enclosed.

Finishing

Perform finishing of eXP Interior Extreme Gypsum Panels in accordance with GA-214. Joints between eXP Interior Extreme Gypsum Panels may be finished with paper tape and either ready mix joint compound or setting joint compound. To achieve a "paperless" wall assembly, finish the joints with fiberglass mesh tape and setting compound. In most areas to receive final decoration, skim coating of the entire surface is recommended.

Decoration

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

TECHNICAL DATA

Physical Properties	eXP Interior Extreme AR
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.8 lbs/sq ft (13.67 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 140 lbf. (623 N)
Flexural Strength[1], Parallel	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 1/8" (3.2 mm)
Nail Pull Resistance[1]	≥ 90 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)
Bending Radius	8' (2,438 mm)
Thermal Resistance[5]	R = .50
Permeance[6]	19 perms
Water Absorption[1] (% of Weight)	≤ 5%
Surface Water Absorption[1]	≤ 1.6 grams
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM D6329	Pass
Surface Abrasion[9]	Level 3
Indentation[9]	Level 1
Soft-Body Impact[9]	Level 2
Hard-Body Impact[9]	Level 1
Product Standard Compliance	ASTM C1658
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-6
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM C1658 *Standard Specification for Glass Mat Gypsum Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM D6329 *Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gypsum Association, GA-253, *Application of Gypsum Sheathing*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM D6329.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum panel board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

LIMITATIONS

- Do not use for exterior applications. eXP Interior Extreme AR Gypsum Panels are intended for interior use only.
- Do not use panels as a nailing base.
- Do not finish joints until building is properly enclosed. It is permissible in pre-rock assemblies to apply level one taping only on vertical applications using setting type joint compound. Do not allow the taped areas to have direct contact with cascading water.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum panels are not recommended where they will be exposed to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312" design thickness) steel stud is required.
- Space supporting framing a maximum of 16" (406 mm) o.c.

eXP® Interior Extreme® IR

Provides Resistance to Incidental Moisture and Wall Penetration

1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core
4. Fiberglass Mesh

Gold Bond® eXP® Interior Extreme® IR Gypsum Panels consist of an impact-resistant and a moisture- and mold-resistant gypsum core encased in a coated, specially designed glass mat on the face, back and sides. In addition to moisture and mold resistance, the impact-resistant panel has a denser core and an enhanced glass mat for increased resistance to indentation and impact. Additionally, the fiberglass mesh embedded into the core enhances impact resistance. It is available in a Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it for interior applications requiring increased resistance to incidental moisture and wall penetrations. It is ideal for areas prone to cavity penetration, including gymnasiums, correctional facilities, schools and workshops.

GridMarX® are printed on the glass mat surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® eXP® Interior Extreme® IR Gypsum Panels have achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) Type X panels are available in 4' (1,219 mm) nominal width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered edge.

eXP® INTERIOR EXTREME® IR

BASIC USES

Applications

- Use in wall assemblies in areas where surface abrasion, impact or penetration and moisture, mold and mildew resistance are major concerns.
- Use on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely.
- Use for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

Advantages

- Provides greater resistance to abuse and impact penetration over standard gypsum board.
- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to Gold Bond Building Products, LLC limited warranties for further details.
- Features the GridMarX® preprinted fastening guide on the panel to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216. Note that cutting and scoring should be from the back side of the panels.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Panel edges should be brought into contact with each other but not forced into place.
- Install batt or blanket ceiling insulation before the gypsum panels on ceilings when installing a polyethylene vapor barrier on ceilings behind the gypsum panels. Install the insulation immediately after the gypsum panels when using loose fill insulation. Avoid installation practices that allow condensation to form behind panels.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum panels.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Listed impact ratings apply to walls constructed with eXP Interior Extreme IR Gypsum Panels applied with long edges parallel to and centered over minimum 20-gauge framing members spaced a maximum of 16" (406 mm) o.c.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials on eXP Interior Extreme Gypsum Panels in pre-rock applications until the building is enclosed.

Finishing

Perform finishing of eXP Interior Extreme Gypsum Panels in accordance with GA-214. Joints between eXP Interior Extreme Gypsum Panels may be finished with paper tape and either ready mix joint compound or setting joint compound. To achieve a "paperless" wall assembly, finish the joints with fiberglass mesh tape and setting compound. In most areas to receive final decoration, skim coating of the entire surface is recommended.

Decoration

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

TECHNICAL DATA

Physical Properties	eXP Interior Extreme IR
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	2.8 lbs/sq ft (13.67 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 140 lbf. (623 N)
Flexural Strength[1], Parallel	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 1/8" (3.2 mm)
Nail Pull Resistance[1]	≥ 90 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)
Bending Radius	8' (2,438 mm)
Thermal Resistance[5]	R = .50
Permeance[6]	19 perms
Water Absorption[1] (% of Weight)	≤ 5%
Surface Water Absorption[1]	≤ 1.6 grams
Linear Expansion with Change Moisture	6.25 x 10^{-6} in/in/%RH
Coefficient of Thermal Expansion	9.26 x 10^{-6} in/in/°F
Mold Resistance[7], ASTM D3273	Score of 10
Mold Resistance[8], ASTM D6329	Pass
Surface Abrasion[9]	Level 3
Indentation[9]	Level 1
Soft-Body Impact[9]	Level 3
Hard-Body Impact[9]	Level 2
Product Standard Compliance	ASTM C1658
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-6
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1629 *Standard Specification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*	
ASTM C1658 *Standard Specification for Glass Mat Gypsum Panels*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM D6329 *Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gypsum Association, GA-253, *Application of Gypsum Sheathing*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
8. Tested in accordance with ASTM D6329.
9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at **goldbondbuilding.com** before use.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum panel board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

LIMITATIONS

- Do not use for exterior applications. eXP Interior Extreme IR Gypsum Panels are intended for interior use only.
- Do not use panels as a nailing base.
- Do not finish joints until building is properly enclosed. It is permissible in pre-rock assemblies to apply level one taping only on vertical applications using setting type joint compound. Do not allow the taped areas to have direct contact with cascading water.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum panels are not recommended where they will be exposed to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312" design thickness) steel stud is required.
- Space supporting framing a maximum of 16" (406 mm) o.c.

Notes

Gypsum Board

Quick Installation Using GridMarX® Guide Marks

1. 100% Recycled Paper
2. Tapered or Square Edge
3. Gypsum Core

Gold Bond® Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural finish, 100% recycled paper on the face and back sides. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth.

Use it for interior, non-fire-rated wall and ceiling applications.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/4" (6.4 mm) and 3/8" (9.5 mm) thick boards are available in 4' (1,219 mm) width and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered or square edges.

BASIC USES

Applications

- **1/4" (6.4 mm)** – Lightweight gypsum board for use over existing interior wall surfaces. Use in double layers to form curved surfaces with short radii.
- **3/8" (9.5 mm)** – Lightweight, low-cost gypsum board for single-layer use on interior walls and ceilings or over existing gypsum board or masonry walls.

Advantages

- Lightweight and cost-efficient material that is compatible with a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Double nailing is an alternate method of attachment devised to minimize nail pops. This system requires doubling up on the field nails. The total quantity of nails used does not double, however, since maximum nail spacing is increased to 12" (305 mm) o.c. and conventional nailing is used on the perimeter. Application is accomplished by first single nailing the field of the board, starting at the center and working toward ends and edges. Another nail is then driven in close proximity (2" [50.8 mm] to 2-1/2" [63.6 mm]) to each of the first nails. The first series of nails are then struck again to ensure the board is drawn tightly to the framing member.
- When using adhesive to attach gypsum board, apply drywall adhesive to the face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

TECHNICAL DATA

Physical Properties	1/4" Gypsum Board	3/8" Gypsum Board
Thickness[1], Nominal	1/4" (6.4 mm)	3/8" (9.5 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)
Weight, Nominal	1.1 lbs/sq ft (5.37 k/m^2)	1.3 lbs/sq ft (6.35 k/m^2)
Edges[1]	Tapered or Square	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 46 lbf. (205 N)	≥ 77 lbf. (343 N)
Flexural Strength[1], Parallel	≥ 16 lbf. (71 N)	≥ 26 lbf. (116 N)
Humidified Deflection[1]	N/A	≤ 15/8" (47.6 mm)
Nail Pull Resistance[1]	≥ 36 lbf. (160 N)	≥ 56 lbf. (249 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	5' (1,524mm)	7'6" (2,286 mm)
Thermal Resistance[5]	N/A	R = .33
Product Standard Compliance	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics		
Core Type	Regular	Regular
UL Type Designation	N/A	N/A
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	15	15
Smoke Development[3]	0	0
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1396 *Standard Specification for Gypsum Board*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*		
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*		
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*		
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*		
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

Curved Surfaces

To apply gypsum board over a curved surface, place a stop at one end of the board and then gently and gradually push on the other end, forcing the center against the framing until the curve is complete. Shorter radii than shown in the accompanying table may be obtained by moistening the face and back papers of the board with water and allowing the water to soak into the core. When the board is dry, it will regain its original hardness.

Apply gypsum board to curved surfaces in accordance with the following:

Gypsum Board Bending Radii		
Board Thickness	**Lengthwise Bending Radii**	**Widthwise Bending Radii**
1/4" (6.4 mm)	5'0" (1,524 mm)	15'0" (4,572 mm)
3/8" (9.5 mm)	7'6" (2,286 mm)	25'0" (7,620 mm)

To achieve tighter bending radii, use 1/4" Gold Bond® High Flex® Gypsum Board.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality gypsum board primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

General

- Not for use in ceiling applications with overlaid insulation.
- Avoid exposure to extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- Apply 1/4" (6.4 mm) gypsum board only to existing surfaces and do not apply directly to framing members, except when used with other thicknesses in double-layer systems tested for specific purposes. Existing walls and ceilings should be sound, flat, level and without void spaces. Apply 1/4" (6.4 mm) thick gypsum board with a combination of nails or screws and adhesive that will bond to the substrate surface covering. Framing spacing should not exceed 24" (610 mm) o.c. Apply adhesive to the substrate between framing members to bond the gypsum board.
- All ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Space framing for single-layer application of 3/8" (9.5 mm) gypsum board a maximum of 16" (406 mm) o.c.

Ceiling-Supported Insulation		
Thickness, Nominal	1/4" (6.4 mm)	3/8" (9.5 mm)
Framing Spacing	24" (610 mm) o.c.	16" (406 mm) o.c.
Weight of Ceiling-Supported Insulation	1.6 psf (7.8 kg/m^2)	None Allowed

High Strength LITE®

Gypsum Board Formulated to be 25% Lighter

1. 100% Recycled Paper
2. Tapered or Square Edge
3. Gypsum Core

Gold Bond® High Strength LITE® Gypsum Board is a gypsum board that is formulated to be 25% lighter than standard 1/2" gypsum board. The result is a superior board that is lighter in weight, sag resistant, and easier to handle.

High Strength LITE® Gypsum Board can be used for walls and ceilings in non-fire rated single layer construction where framing members are spaced up to 24" o.c. Because it can be installed on both walls and ceilings, it eliminates the need for two different types of gypsum board on the job.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® High Strength LITE® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick boards are available in 4' (1,219 mm) width and in standard lengths of 8' (2,438 mm) to 14' (4,267 mm). 1/2" (12.7 mm) thick boards are also available in 54" (1,372 mm) width and in standard lengths of 12' (3,658 mm) to 14' (4,267 mm).

FINISHING

Tapered or square edges.

High Strength LITE® Gypsum Board

BASIC USES

Applications

Use High Strength LITE for walls and ceilings in non-fire-rated construction where framing members are spaced up to 24" (610 mm) o.c.

Advantages

- 25% lighter than standard 1/2" gypsum board, which results in easier handling.
- Excellent working properties, including improved score and snap, reduced dust and improved strength-to-weight ratio.
- Excellent sag resistance. Test results show overall sag resistance on tested assembly to be equivalent to 5/8" Type X gypsum board.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board when installing a polyethylene vapor barrier on ceilings behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

Curved Surfaces

To apply gypsum board over a curved surface, place a stop at one end of the board and then gently and gradually push on the other end, forcing the center against the framing until the curve is complete. Shorter radii than shown in the accompanying table may be obtained by moistening the face and back papers of the board with water and allowing the water to soak into the core. When the board is dry, it will regain its original hardness.

Apply gypsum board to curved surfaces in accordance with the following:

Gypsum Board Bending Radii

Board Thickness	Lengthwise Bending Radii	Widthwise Bending Radii
1/2" (12.7 mm)	10'0" (3,048 mm)	—

To achieve tighter bending radii, use 1/4" Gold Bond® High Flex® Gypsum Board.

TECHNICAL DATA

Physical Properties	High Strength LITE
Thickness[1], Nominal	1/2" (12.7 mm)
Width[1], Nominal	4' (1,219 mm), 54" (1,372 mm)
Length[1,4], Standard	4': 8' – 14' (2,438 mm – 4,267 mm) 54": 12' – 14' (3,657 mm – 4,267 mm)
Weight, Nominal	1.3 – 1.4 lbs/sq ft (6.35 – 6.84 k/m^2)
Edges[1]	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (343 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	10' (3,048 mm)
Thermal Resistance[5]	R = .45
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Regular
UL Type Designation	N/A
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality gypsum board primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

- Avoid exposure to extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Space control joints no more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- All ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Apply 1/2" (12.7 mm) High Strength LITE gypsum board to ceilings to be decorated with water-based spray texture perpendicular to the framing, spaced a maximum of 24" (610 mm) o.c.
- To prevent objectionable sag in gypsum paneled ceilings, the weight of overlaid unsupported insulation should not exceed the following recommendations:

Ceiling-Supported Insulation	
Thickness, Nominal	1/2" (12.7 mm)
Framing Spacing	24" (610 mm) o.c
Weight of Ceiling-Supported Insulation	2.2 psf (10.7 kg/m^2)

Fire-Shield® Gypsum Board

Increased Resistance to Fire

1. 100% Recycled Paper
2. Tapered or Square Edge
3. Gypsum Core

Gold Bond® Fire-Shield® Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face and back sides. The face paper folds around the long edges to reinforce and protect the core, and the ends are cut square and finished smooth.

Fire-Shield Gypsum Board features a Type X core to provide additional fire resistance ratings when used in laboratory tested systems. A specially formulated Type C core is also available when required.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® Fire-Shield® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick Type C boards are available in 4' (1,219 mm) width and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm). 5/8" (15.9 mm) thick Type X and Type C boards are available in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered or square edges.

BASIC USES

Applications

Use 1/2" (12.7 mm) Fire-Shield Type C and 5/8" (15.9 mm) Fire-Shield Type C and Type X Gypsum Boards on walls and ceilings in fire-rated construction where the framing members are spaced up to 24" (610 mm) o.c.

Advantages

- Approved component in specific UL-rated designs.
- Lightweight and cost-efficient material that is compatible with a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- 5/8" Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12®, the 12" o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit **MaX12.com** for more information.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces,

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TECHNICAL DATA

Physical Properties	1/2" Fire-Shield C	5/8" Fire-Shield X	5/8" Fire-Shield C
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm), 54" (1,372 mm)	4' (1,219 mm), 54" (1,372 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	1.9 lbs/sq ft (9.28 k/m^2)	2.2 lbs/sq ft (10.74 k/m^2)	2.3 lbs/sq ft (11.23 k/m^2)
Edges[1]	Tapered or Square	Tapered or Square	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (387 N)	≥ 87 lbf. (387 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	10' (3,048 mm)	15' (4,572 mm)	15' (4,572 mm)
Thermal Resistance[5]	R = .45	R = .56	R = .56
Product Standard Compliance	ASTM C1396	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics			
Core Type	Type C	Type X	Type C
UL Type Designation	FSW-C	FSW	FSW-C
Combustibility[2]	Non-combustible Core	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A	Class A
Flame Spread[3]	15	15	15
Smoke Development[3]	0	0	0
Applicable Standards and References			
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*			
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*			
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*			
ASTM C1396 *Standard Specification for Gypsum Board*			
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*			
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*			
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*			
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*			
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*			
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*			
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*			

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

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by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

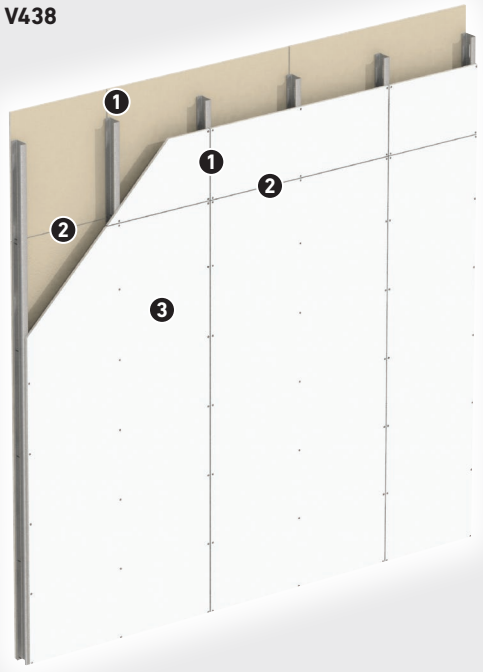
General

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- Space supporting framing for single-layer application of 1/2" (12.7 mm) and 5/8" (15.9 mm) gypsum board a maximum of 24" (610 mm) o.c.
- To prevent objectionable sag in gypsum board ceilings, the weight of overlaid, unsupported insulation should not exceed the following recommendations:

Ceiling-Supported Insulation			
	Type C	**Type X**	**Type C**
Thickness, Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
Framing Spacing	24" (610 mm) o.c.	24" (610 mm) o.c.	24" (610 mm) o.c.
Weight of Ceiling-Supported Insulation	1.3 psf (6.3 kg/m^2)	2.2 psf (10.7 kg/m^2)	2.3 psf (11.2 kg/m^2)

1-HR. PARTITION

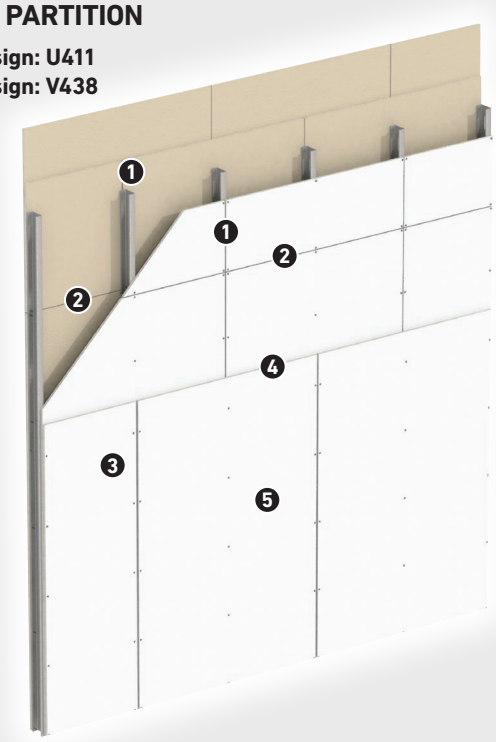
UL Design: U465
UL Design: V438



1. Stagger vertical joints over one-stud cavity on opposite sides of partition.
2. No need to stagger horizontal joints or back by framing.
3. 5/8" Fire-Shield® Gypsum Board

2-HR. PARTITION

UL Design: U411
UL Design: V438



1. Stagger vertical joints over one-stud cavity on opposite sides of partition.
2. No need to stagger horizontal joints or back by framing.
3. Stagger vertical joints over one-stud cavity between base and face layers.
4. Stagger horizontal joints 12" (305 mm) minimum between base and face layers.
5. Two layers 5/8" Fire-Shield® Gypsum Board

High Strength Fire-Shield 30®

30% Lighter than Standard 5/8" Type X Gypsum Board

1. 100% Recycled Paper
2. Tapered or Square Edge
3. Gypsum Core

Note: This is a non-Type X product and is not a substitute for Type X gypsum board. The High Strength Fire-Shield 30 product is for single layer gypsum board construction for approved 30-minute assemblies. The face of the board and the product end tapes are clearly labeled so the installer can identify this product for the appropriate application.

Gold Bond® High Strength Fire-Shield 30® Gypsum Board consists of a fire-resistant, non-Type X gypsum core specially formulated to be 30% lighter than standard Type X gypsum board.

High Strength Fire-Shield 30 is approved for single layer gypsum board construction for 30-minute fire-rated or non-rated assemblies and is encased in heavy, natural-finish, 100% recycled paper on the face and back sides. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® High Strength Fire-Shield 30® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) and 54" (1,372 mm) widths and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered or square edges.

BASIC USES

Applications

Use High Strength Fire-Shield 30 Gypsum Board for single-layer construction in 30 minute fire-rated or non-rated assemblies.

Advantages

- Features a fire-resistant non-Type X core and is UL Classified and approved for inclusion on specific UL fire-rated designs.
- 30% lighter than standard 5/8" (15.9 mm) Type X gypsum board, which results in easier handling.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- Excellent working properties, including score and snap, reduced dust and improved strength-to-weight ratio.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality gypsum board primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

TECHNICAL DATA

Physical Properties	High Strength Fire-Shield 30
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm) 54" (1,372 mm)
Length[1,4], Standard	8' – 12' (2,438 mm – 3,658 mm)
Weight, Nominal	1.6 – 1.8 lbs/sq ft (7.81 – 8.79 k/m^2)
Edges[1]	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	15' (4,572 mm)
Thermal Resistance[5]	R = .56
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Non-Type X
UL Type Designation	FSL30
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

LIMITATIONS

- Do not substitute High Strength Fire-Shield 30 for Type X gypsum board as 5/8" High Strength Fire-Shield 30 is not classified as a Type X.
- Avoid exposure to extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints no more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- Space supporting framing for single-layer application of 5/8" (15.9 mm) gypsum board a maximum of 24" (610 mm) o.c.
- To prevent objectionable sag in gypsum paneled ceilings, the weight of overlaid unsupported insulation should not exceed the following recommendations:

Ceiling-Supported Insulation	
Thickness, Nominal	5/8" (15.9 mm)
Framing Spacing	24" (610 mm) o.c
Weight of Ceiling-Supported Insulation	2.2 psf (10.7 kg/m^2)

High Strength Fire-Shield 60®

20% Lighter than Standard Type X Gypsum Board

1. 100% Recycled Paper
2. Tapered or Square Edge
3. Gypsum Core

Gold Bond® High Strength Fire-Shield 60® Gypsum Board consists of a fire-resistant, Type X gypsum core specially formulated to be 20% lighter than standard Type X gypsum board.

It is encased in heavy, natural-finish, 100% recycled paper on the face and back sides. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth.

High Strength Fire-Shield 60 Gypsum Board features a Type X core to provide additional fire resistance ratings when used in specific UL designs.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® High Strength Fire-Shield 60® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) and 54" (1,372 mm) widths and in standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered or square edges.

BASIC USES

Applications

Use 5/8" (15.9 mm) High Strength Fire-Shield 60 Gypsum Board for walls and ceilings in fire-rated construction where the framing members are spaced up to 24" (610 mm) o.c.

Advantages

- Approved component in specific UL-rated designs.
- 20% lighter than standard 5/8" (15.9 mm) Type X gypsum board, which results in easier handling.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- Excellent working properties, including score and snap, reduced dust and improved strength-to-weight ratio.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- 5/8" Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12®, the 12" o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with Max 12. Visit **MaX12.com** for more information.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board when installing a polyethylene vapor barrier on ceilings behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	High Strength Fire-Shield 60
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm) 54" (1,372 mm)
Length[1,4], Standard	8' – 12' (2,438 mm – 3,658 mm)
Weight, Nominal	1.7 lbs/sq ft (8.3 k/m^2)
Edges[1]	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	15' (4,572 mm)
Thermal Resistance[5]	R = .56
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSLX
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality gypsum board primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

- Avoid exposure to extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints no more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- UL Type FSLX requires the use fiberglass insulation for single-layer, steel stud UL fire-rated wall assemblies.
- To prevent objectionable sag in gypsum paneled ceilings, the weight of overlaid unsupported insulation should not exceed the following recommendations:

Ceiling-Supported Insulation	
Thickness, Nominal	5/8" (15.9 mm)
Framing Spacing	24" (610 mm) o.c
Weight of Ceiling-Supported Insulation	2.2 psf (10.7 kg/m^2)

Ultra-Shield FS® Gypsum Board

For Single Layer – Steel Stud and Cavity Shaftwall Systems

1. 100% Recycled Paper
2. Tapered Edge
3. Gypsum Core

Gold Bond® Ultra-Shield FS® Gypsum Board is 3/4" thick and consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face and back sides. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth.

Use it for 2- and 3-hour wall partitions, and 2-hour cavity shaftwall assemblies to reduce material and installation labor.

The Ultra-Shield core allows one layer of 3/4" Ultra-Shield FS to replace two layers of 5/8" Type X, or two layers of 3/4" Ultra-Shield FS to replace three layers of 5/8" Type X, in specific UL assemblies. Gold Bond® XP® Ultra-Shield FS Gypsum Board with mold, mildew and moisture resistance is available by special order.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Ultra-Shield FS® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

3/4" (19.1 mm) thick boards are available in 4' (1,219 mm) width and standard lengths of 8' (2,438 mm) to 12' (3,658 mm) lengths.

FINISHING

Tapered edge.

BASIC USES

Applications

Use 3/4" Ultra-Shield FS Gypsum Board to achieve increased resistance to fire and sound transmission reduction.

Advantages

- Reduces labor and material costs by using fewer layers (up to 10%).
- UL Classified for fire resistance, surface-burning characteristics and non-combustibility.
- Cost-efficient material that readily accepts a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality gypsum board primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

TECHNICAL DATA

Physical Properties	Ultra-Shield FS
Thickness[1], Nominal	3/4" (19.1 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 mm – 3,658 mm)
Weight, Nominal	2.85 lbs/sq ft (13.91 k/m^2)
Edges[1]	Tapered
Flexural Strength[1], Perpendicular	≥ 167 lbf. (743 N)
Flexural Strength[1], Parallel	≥ 56 lbf. (249 N)
Humidified Deflection[1]	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 97 lbf. (432 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	N/A
Thermal Resistance[5]	R = .64
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	Ultra-Shield
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

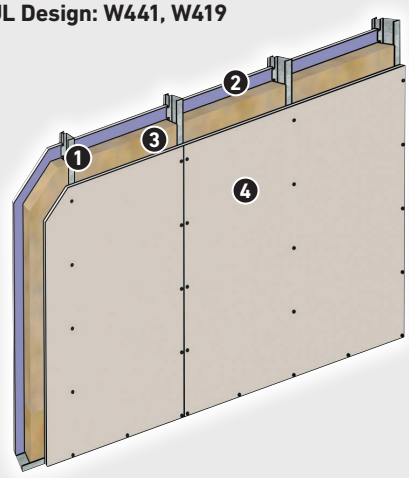
LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints on single layer, or on the face layer on two-layer applications within 12" (305 mm) of the corners of window or door frames unless installing control joints at the door frame corners.
- Space supporting framing for single-layer application of 3/4" (19.1 mm) gypsum board a maximum of 24" (610 mm) o.c.

Fire-Rated Assembly Drawings

2-HOUR SHAFTWALL PARTITION

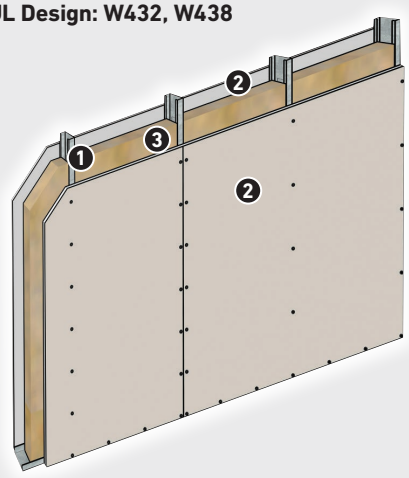
UL Design: W441, W419



1. 4" C-T or C-H studs 24" o.c.
2. 1" eXP® Shaftliner
3. 3" mineral wool insulation
4. 3/4" Ultra-Shield FS® Gypsum Board

2-HOUR PARTITION

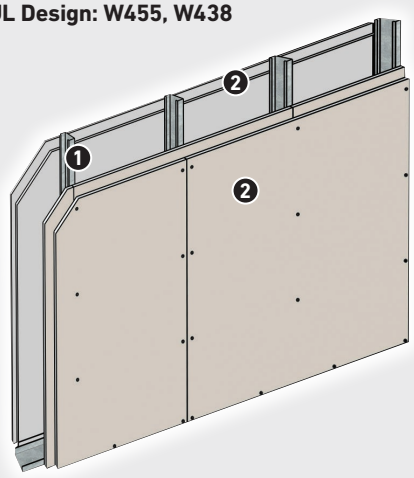
UL Design: W432, W438



1. 3-5/8" steel studs 24" o.c.
2. 3/4" Ultra-Shield FS® Gypsum Board 3" mineral wool insulation

3-HOUR PARTITION

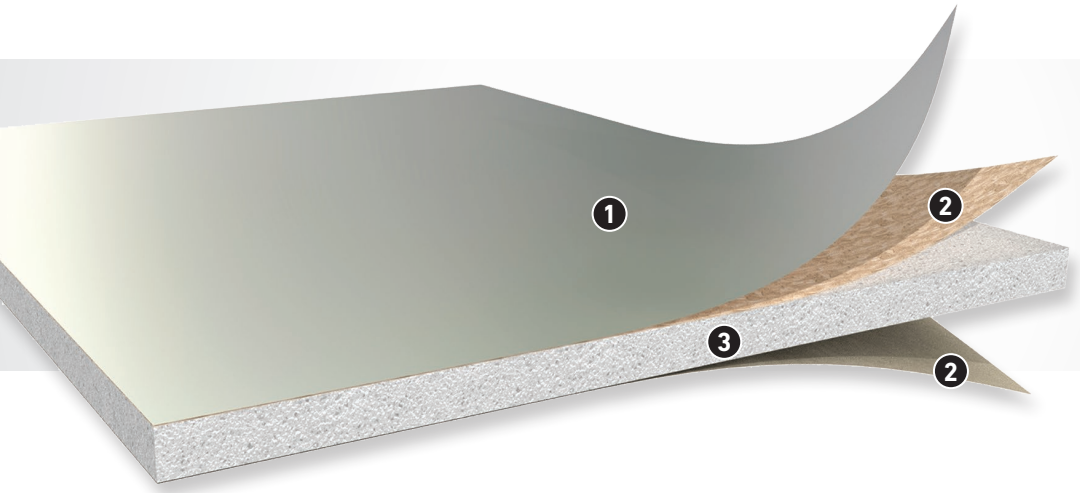
UL Design: W455, W438



1. 1-5/8" steel studs 24" o.c.
2. Two layers of 3/4" Ultra-Shield FS® Gypsum Board Gypsum Board

Foil Back Gypsum Board

Foil Vapor Retarder to Prevent Condensation



1. Foil Vapor Retarder Backing
2. 100% Recycled Paper
3. Gypsum Core

Gold Bond® Foil Back Gypsum Board consists of a fire-resistant gypsum core encased in heavy, natural-finish, 100% recycled paper on the face side and a strong liner paper on the back side. A Type III aluminum foil vapor retarder, laminated to the back surface, is designed to prevent condensation from occurring within the wall cavity.

Use it on the interior face of exterior walls and ceilings in new construction and remodeling with furred masonry, wood or steel framing. It is effective for single-layer applications and as a base layer in double-layer applications that require a vapor retarder of 0.1 perm or less.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® Foil Back Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick boards are available in 4' (1,219 mm) width and are available in standard lengths of 8' (2,438 mm) to 16' (4,877 mm). 5/8" (15.9 mm) thick boards are available in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 16' (4,877 mm).

FINISHING

Tapered or square edge.

BASIC USES

Applications

Use 1/2" (12.7 mm) Foil Back Gypsum Board for the interior face of exterior walls and ceilings where a vapor retarder is required. Also use it in non-fire-rated construction where framing members are spaced up to 24" (610 mm) o.c.

Use 5/8" (15.9 mm) Foil Back Gypsum Board where enhanced fire safety and sound transmission performance are desired.

Advantages

- Optimal vapor retarder that prevents condensation from occurring in the wall cavity. In accordance with ASTM E96.
- All-in-one board reduces installation steps and offers labor savings.
- Versatile product that is appropriate for use on virtually all exterior wall and ceiling construction: wood frame, steel frame and furred masonry.
- Excellent working properties, including score and snap, reduced dust and improved strength-to-weight ratio.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

Foil Back Gypsum Board Installation

To maintain the performance of Foil Back Gypsum Board, repair damaged foil area using foil tape prior to installing gypsum board.

To minimize airflow, seal penetrations, such as outlets and switches, using pads or caulk.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

TECHNICAL DATA

Physical Properties	1/2" Foil Back	5/8" Foil Back
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm), 54" (1,372 mm)
Length[1,4], Standard	8' – 16' (2,438 mm – 4,877 mm)	8' – 16' (2,438 mm – 4,877 mm)
Weight, Nominal	1.6 lbs/sq ft (7.81 k/m^2)	2.2 lbs/sq ft (10.74 k/m^2)
Edges[1]	Tapered or Square	Tapered or Square
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Thermal Resistance[5]	R = .45	R = .56
Permeance[6]	< 0.1 perms	< 0.1 perms
Product Standard Compliance	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics		
Core Type	Regular	Type X
UL Type Designation	N/A	FSW
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	15	15
Smoke Development[3]	0	0
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1396 *Standard Specification for Gypsum Board*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*		
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*		
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*		
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*		
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*		
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.

Critical Lighting Areas

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

- Do not use over kraft-faced insulation or other vapor retarders.
- Do not use as a base for adhesively applied vinyl or other highly water-vapor resistant wall coverings.
- Do not use as a base for ceramic or other tile or as a base layer for prefinished vinyl wall panels in double-layer assemblies.
- Do not use Foil Back Gypsum Board in hot, humid climates, such as the southern Atlantic and Gulf Coast areas.
- Do not laminate the foil surface of Foil Back to any surface.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- Space supporting framing for single-layer application of 1/2" (12.7 mm) and 5/8" (15.9 mm) gypsum board a maximum of 24" (610 mm) o.c.
- To prevent objectionable sag in gypsum board ceilings, the weight of overlaid, unsupported insulation should not exceed the following recommendations:

Ceiling-Supported Insulation		
	Regular	**Type X**
Thickness, Nominal	1/2" (12.74 mm)	5/8" (15.9 mm)
Framing Spacing	24" (610 mm) o.c.	24" (610 mm) o.c.
Weight of Ceiling-Supported Insulation	1.3 psf (6.3 kg/m^2)	2.2 psf (10.7 kg/m^2)

High Flex® Gypsum Board

Ideal for Curved Walls and Ceilings

1. 100% Recycled Paper
2. Slightly Tapered Edge
3. Gypsum Core

Gold Bond® High Flex® Gypsum Board panels consist of a fire-resistant gypsum core encased in heavy, natural-finish paper on the face side and strong liner paper on the back side. The face paper is folded around the long edges to reinforce and protect the core, and the ends are square-cut and finished smooth. Long edges of panels are slightly tapered allowing joints to be reinforced and concealed with joint tape and compound.

High Flex Gypsum Board is specifically designed for radius construction such as curved walls, archways and stairways. It can be used for both concave and convex surfaces. High Flex Gypsum Board is typically applied in double layers.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® High Flex® Gypsum Board has achieved UL GREENGUARD Gold Certification.

SIZES

1/4" (6.4 mm) thick boards are available in 4' (1,219 mm) width and standard length of 8' (2,438 mm) and special order lengths of 9' (2,743 mm), 10' (3,048 mm) and 12' (3,658 mm).

FINISHING

Slightly tapered edge.

BASIC USES

Applications

Use High Flex Gypsum Board for curved surfaces in non-rated assemblies, such as curved walls, arches and vaulted ceilings. Use it for both concave and convex surfaces. Apply it in double layers.

Advantages

- Lightweight, cost-efficient flexible material that conforms to curved profiles and is compatible with a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Features the GridMarX® preprinted fastening guide on the board to allow for faster and more accurate installation.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4" (102 mm) increments. Marks run along the edge in both tapers and at 16" (406 mm), 24" (610 mm) and 32" (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

High Flex Gypsum Board Installation

- To prevent flat spots, space framing members closer together than required for typical flat wall and ceiling surfaces.
- For concave surfaces: Apply a stop to one end of the curve to restrain one end or edge of the board while installing. Apply pressure to unrestrained end or edge of the gypsum board, forcing the field of the gypsum board into firm contact with the framing. Fasten gypsum board by working from the "stopped" end or edge. Hold gypsum board tightly against the framing while driving fasteners.
- For convex surfaces: Attach one end of the gypsum board to the framing with nails or screws. Progressively push gypsum board into contact with the framing members, working from the fixed end to the free end. Hold gypsum board tightly against each framing member while driving fasteners.

TECHNICAL DATA

Physical Properties	High Flex
Thickness[1], Nominal	1/4" (6.4 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1,4], Standard	8' (2,438 mm)
Weight, Nominal	0.95 lbs/sq ft (4.64 k/m^2)
Edges[1]	Slightly Tapered
Flexural Strength[1], Perpendicular	≥ 46 lbf. (205 N)
Flexural Strength[1], Parallel	≥ 16 lbf. (71 N)
Humidified Deflection[1]	N/A
Nail Pull Resistance[1]	≥ 36 lbf. (160 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)
Bending Radius	Refer to chart on next page.
Thermal Resistance[5]	N/A
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	N/A
UL Type Designation	N/A
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	15
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

Curved Surfaces

To apply gypsum board over a curved surface, place a stop at one end of the board and then gently and gradually push on the other end, forcing the center against the framing until the curve is complete. To achieve shorter radii than shown in the accompanying table, moisten the face and back papers of the board with water, stacking on a flat surface, and allowing the water to soak into the core. When the board is dry, it will regain its original hardness.

Apply High Flex Gypsum Board to curved surfaces in accordance with the following:

High Flex Bending Radii

Application	Minimum Bending Radii	Maximum Stud Spacing
Lengthwise		
Inside (Concave) Dry	32" (813 mm)	9" (229 mm) o.c.
Outside (Convex) Dry	30" (762 mm)	9" (229 mm) o.c.
Inside (Concave) Wet	20" (508 mm)	9" (229 mm) o.c.
Outside (Convex) Wet	14" (356 mm)	6" (152 mm) o.c.
Widthwise		
Inside (Concave) Dry	20" (508 mm)	9" (229 mm) o.c.
Outside (Convex) Dry	15" (381 mm)	8" (203 mm) o.c.
Inside (Concave) Wet	10" (254 mm)	6" (152 mm) o.c
Outside (Convex) Wet	7" (178 mm)	5" (127 mm) o.c.

Lengthwise denotes long edges perpendicular to the framing members. Widthwise denotes long edges parallel to the framing members. The values listed above were achieved at 65˚F and 45% relative humidity. Lower temperatures and lower humidity will decrease the flexibility.

Wetting the boards is only required on extremely tight radii, or when temperature and humidity conditions are lower than 65˚F and 45% relative humidity. When wetting the boards, apply 10-15 ounces of clean water per side with a paint roller or sprayer. Allow to soak for 10-15 minutes before bending.

Finishing

Refer to GA-214, *Levels of Finish for Gypsum Panel Products*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to ensure a surface properly prepared to accept the desired decoration.

Critical Lighting Areas

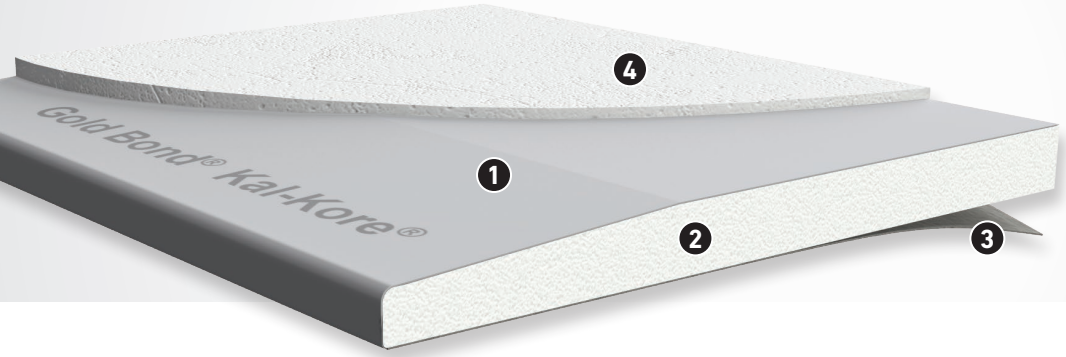
Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125˚F (52˚C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- Space supporting framing for single-layer application of 1/2" (12.7 mm) and 5/8" (15.9 mm) gypsum board a maximum of 24" (610 mm) o.c.

Kal-Kore® Plaster Base

For Single-Layer Applications in Residential or Commercial Construction



1. Absorptive Face Paper
2. Gypsum Core
3. 100% Recycled Back Paper
4. Kal-Kote Basecoat, Uni-Kal or X-KALibur

Gold Bond® Kal-Kore® Plaster Base is a tapered edge gypsum plaster base with a 100% recycled absorptive face paper surface designed to permit rapid trowel application of Gypsolite® Plaster or Two-Way Hardwall Plaster. Use Kal-Kore® Fire-Shield® Plaster Base in specific fire-rated assemblies.

Kal-Kore Plaster Base and veneer plaster systems may be specified for virtually all types of partition and ceiling constructions, including wood or steel framing, furring and masonry. For both residential and commercial buildings, both two-coat and one-coat veneer plaster systems produce a wall more resistant to nail-pops.

GridMarX® are printed on the face paper surface to help installers instantly identify stud locations and make accurate cuts without having to pencil in or snap chalk lines.

Gold Bond® Kal-Kore® Plaster Base has achieved UL GREENGUARD Gold Certification.

SIZES

3/8" (9.5 mm) Kal-Kore® Plaster Base:
Available in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

1/2" (12.7 mm) Kal-Kore® LITE Plaster Base:
Available in 4' (1,219 mm) width and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

1/2" (12.7 mm) Kal-Kore® Fire-Shield C™ Plaster Base:
Available in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

5/8" (15.9 mm) Kal-Kore® Fire-Shield C™ Plaster Base:
Available in 4' (1,219 mm) width and standard lengths of 8' (2,428 mm) to 12' (3,658 mm).

5/8" (15.9 mm) Kal-Kore® Fire-Shield® Plaster Base, Type X:
Available in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 12' (3,658 mm).

FINISHING

Tapered edge.

KAL-KORE® PLASTER BASE

BASIC USES

Applications

Kal-Kore Plaster Base and veneer plaster systems may be specified for most types of partition and ceiling assemblies, including wood and steel framing, furring and masonry.

3/8" (9.5 mm) Kal-Kore (regular core) – For construction with framing members spaced 16" (406 mm) o.c.

1/2" (12.7 mm) Kal-Kore LITE – For non-fire-rated construction with framing members spaced up to 24" (610 mm) o.c.; sag resistant.

5/8" (15.9 mm) Kal-Kore Fire-Shield and 1/2" (12.7 mm) and 5/8" (15.9 mm) Kal-Kore Fire-Shield C – For walls and ceilings in fire-rated construction where the framing members are spaced up to 24" (610 mm) o.c.

Advantages

- Provides a smooth and durable base for plaster over which paint may be applied.
- Provides the appearance and surface of conventional plaster at a lower cost.
- Provides a strong bond for the application of Kal-Kote Basecoat Plaster, Uni-Kal and X-KALibur Veneer Plasters as well as Gypsolite Plaster.
- Can use on walls and ceilings. Can install 5/8" Kal-Kore on ceilings with 24" (610 mm) o.c. framing at right angles to framing members.
- Fire-resistant material with a gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Expansion and contraction under normal atmospheric changes are negligible.
- Achieves UL GREENGUARD or GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

General

- Install plaster base in accordance with methods described in ASTM C844.
- Examine and inspect framing materials to which plaster base is to be applied. Remedy all defects prior to installation of the plaster base.
- Apply plaster base first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that a minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation before the plaster base when installing a polyethylene vapor barrier on ceilings behind the plaster base. Install the insulation immediately after the plaster base when using loose fill insulation. Avoid installation practices that might allow condensation to form behind the base.
- Locate plaster base joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold plaster base in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the plaster base. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of plaster base.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the plaster base and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

TECHNICAL DATA

Physical Properties	3/8" Kal-Kore	1/2" Kal-Kore LITE	1/2" Kal-Kore Fire-Shield C	5/8" Kal-Kore Fire-Shield X	5/8" Kal-Kore Fire-Shield C
Thickness[1], Nominal	3/8" (9.5 mm)	1/2" (12.7 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm) 54" (1,372 mm)	4' (1,219 mm)	4' (1,219 mm) 54" (1,372 mm)	4' (1,219 mm) 54" (1,372 mm)	4' (1,219 mm)
Length[1,4], Standard	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)
Weight, Nominal	1.3 lbs/sq ft (6.35 k/m^2)	1.4 – 1.5 lbs/sq ft (6.84 – 7.32 k/m^2)	1.9 lbs/sq ft (9.28 k/m^2)	2.2 lbs/sq ft (10.74 k/m^2)	2.3 lbs/sq ft (11.23 k/m^2)
Edges[1]	Tapered	Tapered	Tapered	Tapered	Tapered
Flexural Strength[1], Perpendicular	≥ 77 lbf. (343 N)	≥ 107 lbf. (476 N)	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 26 lbf. (116 N)	≥ 36 lbf. (160 N)	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 15/8" (48 mm)	≤ 10/8" (31.8 mm)	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 56 lbf. (249 N)	≥ 77 lbf. (343 N)	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	7'6" (2,286 mm)	10' (3,048 mm)	10' (3,048 mm)	15' (4,572 mm)	15' (4,572 mm)
Thermal Resistance[5]	R = .33	R = . 45	R = .45	R = .56	R = .56
Product Standard Compliance	ASTM C1396	ASTM C1396	ASTM C1396	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics					
Core Type	Regular	Regular	Type C	Type X	Type C
UL Type Designation	N/A	N/A	FSK-C	FSK	FSK-C
Combustibility[2]	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A	Class A	Class A	Class A
Flame Spread[3]	15	15	15	15	15
Smoke Development[3]	0	0	0	0	0
Applicable Standards and References					
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*					
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*					
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*					
ASTM C844 *Standard Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster*					
ASTM C1396 *Standard Specification for Gypsum Board*					
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*					
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*					
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*					
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*					
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*					
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*					

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

Single-Layer Application Spacing for Framing		
Framing Type	**Kal-Kore Thickness**	**Maximum Spacing**
Wood	1/2" (12.7 mm)	24" (610 mm) o.c.
Wood	5/8" (15.9 mm)	24" (610 mm) o.c.
Metal Studs w/Furring	1/2" (12.7 mm)	16" (406 mm) o.c.
Metal Studs w/Furring	5/8" (15.9 mm)	24" (610 mm) o.c.

Bound edge must be at right angles to ceiling joists.

JOINT TREATMENT

Paper Tape Method

- Trowel Kal-Kote Basecoat, Uni-Kal or X-KALibur over joint line, filling the channel formed by the tapered edges of the Kal-Kore in an even fashion.
- Center drywall paper tape over the joint line and embed the tape into the soft plaster using a trowel and level the joint. Tape the full length of the joint.
- Allow the treated joints to set prior to general plaster application.

Setting Compound Method

- Mix setting compound per instructions. Do not contaminate compound with other materials, dirty water or previous mixes. Do not retemper mix.
- Apply setting compound to joint by hand or machine tool. Center drywall paper tape over the joint line and embed into the soft compound. Do not over-trowel to a slick surface. Leave the surface rough to provide mechanical keying of the plaster.
- Allow the treated joints to set and dry prior to general plastering.

Veneer Plaster Tape Method

- Do not use self-adhering mesh.
- Center and secure Kal-Mesh® Veneer Plaster Tape over all joints and interior angles with 1/4" (6.4 mm) or 5/16" (7.9 mm) staples.
- Position staples a maximum of 24" (610 mm) apart as follows:

  Joints: at alternate edges for the run, from end to end and directly opposite one another at either end.

  Angles: along ceiling edge only for wall-to-ceiling angles. Along one edge for wall-to-wall angles.
- After the first staples are placed at the end of a joint or angle, pull unstapled Kal-Mesh tape as stapling proceeds to ensure that it will lie flat against the Kal-Kore.
- Allow treated joints to set prior to general veneer plaster application.

Veneer Plaster Application

Apply veneer plaster over Kal-Kore using one of the following application types:

- Kal-Kote Basecoat over Kal-Kore and smooth finish coat of Kal-Kote Smooth Finish, Uni-Kal or X-KALibur over basecoat, trowel finished.
- Kal-Kote Basecoat over Kal-Kore and texture coat consisting of Uni-Kal or X-KALibur with silica sand over basecoat, float finished.
- Single smooth finish coat of Uni-Kal or X-KALibur, trowel finished.

DECORATION

Jobsite conditions of temperature and humidity, mineral content of water and variances in aggregates often cause shading discoloration of the plaster. Therefore, the veneer plaster should not be considered a finished product. Plaster should be painted or decorated in some other manner. Consult paint manufacturers as to compatible products. Gold Bond Building Products recommends alkali-resistant primers formulated for use over new plaster.

Painting Plaster

Various job conditions, such as suction differences, wet or only partially dry walls and reactions between paint and lime, may cause unsatisfactory paint finishes, particularly on new construction.

Alkali-resistant primers specifically formulated for use over new plaster will permit decorating with oil- or latex-type paints.

Use quality paint products and follow paint manufacturer's recommendations. Finished plaster should be painted or covered to conceal possible discoloration. The paint system should be suitable for use over plaster surfaces that contain lime, which has a high pH of 10–13.

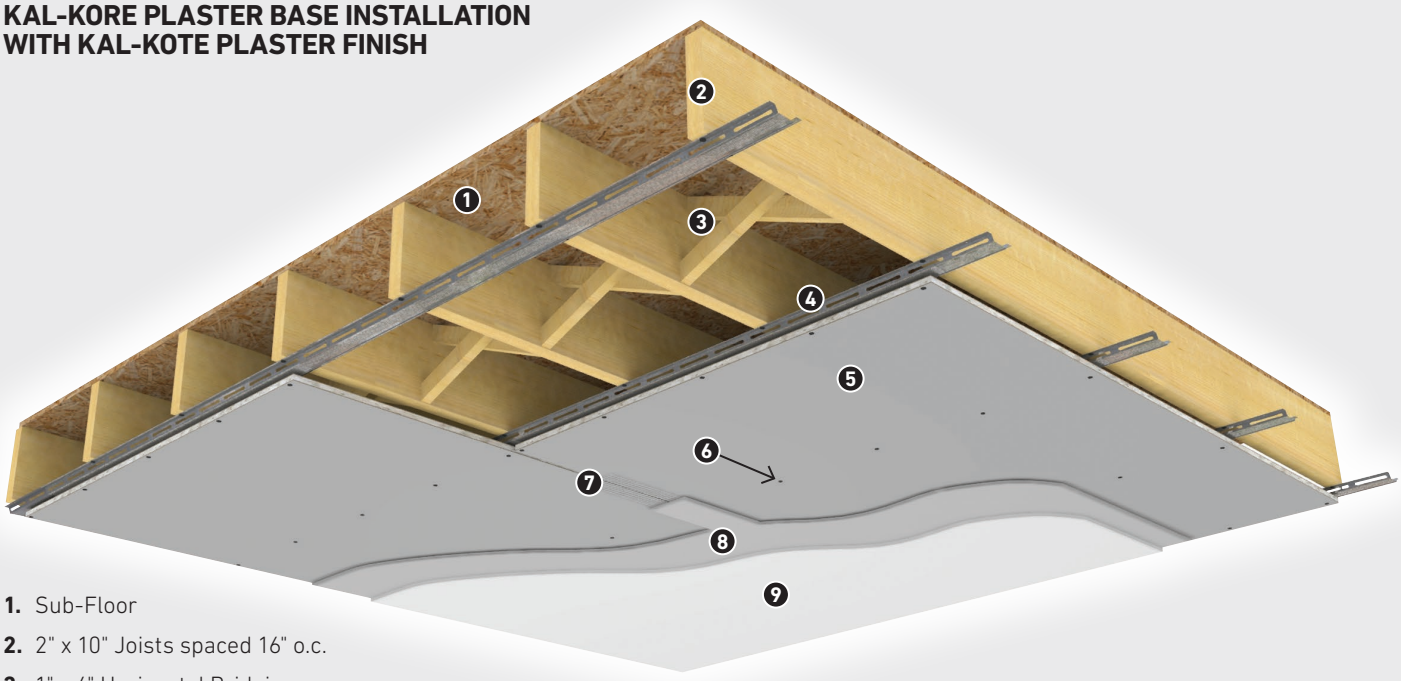
It is essential that plaster be sound and completely dry before painting. Under good drying conditions, you may paint veneer plaster 48 hours after application.

High build, heavy duty and special purpose coatings, such as epoxy, are not recommended over veneer or job-gauged lime putty finishes. Kal-Kore Basecoat can also be used for conventional plaster systems. In all cases, the paint manufcaturer should be consulted and approve paint system suitability for use with gypsum/lime finish plaster.

LIMITATIONS

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not use plaster base where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Use in interior applications only. Not intended for use without application of recommended plaster finish coats and paint or other finishes.
- If required, install a vapor retarder behind plaster base. Properly ventilate or condition spaces to remove moisture buildup during plaster application.
- Do not allow weight to exceed 2.2 psf (10.7 kg/m^2) when installing ceiling insulation above plaster base. Apply insulation and polyethylene vapor barrier (if used) before installation.
- Do not sand finished plaster.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind plaster base.
- Avoid installing plaster base directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate plaster base from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30' (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid plaster base joints within 12" (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- All ends and edges of plaster base should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.

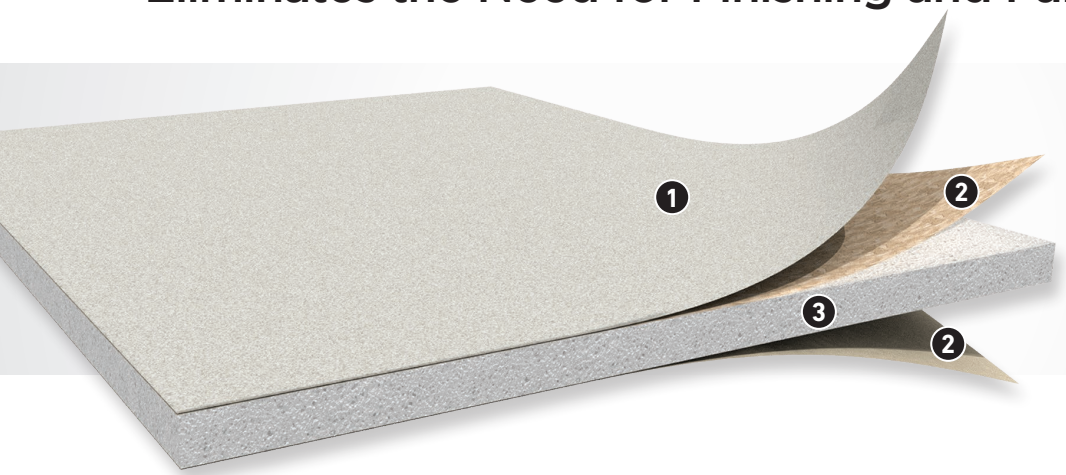
KAL-KORE PLASTER BASE INSTALLATION WITH KAL-KOTE PLASTER FINISH



1. Sub-Floor
2. 2" x 10" Joists spaced 16" o.c.
3. 1" x 4" Horizontal Bridging
4. Furring Channel
5. 1/2" Gold Bond® Kal-Kore® Fire-Shield C™ Plaster Base
6. Screws spaced 12" o.c.
7. Mesh Tape
8. Gold Bond® Kal-Kote® Basecoat Plaster
9. Gold Bond® Kal-Kote® Smooth Finish Plaster or Gold Bond® Kal-Kote® Texture Finish Plaster

Durasan® Prefinished Gypsum Board

Eliminates the Need for Finishing and Painting



1. Vinyl Covering
2. 100% Recycled Paper
3. Fire-Resistant Gypsum Core

Gold Bond® Durasan® Prefinished Gypsum Board consists of a fire-resistant gypsum core encased in heavy, 100% recycled paper on the face and back sides and a decorative vinyl covering over the face paper. The long edges are beveled and wrapped with decorative vinyl.

Apply Durasan directly to metal or wood studs or as a finish layer over gypsum board. It is ideal for most demountable partition systems. Durasan eliminates the need for joint treatment and paint, resulting in time and labor savings.

SIZES

1/2" (12.7 mm) thick Regular boards are available in 4' (1,219 mm) width and standard lengths of 8' (2,438 mm) to 10' (3,048 mm). 5/8" (15.9 mm) thick Type X boards are available as special order in 4' (1,219 mm) and 54" (1,372 mm) widths and standard lengths of 8' (2,438 mm) to 10' (3,048 mm). Special lengths may be available.

FINISHING

The long edges are wrapped with a vinyl covering. Panel edges are beveled. Vinyl-covered Durasan panels comply with ASTM Specification C1396.

PATTERN AND COLOR SELECTION

Group 1 – Stipple

Champagne

Chiffon

Off White

Cloud

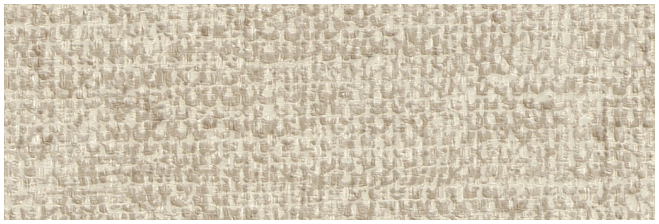
Group 2 – Santa Fe

Porcelain

Adobe

Group 3 – Harvest

Cotton



Oyster White

Rice

Color accuracy of Durasan panel patterns is limited in printing/digital versions. Contact your sales representative for samples.

BASIC USES

Applications

Apply Durasan directly to studs or as a finish layer over gypsum board. It is ideal for most demountable partition systems.

Advantages

- Prefinished Durasan eliminates the need for joint treatment or paint, resulting in time and labor savings.
- Offers a wide variety of stylish patterns and colors.
- Color permanence: The high-quality vinyl surface offers good fade resistance. The vinyl films are specifically formulated with light-stable compounds and pigments to provide maximum stability and color retention under varying environmental conditions.
- Durasan Vinyl Gypsum Boards are extremely abrasion resistant when tested in accordance with ASTM D1044.
- Durasan 5/8" (15.9 mm) Type X Gypsum Board has a specially formulated core, providing superior fire-resistive performance when used in specific fire-rated assemblies.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212˚F (100˚C) until completely calcined, a slow process.
- Scores and snaps easily to exact size without sawing.

Accessories

- **One-piece trims:** For 1/2" (12.7 mm) boards only. Matching vinyl laminated to an extruded vinyl form. Outside and inside corners; end cap; divider.
- **Two-piece trims:** For 1/2" (12.7 mm) and 5/8" (15.9 mm) boards. Matching vinyl laminated to extruded vinyl, which is then attached to a steel retainer. Snap-on corners; snap-on interior trims.
- Matching vinyl roll goods.

Abrasion Resistance

Tested in accordance with ASTM D1044, Durasan withstands over 10,000 revolutions without breaking through the vinyl film.

INSTALLATION RECOMMENDATIONS

General

- Install gypsum boards in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects before installing the gypsum board.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum boards in firm contact with the framing member while driving fasteners. Take care to avoid breaking the facer of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum boards, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual*.

Installation of Durasan Prefinished Gypsum Board

There are several methods for installing Durasan products in order to meet specific job requirements. As in regular gypsum board construction, install ceilings first, before erecting Durasan Boards. Attach boards vertically. Do not apply Durasan to ceilings.

- **Adhesive Nail-On:** To avoid visible fasteners on exposed surfaces, apply Durasan panels to metal or wood studs or furring with adhesive. Prebow Durasan panels overnight with the vinyl surface concave.
- You may use many water-based adhesives to install Durasan Prefinished Gypsum Boards. All adhesives you use to install Durasan in non-fire-rated assemblies should meet ASTM C557. Some solvent-based adhesives could cause vinyl surfaces to delaminate and/or discolor. Check the adhesive manufacturer's recommendations before using with Durasan. Before applying, subject adhesive should be test laminated to actual framing or backing.
- Apply adhesive to metal or wood studs or furring in a continuous 1/4" (6.4 mm) bead or intermittent 1/4" (6.4 mm) beads 3" (76.2 mm) long, 6" (152 mm) apart. Where board edges abut, apply two parallel beads, one along each edge of the framing member. Press the board firmly in place against the freshly applied adhesive. Then tilt board back to allow partial flash-off of solvents. Wait a minimum of 5 minutes and then reapply board in position. Nail or screw at corners only.
- **Laminate with joint compound:** Laminate Durasan panels to existing surfaces with a quick setting compound or ready mix joint compound. Joint compound is applied as nominal 5" (127 mm) ribbons of four 1/4" (6.4 mm) x 1/4" (6.4 mm) beads located around the perimeter and center of the boards. An alternate is 2" (50.8 mm) diameter daubs 1/2" (12.7 mm) thick, 16" (406 mm) o.c.
- **Demountable partitions:** Durasan panels are well suited for use with many proprietary partition systems. Consult systems manufacturer for compatibility and installation requirements.
- **Trim application:** Apply plastic, wood or metal trim at both floor and ceiling. Apply trim carefully to Durasan panels to avoid creating excessive pressure that might later cause delamination of the covering.

Cleaning: To remove most common dirt and marks, rub lightly with a moistened cloth, sponge or soft hair bristle brush, using a mild soap, detergent or nonabrasive cleanser. Rinse with water and wipe dry. Safely remove more stubborn stains by wiping away excess material, scrubbing the stained area with a stiff bristle brush wetted with an appropriate solvent, and quickly wiping dry with a clean cloth.

TECHNICAL DATA

Physical Properties	1/2" Durasan	5/8" Durasan
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm), 54" (1,372 mm)
Length[1,4], Standard	8' – 10' (2,438 mm – 3,048 mm)	8' – 10' (2,438 mm – 3,048 mm)
Weight, Nominal	1.8 lbs/sq ft (8.79 k/m^2)	2.2 lbs/sq ft (10.74 k/m^2)
Edges[1]	Beveled	Beveled
Flexural Strength[1], Perpendicular	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)
Flexural Strength[1], Parallel	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)
Humidified Deflection[1]	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)
Nail Pull Resistance[1]	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)
Hardness[1] – Core, Edges and Ends	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
Bending Radius	N/A	N/A
Thermal Resistance[5]	R = .45	R = .56
Product Standard Compliance	ASTM C1396	ASTM C1396
Fire-Resistance Characteristics		
Core Type	Regular	Type X
UL Type Designation	N/A	FSW
Combustibility[2]	Non-combustible Core	Non-combustible Core
Surface Burning Characteristics[3]	Class A	Class A
Flame Spread[3]	< 25	< 25
Smoke Development[3]	< 50	< 50
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*		
ASTM C1396 *Standard Specification for Gypsum Board*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*		
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*		
Gypsum Association, GA-214, *Levels of Finish for Gypsum Panel Products*		
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*		
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*		
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

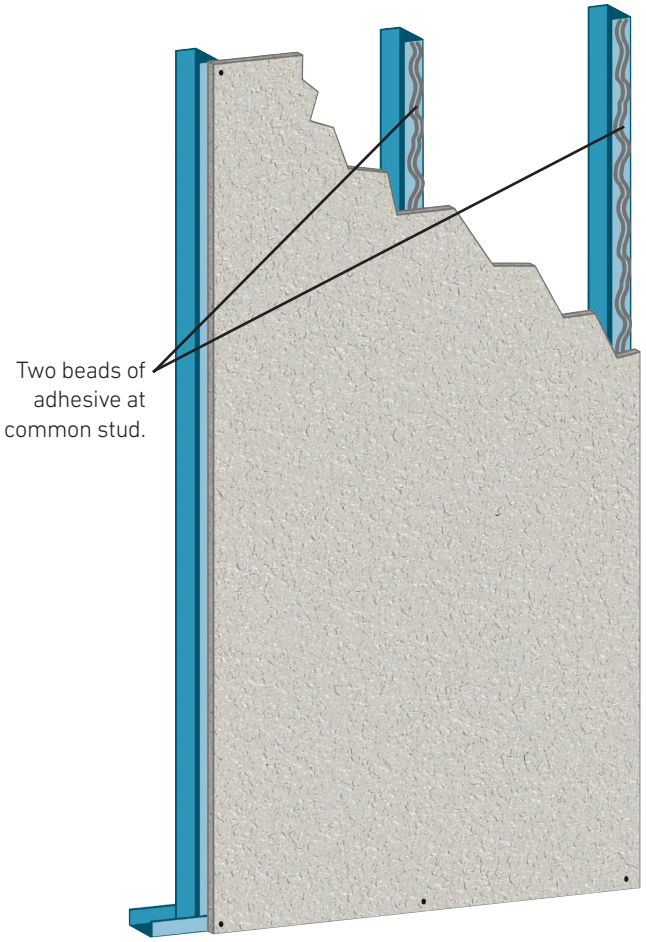
1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.
5. Tested in accordance with ASTM C518.

LIMITATIONS

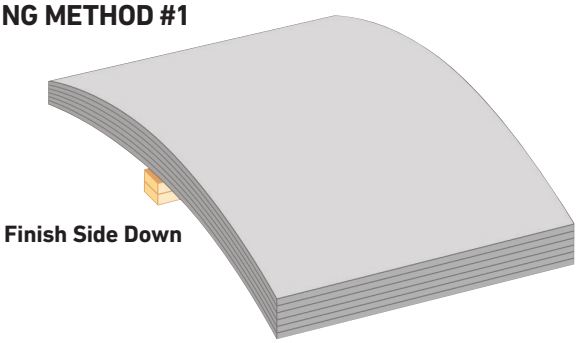
- The vinyl facer is a vapor retarder (less than 1 perm). Do not place a second vapor retarder behind these products.
- Do not use in areas where surface temperatures will exceed 125°F (52°C). Do not use Durasan behind stoves where direct heat or steam could affect the board covering.
- Do not use Durasan around bath tubs, in shower enclosures, or in areas where boards will be subject to free moisture.
- If applying Durasan over treated lumber, conduct tests prior to application to be sure the chemical treatment of the wood does not affect the bond or color of the board covering.
- Do not apply Durasan panels over wet or damp masonry walls. Mildew or staining problems could result if the walls are not dry or will not remain dry.
- Take care during application to ensure the boards applied on single walls or visual areas are color matched to minimize any such variations in the vinyl covering.

APPLICATION – ADHESIVE

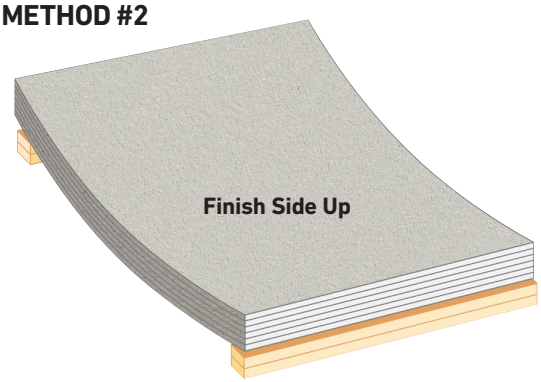
Nailing or screwing is required only at top and bottom of Durasan Prefinished Gypsum Boards when adhesive is applied and boards are prebowed to give pressure at the center of the board.



BOWING METHOD #1



BOWING METHOD #2

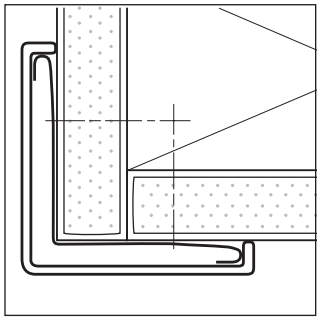


Durasan panels must be warped or bowed to give pressure at the center of the board during adhesive and cementing applications. If the boards were not bowed, temporary bracing would be required. Illustrated are two methods of bowing. Cut to proper ceiling height, and stack as shown with all prefinished surfaces facing up or down depending on which method of bowing is used. Use padded blocks cut from 2 x 4's to protect prefinished surfaces. Stack in a manner that, when applying, each panel would have a tendency to spring away at the top when nailed at the bottom. Proper bowing can take from one to several days depending on weather conditions.

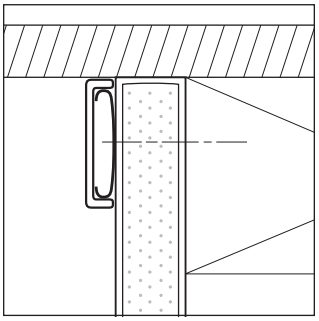
INSTALLING DURASAN SNAP-ON TRIM

1. **Apply Durasan and base trim** in normal manner before installing outside corner trim, then proceed with any interior ceiling and corner trim.
2. **Cut steel retainers** to fit outside corners, interior ceiling and corner trim.
3. **Nail or screw attach retainer strip.** Space fasteners 8" (203 mm) o.c. for interior ceiling and corner retainers, and 12" (305 mm) o.c. for outside corner retainers. All retainers should begin fasteners 1/2" (12.7 mm) from each end.
4. **Cut face cover to length** with tin snip or miter cut. After cutting cover, restore flanges to original configuration by using a screwdriver blade as a wedge. Snap cover over retainer by engaging one leg on retainer flange. Then use palm or thumb pressure until opposite leg engages retainer flange and snaps into place.

Exterior Corner

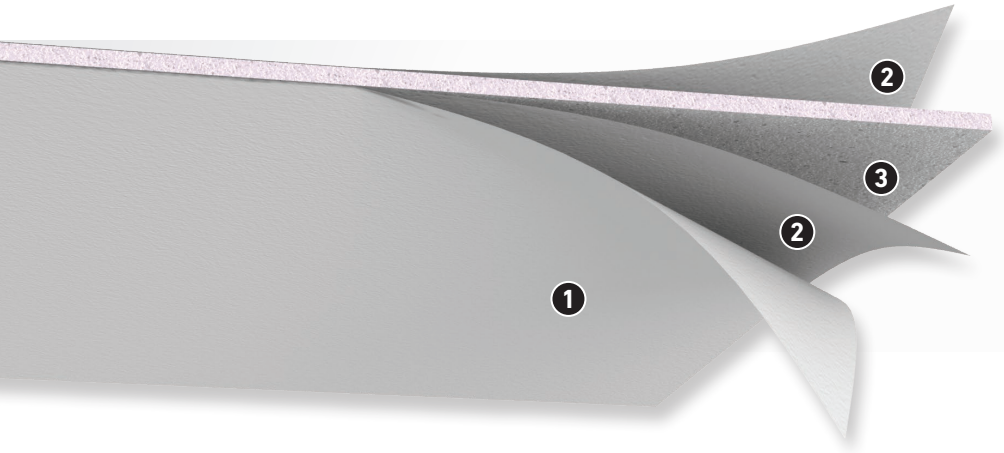


Interior Corner



Gridstone® Gypsum Ceiling Panels

Interior and Unexposed Exterior Ceiling Applications



1. Vinyl Laminate
2. 100% Recycled Paper
3. Gypsum Core

Gold Bond® Gridstone® Gypsum Ceiling Panels consist of a non-combustible, gypsum core. The 2-mil. white, stipple-textured vinyl laminate combines high light reflectance with easy cleanability.

Gridstone panels are ideal for interior and unexposed exterior ceiling applications such as soffits, parking garages, kitchens and baths.

Gridstone panels are accepted by the USDA for use in food service and food processing areas.

Gold Bond® Gridstone® Gypsum Ceiling Panels have achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick Type X panels are available in 2' (610 mm) width and in standard lengths of 2' (610 mm) and 4' (1,219 mm).

FINISHING

Square edge.

GRIDSTONE® Gypsum Ceiling Panels

BASIC USES

Applications

Use Gridstone Gypsum Ceiling Panels in interior and unexposed exterior ceiling applications, such as soffits, parking garages, kitchen and baths.

Advantages

- Gridstone Gypsum Ceiling Panels install easily in standard exposed grid systems.
- A non-combustible gypsum core assures fire safety with 1-1/2- and 2-hour fire ratings achievable depending on installation.
- The sturdy white vinyl laminate eliminates additional finishing.
- The rigid gypsum core prevents sagging and warping problems and is backed by a 15-year limited warranty.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Provide cross ventilation in unheated or enclosed space above ceiling panels.
- Install Gridstone Gypsum Ceiling Panels in lay-in suspension systems with edges concealed by flanges of suspension members.
- Gridstone Gypsum Ceiling Panels are designed to be mounted in standard 15/16" (24 mm) exposed tee grid systems or environmental-type grids for severe conditions, with grids either 24" x 24" (610 x 610 mm) or 24" x 48" (610 x 1,219 mm). Grid installation should be conducted according to manufacturer's specification.
- Vinyl laminate on face of Gridstone Gypsum Ceiling Panels is directional. Install with all factory edges parallel (same direction).
- Each panel must be continuously supported on all four edges.
- Cut panels to fit tightly at borders and penetrations so that cut edges are concealed by trim pieces and escutcheons.

Cleaning: Remove common dirt and stains on the vinyl surface with mild soap or detergent in lukewarm water. Use a light scrubbing action with a cloth, sponge or soft brush. If the suitability of any cleaning agent is unknown, check its effect on the Gridstone Gypsum Ceiling Panel surface in a hidden area or on a scrap piece before attempting to remove a field stain.

Decoration

Gridstone Gypsum Ceiling Panels are factory finished decorative products that do not require painting. However, if desired, paint Gridstone with the following products:

1. Oil primer with finish coat of oil or latex paint
2. Two coats of latex paint.

Fire-Ratings by Type and Size (ASTM E119)

Type	Size	Design	Rating
1/2" (12.7 mm)	2' x 2'	UL G222 FM FC299	2 hr.
1/2" (12.7 mm) Fire-Shield G	2' x 4'	UL G259 FM FC300	1-1/2 hr.

LIMITATIONS

- Do not install panels in areas exposed to extreme or continuous moisture, such as saunas, steam rooms, gang showers and indoor pool enclosures.
- Do not exceed 104˚ F (40˚ C) or 90% relative humidity prior to, during and after installation.
- For exterior application, protect grid panels from direct exposure to weather, water and continuous high humidity.
- Limit supported insulation to 1.6 psf (4.88 k/m^2).
- Overlaid insulation may cause excessive panel deflection and is not recommended where high humidity is likely to occur.
- Extreme lighting conditions may distort texture appearance.
- Do not use strong organic solvents (such as ketones), harsh abrasive cleaners or steel wool. These materials may cause dulling, discoloration, softening and other permanent damage to the vinyl surface.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage and installation, and after installation of gypsum ceiling panels in order to avoid the formation of mold or mildew.
- Remove nonbreathable shipping wrap material upon receiving and storing gypsum panels.
- Store gypsum ceiling panels off the ground and under cover.
- Use sufficient supports extending under the entire length of gypsum panel to prevent sagging.
- Keep gypsum ceiling panels dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining gypsum ceiling panels. For additional information, refer to the Gypsum Association publication, *Guidelines for Prevention of Mold Growth on Gypsum Board* (GA-238).
- Protect gypsum ceiling panels from the elements and maintain in good condition prior to and following installation. Stack panels flat, with care taken to prevent sagging or damage to edges, ends or surfaces.
- Do not install gypsum ceiling panels with visible signs of mold growth. Do not apply gypsum ceiling panels over other building materials where conditions exist that are favorable to mold growth.
- Do not exceed 95˚F (35˚C) when using a temporary heat source.
- Refer to GA-801 for complete handling and storage instructions.

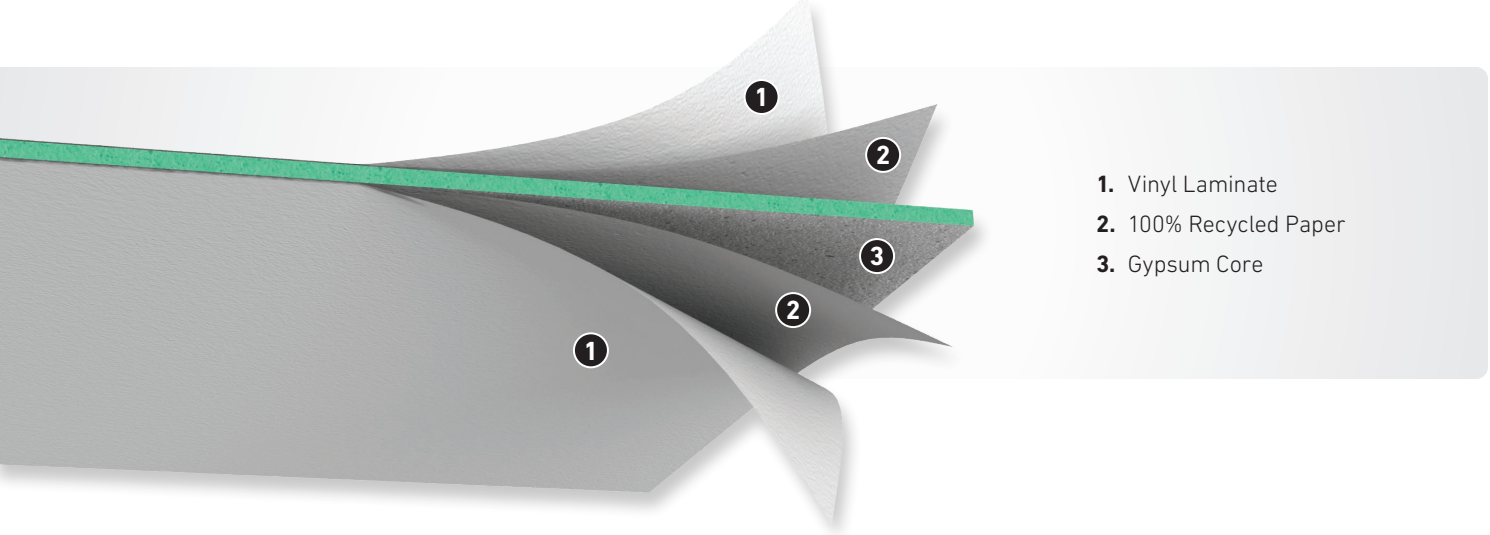
TECHNICAL DATA

Physical Properties	Gridstone Ceiling Panels
Thickness[1], Nominal	1/2" (12.7 mm)
Width[1], Nominal	2' (610 mm), (Actual size is 23-3/4")
Length[1,6], Standard	**GB 5044:** 2' (610 mm), (Actual size is 23-3/4") **GB 5045:** 4' (1,219 mm), (Actual size is 47-3/4")
Weight, Nominal	2.2 lbs/sq ft (10.74 k/m^2)
Edges[1]	Square
Finish Face	2 mil. White Stipple Vinyl Laminate
Finish Back	N/A
Predecorated Gypsum Board[1]	Class 1
Ceiling Attenuation Class (CAC)[4,5]	46 dB
Light Reflectance[5]	LR 1 (75% or greater)
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-G
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	5
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM E1264 *Standard Classification for Acoustical Ceiling Board*	
ASTM E1414 *Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Tested in accordance with ASTM E1414.
5. Tested in accordance with ASTM E1264, Type XX, Patterns E and G..
6. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gridstone® CleanRoom Ceiling Panels

Maintain Low Levels of Airborne Particulates



1. Vinyl Laminate
2. 100% Recycled Paper
3. Gypsum Core

Gold Bond® Gridstone® CleanRoom Ceiling Panels are prefinished ceiling panels with a non-combustible gypsum core. The 2-mil. white, stipple-textured vinyl laminate combines high light reflectance with easy cleanability. CleanRoom panels are manufactured with the exposed edges sealed, providing a durable coating that completely seals the panel.

Gridstone CleanRoom panels are for use in systems designed for areas requiring high levels of air cleanliness or low airborne particulate levels such as clean rooms and clean zones.

Gold Bond® Gridstone® CleanRoom Ceiling Panels have achieved UL GREENGUARD Gold Certification.

SIZES

1/2" (12.7 mm) thick Type X panels are available in 2' (610 mm) width and in standard lengths of 2' (610 mm) and 4' (1,219 mm).

FINISHING

Square edge.

GRIDSTONE®
CleanRoom Ceiling Panels

BASIC USES

Applications

Use Gridstone CleanRoom Ceiling Panels for areas requiring high levels of air cleanliness or low airborne particulate levels, such as clean rooms and clean zones.

Advantages

- Designed for clean room use. Approved for use in systems Class 100,000, Class 10,000, Class 1,000, Class 100 per federal standard 209E "Airborne Particulate Cleanliness Classes in Cleanrooms and Clean Zones."
- A non-combustible gypsum core assures fire safety with 1-1/2- and 2-hour fire ratings achievable depending on installation.
- Durable white vinyl laminate eliminates additional finishing.
- Gridstone CleanRoom Ceiling Panels' rigid gypsum core prevents sagging and warping problems and is backed by a 15-year limited warranty.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General

- Provide cross ventilation in unheated or enclosed space above ceiling panels.
- Use Gridstone CleanRoom Ceiling Panels in a gasket seal suspended grid system using hold down clips. Recommended use of Gordon DS-20 Gasket Seal System or equivalent gasket-sealed grid systems designed for clean room applications.
- Install Gridstone CleanRoom Ceiling Panels in lay-in suspension systems with edges concealed by flanges of suspension members.
- Gridstone CleanRoom Ceiling Panels are designed to be mounted in 15/16" (24 mm) exposed tee grid systems or environmental-type grids for severe conditions, with grids either 24" x 24" (610 x 610 mm) or 24" x 48" (610 x 1,219 mm). Grid installation should be conducted according to manufacturer's specification.
- Vinyl laminate on face of Gridstone CleanRoom Ceiling Panels is directional. Install with all factory edges parallel (same direction).
- Each panel must be continuously supported on all four edges.
- Cut panels to fit tightly at borders and penetrations so that cut edges are concealed by trim pieces and escutcheons.
- If panel cuts are required, seal exposed core to maintain performance of the system.

Cleaning: Remove common dirt and stains on the vinyl surface with mild soap or detergent in lukewarm water. Use a light scrubbing action with a cloth, sponge or soft brush. If the suitability of any cleaning agent is unknown, check its effect on the Gridstone CleanRoom Ceiling Panel surface in a hidden area or on a scrap piece before attempting to remove a field stain.

Decoration

Gridstone CleanRoom Ceiling Panels are factory finished decorative products that do not require painting. However, if desired, paint Gridstone with the following products:

1. Oil primer with finish coat of oil or latex paint
2. Two coats of latex paint.

Fire-Ratings by Type and Size (ASTM E119)

Type	Size	Design	Rating
1/2" (12.7 mm) Fire-Shield G	2' x 2'	UL G222 FM FC299	2 hr.
1/2" (12.7 mm) Fire-Shield G	2' x 4'	UL G259 FM FC300	1-1/2 hr.

LIMITATIONS

- Do not install panels in areas exposed to extreme or continuous moisture, such as saunas, steam rooms, gang showers and indoor pool enclosures.
- Do not exceed 104° F (40° C) or 90% relative humidity prior to, during and after installation.
- Limit supported insulation to 1.6 psf (4.88 k/m^2).
- Overlaid insulation may cause excessive panel deflection and is not recommended where high humidity is likely to occur.
- Extreme lighting conditions may distort texture appearance.
- Do not use strong organic solvents (such as ketones), harsh abrasive cleaners or steel wool. These materials may cause dulling, discoloration, softening and other permanent damage to the vinyl surface.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage and installation, and after installation of gypsum ceiling panels in order to avoid the formation of mold or mildew.
- Remove nonbreathable shipping wrap material upon receiving and storing gypsum panels.
- Store gypsum ceiling panels off the ground and under cover.
- Use sufficient supports extending under the entire length of gypsum panel to prevent sagging.
- Keep gypsum ceiling panels dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining gypsum ceiling panels. For additional information, refer to the Gypsum Association publication, *Guidelines for Prevention of Mold Growth on Gypsum Board* (GA-238).
- Protect gypsum ceiling panels from the elements and maintain in good condition prior to and following installation. Stack panels flat, with care taken to prevent sagging or damage to edges, ends or surfaces.
- Do not install gypsum ceiling panels with visible signs of mold growth. Do not apply gypsum ceiling panels over other building materials where conditions exist that are favorable to mold growth.
- Do not exceed 95°F (35°C) when using a temporary heat source.
- Refer to GA-801 for complete handling and storage instructions.

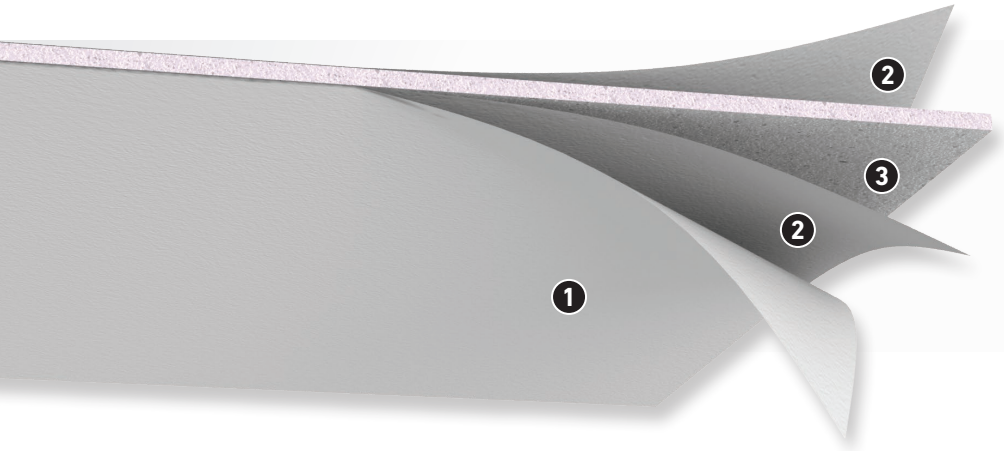
TECHNICAL DATA

Physical Properties	Gridstone CleanRoom Ceiling Panels
Thickness[1], Nominal	1/2" (12.7 mm)
Width[1], Nominal	2' (610 mm), (Actual size is 23-3/4")
Length[1,6], Standard	**GB 5040:** 2' (610 mm), (Actual size is 23-3/4") **GB 5030:** 4' (1,219 mm), (Actual size is 47-3/4")
Weight, Nominal	2.2 lbs/sq ft (10.74 k/m^2)
Edges[1]	Square
Finish Face	2 mil. White Stipple Vinyl Laminate
Finish Back	2 mil. Clear Vinyl Laminate
Predecorated Gypsum Board[1]	Class 1
Ceiling Attenuation Class (CAC)[4,5]	46 dB
Light Reflectance[5]	LR 1 (75% or greater)
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-G
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	5
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
ASTM C1396 *Standard Specification for Gypsum Board*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM E1264 *Standard Classification for Acoustical Ceiling Board*	
ASTM E1414 *Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum*	
Gypsum Association, GA-216, *Application and Finishing of Gypsum Panel Products*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Tested in accordance with ASTM E1414.
5. Tested in accordance with ASTM E1264, Type XX, Patterns E and G..
6. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Gridstone® Hi-Strength Ceiling Panels

Use in Food Service and Food Processing Areas



1. Vinyl Laminate
2. 100% Recycled Paper
3. Gypsum Core

Gold Bond® Gridstone® Hi-Strength Ceiling Panels consist of a non-combustible high strength gypsum core formulated with increased uniformity and integrity which increases its sag resistance.

These panels can be used for interior and exterior ceiling applications in protected, well-ventilated spaces.

Gridstone panels are accepted by the USDA for use in food service and food processing areas.

Gold Bond® Gridstone® Hi-Strength Ceiling Panels have achieved UL GREENGUARD Gold Certification.

SIZES

5/16" (7.9 mm) thick panels are available in 2' (610 mm) width and in standard lengths of 2' (610 mm) and 4' (1,219 mm).

FINISHING

Square edge.

GRIDSTONE®
Hi-Strength Ceiling Panels

BASIC USES

Applications

Use Gridstone Hi-Strength Ceiling Panels for interior and exterior ceiling applications in protected, well-ventilated spaces that receive intermittent exposure to moisture.

Gridstone Hi-Strength Ceiling Panels are accepted by the USDA for use in food service and food processing areas.

Gridstone Hi-Strength Ceiling Panels are ideal for interior and unexposed exterior ceiling applications, such as soffits, parking garages and other non-fire-rated ceiling systems.

Advantages

- Gridstone Hi-Strength 5/16" (7.9 mm) Ceiling Panels are 40% lighter in weight than standard gypsum ceiling panels.
- Gridstone Hi-Strength Ceiling Panels install easily in standard exposed grid systems.
- The durable white vinyl laminate eliminates additional finishing.
- Gridstone Hi-Strength Ceiling Panels' rigid gypsum core prevents sagging and warping problems and is backed by a 15-year limited warranty.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350.**

INSTALLATION RECOMMENDATIONS

General

- Provide cross ventilation in unheated or enclosed space above ceiling panels.
- Install Gridstone Hi-Strength Ceiling Panels in lay-in suspension systems with edges concealed by flanges of suspension members.
- Gridstone Hi-Strength Ceiling Panels are designed to be mounted in 15/16" (24 mm) exposed tee grid systems or environmental-type grids for severe conditions, with grids either 24" x 24" (610 x 610 mm) or 24" x 48" (610 x 1,219 mm). Grid installation should be conducted according to manufacturer's specification.
- Vinyl laminate on face of Gridstone Hi-Strength Ceiling Panels is directional. Install with all factory edges parallel (same direction).
- Each panel must be continuously supported on all four edges.
- Cut panels to fit tightly at borders and penetrations so that cut edges are concealed by trim pieces and escutcheons.
- If panel cuts are required, seal exposed core with drywall primer to maintain performance of the system.

Cleaning: Remove common dirt and stains on the vinyl surface with mild soap or detergent in lukewarm water. Use a light scrubbing action with a cloth, sponge or soft brush. If the suitability of any cleaning agent is unknown, check its effect on the Gridstone Hi-Strength Ceiling Panel surface in a hidden area or on a scrap piece before attempting to remove a field stain.

Decoration

Gridstone Hi-Strength Ceiling Panels are factory finished decorative products that do not require painting. However, if desired, paint Gridstone with the following products:

1. Oil primer with finish coat of oil or latex paint
2. Two coats of latex paint.

LIMITATIONS

- Do not install panels in areas exposed to extreme or continuous moisture, such as saunas, steam rooms, gang showers and indoor pool enclosures.
- Do not exceed 104˚ F (40˚ C) or 90% relative humidity prior to, during and after installation.
- Gridstone Hi-Strength Ceiling Panels are not listed in fire-rated assemblies.
- For exterior application, protect grid panels from direct exposure to weather, water and continuous high humidity.
- Limit supported insulation to 1.6 psf (4.88 k/m^2).
- Overlaid insulation may cause excessive panel deflection and is not recommended where high humidity is likely to occur.
- Extreme lighting conditions may distort texture appearance.
- Do not use strong organic solvents (such as ketones), harsh abrasive cleaners or steel wool. These materials may cause dulling, discoloration, softening and other permanent damage to the vinyl surface.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage and installation, and after installation of gypsum ceiling panels in order to avoid the formation of mold or mildew.
- Remove nonbreathable shipping wrap material upon receiving and storing gypsum panels.
- Store gypsum ceiling panels off the ground and under cover.
- Use sufficient supports extending under the entire length of gypsum ceiling panel to prevent sagging.
- Keep gypsum ceiling panels dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining gypsum ceiling panels. For additional information, refer to the Gypsum Association publication, *Guidelines for Prevention of Mold Growth on Gypsum Board* (GA-238).
- Protect gypsum ceiling panels from the elements and maintain in good condition prior to and following installation. Stack panels flat, with care taken to prevent sagging or damage to edges, ends or surfaces.
- Do not install gypsum ceiling panels with visible signs of mold growth. Do not apply gypsum ceiling panels over other building materials where conditions exist that are favorable to mold growth.
- Do not exceed 95˚F (35˚C) when using a temporary heat source.
- Refer to GA-801 for complete handling and storage instructions.

TECHNICAL DATA

Physical Properties	Gridstone Hi-Strength Ceiling Panels
Thickness[1], Nominal	5/16" (7.9 mm)
Width[1], Nominal	2' (610 mm), (Actual size is 23-3/4")
Length[1,6], Standard	**GB 5020:** 2' (610 mm), (Actual size is 23-3/4") **GB 5010:** 4' (1,219 mm), (Actual size is 47-3/4")
Weight, Nominal	1.24 lbs/sq ft (6.05 k/m^2)
Edges[1]	Square
Finish Face	2 mil. White Stipple Vinyl Laminate
Finish Back	N/A
Predecorated Gypsum Board[1]	Class 1
Ceiling Attenuation Class (CAC)[4,5]	41 dB
Light Reflectance[5]	LR 1 (75% or greater)
Product Standard Compliance	ASTM C1396
Fire-Resistance Characteristics	
Core Type	N/A
UL Type Designation	N/A
Combustibility[2]	Non-combustible Core
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	5
Smoke Development[3]	0
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C840 *Standard Specification for Application and Finishing of Gypsum Board*	
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6. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

Conventional and Veneer Plaster Systems

Gold Bond® plaster products are created to deliver exceptional beauty and durability.

With decades of experience, we're proud to offer one of the industry's most complete lines of gypsum plaster products. Gold Bond gypsum plaster products provide excellent solutions for some of your most demanding requirements. From one- and two-coat veneer plaster systems to conventional plaster base coat and finish options, our plaster products create high-quality surfaces enhancing the overall durability of your walls and ceilings.

Conventional Plaster

- Ideal for both residential and commercial applications.
- Provide smooth, high quality wall surfaces.
- Requires no joint taping and finishing.
- High impact and abrasion resistant.
- Enhances overall wall strength.

Veneer Plaster

- Rapid installation reduces overall construction time.
- Appearance and surface of conventional plaster at lower cost.
- High resistance to cracking, nail-popping, impact and abrasion failure.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.

Conventional Plaster

Conventional lath and plaster systems have long been considered the industry standard in wall and ceiling construction.

Ideal for both residential and commercial applications, conventional plaster systems provide smooth, high quality wall surfaces, regardless of framing alignment.

Conventional plaster delivers exceptional beauty and durability for interior partitions and ceilings. Conventional plaster systems are also commonly used as the material for radiant heating systems in ceilings.

When used with expanded metal lath, conventional plasters create a mechanical bond for maximum strength and durability. Moulding plasters are excellent for sculpting, casting decorative objects, and historic restoration.

GENERAL USES

Gypsum plaster systems are suitable for all interior plastering except areas directly exposed to free water or severe moisture. Lath and plaster is not recommended for exterior applications such as carports, soffits and open porches. Gypsum plasters are non-combustible and act to prevent passage of intense heat from fire for extended periods. For specific fire resistance ratings, visit **goldbondbuilding.com**.

ADVANTAGES

- Provides a smooth, high quality surface.
- Requires no joint taping and finishing.
- Resists nail pops better than gypsum wallboard.
- Enhances overall wall strength.
- High impact and abrasion resistance.

SELECTING PLASTER BASES

Gold Bond Building Products, LLC manufactures the most common types of gypsum base plaster and finishing plaster.

These products perform well in appearance, structural ability, sound isolation and fire endurance ratings, allowing architects to design virtually any number of interior ceilings and partitions.

PERFORMANCE

The relative performance of gypsum and metal lath varies depending on the type of construction. When plaster on metal lath forms a membrane, as in a suspended ceiling or hollow partition, it's more subject to cracking than plaster on gypsum lath.

RECOMMENDATIONS

- Control joints should be installed in ceilings without perimeter relief a maximum distance between joints of 30' with a maximum undivided area of 900 sq. ft. With perimeter relief, the maximum distance between joints is 50' with a maximum undivided area of 2,500 sq. ft. On side walls, control joints should be installed every 30'.
- Where dissimilar plaster bases adjoin, use strip-metal lath with 15 lb. felt paper between the metal lath and underlying base.
- Carefully inspect all lath and furring before plastering to ensure adherence to job specifications and good practice standards.
- Select from the specifications that accompany the description of each system.

PRODUCT SHELF LIFE

Product	Storage/Shelf Life
Two-Way Hardwall	6 months
Gypsolite Plaster	6 months
Gauging Plaster	3 months
Moulding Plaster	3 months

Two-Way Hardwall Gypsum Plaster

High Strength Basecoat Plaster

Gold Bond® Two-Way Hardwall Plaster is a neat basecoat gypsum plaster which requires the jobsite addition of an aggregate and water to produce working qualities. When properly proportioned with aggregate, Two-Way Hardwall Plaster forms a hard, durable base for the finish coats of another gypsum plaster.

Complies with ASTM C28.

Use Two-Way Hardwall Plaster with sand or expanded lightweight aggregate conforming to ASTM C35. It is mechanically mixed at the jobsite. Apply it by hand or use it through pump/spray plastering machines.

Two-Way Hardwall Plaster consists of unaggregated gypsum plaster and contains no asbestos.

Applications

Designed as a basecoat plaster for finish plasters as well as interior use over all accepted plaster bases as described in ASTM C842.

Advantages

- Set-stabilized and adjusted for market requirements and seasonal changes. When mixed with sand or other aggregates, it has uniform working qualities and excellent spread.
- When properly proportioned with aggregate, it forms a hard, durable base for the finish coat and provides increased resistance to minor structural movements and impacts.
- Fire resistant: Two-Way Hardwall Plaster is essentially mineral in composition and will not support combustion.

Packaging

Bag: 49.5 lbs (22.5 kg)

Coverage

Over Gypsum Plaster Base – 7/16" (11.1 mm) thickness:
Approx. 40-50 sq ft (3.7-4.6 m^2) per bag

Over Metal Lath – 7/16" (11.1 mm) thickness:
Approx. 20-26 sq ft (1.9-2.4 m^2) per bag

Over Brick, Clay Tile, Concrete Block – 9/16" (14.3 mm) thickness:
Approx. 40-50 sq ft (3.7-4.6 m^2) per bag

Set Time

Approx. 3 hours

Gypsolite® Plaster

Lightweight Basecoat Plaster

Gold Bond® Gypsolite® Plaster is a lightweight gypsum basecoat plaster mixed at the plant with correctly sized and proportioned perlite aggregate, requiring only the addition of water on the job.

Complies with ASTM C28.

Applications

Gypsolite Plaster is designed for interior use in trowel application over gypsum or metal lath as described in ASTM C842.

Advantages

- Gypsolite Plaster assures uniformity through exact proportioning and thorough mixing of graded perlite and gypsum plaster at the mill. Gypsolite provides a uniform base for the finish coat.
- Weighs less than half as much as sanded gypsum plaster, reducing the dead-load on framing and jobsite handling costs.
- With a "k" factor of 1.5, Gypsolite Plaster provides about 1-1/2 times the insulating value of sanded plaster.
- Gypsolite has excellent fire-resistive qualities and generally provides fire ratings higher than sanded plaster.

Packaging

Bag: 49.5 lbs (22.5 kg)

Coverage

Over Gypsum Plaster Base – 7/16" (11.1 mm) thickness:
Approx. 32-35 sq ft (3.0-3.5 m^2) per bag

Over Metal Lath – 9/16" (14.3 mm) thickness:
Approx. 16-19 sq ft (1.5-1.8 m^2) per bag

Set Time

Approx. 2-1/2 hours

Super-White Gauging Plasters

Applied as a Finish Coat to Gypsum Basecoat Plaster

Gold Bond® Super-White Gauging Plaster Slow Set and Gold Bond® Super-White Gauging Plaster Quick Set are designed for interior smooth trowel application over a gypsum plaster basecoat. It is specially ground, calcined gypsum, which readily mixes with water and lime putty. Proper proportioning is essential since gauging adds strength and hardness to the finish surface by reinforcing the plastic non-setting lime against shrinkage and cracking.

Complies with ASTM C28.

Applications

A finish coat of gypsum gauging plaster and finish lime, job mixed 2 parts hydrated lime to 1 part plaster by weight, is designed for interior smooth trowel application over a gypsum plaster basecoat.

Smooth finish plasters should be applied at a thickness of not more than 1/16" (1.6 mm). Texture finishes should be applied at a thickness of not more than 1/8" (3.2 mm).

Advantages

- Readily mixes with water and lime putty.
- Adds strength and hardness to the finished surface.

Packaging

Bag: 49.5 lbs (22.5 kg)

Coverage

Approx. 225-315 sq ft (21-29 m^2) per bag

Set Time

Approx. 1-1/2 to 2 hours

Super-White Moulding Plaster

Ornamental Gypsum Plaster

Gold Bond® Super-White Moulding Plaster is a very white, finely ground gypsum, primarily used for all kinds of ornamental plaster work. Because of its low expansion, excellent strength and hardness, it is especially adaptable for casting in rubber, gelatin and other types of moulds.

Complies with ASTM C59.

Applications

For casting purposes, only water is added. For run-in-place ornamental work, such as cornices, the moulding plaster is used with lime putty, mixed 2 parts lime to 1 part moulding plaster by weight.

Advantages

- Low expansion with excellent strength and hardness.
- Used for all kinds of ornamental plasterwork.
- Adaptable for casting in rubber, gelatin and other types of moulds.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

For casting purposes: 15-18 qts (14.2-17.0 L) per bag

Set Time

Approx. 45 minutes

Basecoat Plaster Application

Two-Coat Work

Apply first coat with firm pressure to form a good bond on the gypsum plaster base or masonry base, then immediately double back (without cross-raking first coat) using material of same proportion to build proper basecoat thickness. Straighten to a true surface (without applying water) to receive the second (finish) coat.

Leave surface sufficiently rough and porous to provide suitable bond of the finish coat.

Base (first) coat on Kal-Kore Plaster Base

Finish (second) coat (Smooth or Texture Finish)

Three-Coat Work

Used for metal lath or direct masonry bases and are performed in discrete steps.

Scratch (first) coat: Apply with sufficient material and pressure to obtain good bond over solid bases or form full keys through metal lath. Provide suitable material thickness for scratching (raking) to obtain good mechanical keying of the brown coat.

Brown (second) coat: Apply after the scratch (first) coat has set hard and is still damp. Apply to give mass and surface as for double back in two-coat work.

Finish (third) coat: Application over a partially dry basecoat is preferred. See following page for detailed information on finish coat procedures.

Finish Coat Plaster Application

GENERAL (BASECOAT CONDITION)

Application over a partially dry basecoat is preferred if basecoat is thoroughly dry, wet with even application of water to a semi-dry condition. Avoid excess water. Do not apply finish to basecoats having free water on the surface.

SMOOTH TROWELED FINISHES

Scratch in tightly over the basecoat, covering the surface completely, then double back immediately with material from the same gauge, filling out to a true, even surface with total thickness of not more than 1/16".

Allow finish to "draw" (lose moisture to basecoat and ambient air) and firm up – then trowel it well to compact and close the surface under the edge of the trowel. Dash water on the surface for lubrication and development of soft material along trowel's edge to fill surface depressions or other blemishes.

When finish plaster setting action is underway, a second (final) water troweling can be done with strong pressure to obtain a polished surface, if desired.

TEXTURE FINISHES

Apply finish as above to a true, even surface with total thickness not more than 1/8".

Allow finish to "draw" (lose moisture to basecoat and ambient air). Then begin floating, texturing or skip troweling to achieve desired texture. Additions of clean, graded silica may be required to achieve desired texture.

DRYING

Allow conventional plaster systems to dry 30 days minimum under ambient conditions prior to final decoration. Variances in humidity or poor drying conditions may affect the drying process.

PAINTING PLASTER

Various job conditions, such as suction differences, wet or only partially dry walls, and reactions between paint and lime, have caused unsatisfactory paint finishes, particularly on new construction.

Alkali-resistant primers specifically formulated for use over new plaster will permit decorating with oil- or latex-type paints.

Quality paint products should be used and paint manufacturer's recommendations followed. Finished plaster should be painted or covered to conceal possible discoloration. The paint system should be suitable for use over plaster surfaces that contain lime, which as high pH of 10-13.

It is essential that plaster be sound and completely dry before painting. Conventional plaster may require 30 to 60 days to fully dry.

High build, heavy duty and special purpose coatings such as Epoxy are not recommended over veneer or job gauged lime putty finishes.

Veneer Plaster

High resistance to cracking, abrasion and impact.

Veneer plaster systems consist of a 4' wide gypsum plastering base with a special, highly absorptive paper surface that is covered with thinly troweled, special purpose plasters. Two basic types of veneer plaster are available: Uni-Kal® and X-KALibur®, which are one-coat plaster system products; and Kal-Kote®, a two-coat plaster system. The gypsum plaster base, Kal-Kore®, is erected in the same manner for both systems. Both veneer plaster systems can be specified for virtually all types of partition and ceiling constructions including wood or steel framing or furring and masonry. For both residential and commercial buildings, either type of veneer plaster system produces a wall more nail-pop resistant than drywall.

FEATURES/BENEFITS

The advantages of veneer plaster over other commonly used partition and ceiling systems include:

- Rapid installation which reduces overall construction time.
- Appearance and surface of conventional plaster at lower cost.
- High resistance to cracking, nail-popping, impact and abrasion failure.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.

ONE-COAT SYSTEMS

Uni-Kal®/X-KALibur®

- Requires only one plastering material on the job.
- Slightly lower in-place cost than two-coat system.
- Can be applied directly to concrete block.
- X-KALibur is formulated to have extended set characteristics beyond the traditional Uni-Kal setting time.

TWO-COAT SYSTEMS

Kal-Kote®

- Kal-Kote system may be used for plaster-embedded electric radiant heating cable systems.
- Kal-Kote Basecoat is a high strength basecoat plaster.
- Greater crack resistance than one-coat systems.
- Can be applied directly to concrete block.

LIMITATIONS

- Not recommended for exterior use or where subject to weathering, direct water contact or temperature exceeding 125˚F (52˚C) for extended periods of time.
- When Uni-Kal/X-KALibur will be applied, do not install Kal-Kore too far in advance of plastering since Uni-Kal/X-KALibur bond can be adversely affected if face of Kal-Kore has become faded from light. If Kal-Kore has been faded, apply Kal-Kote Base Plaster or a plaster bonding agent to obtain good bond.
- Veneer plasters are designed for trowel application and are not suitable for conveyance or application by conventional plastering machines.
- Compared to conventional plasters, veneer plaster systems are more subject to beading (ridging) and cracking at the joints under rapid drying conditions such as those caused by low humidity, high temperature and/or high draft exposure.
- Veneer plaster systems provide a base over which paints or other finishes should be applied.
- Do not use a polyethylene vapor retarder unless structure is ventilated adequately during application of veneer plasters.
- A bonding agent must be applied to monolithic concrete prior to application of veneer plaster systems.
- Do not sand finished plaster.

PRODUCT SHELF LIFE

Product	Storage/Shelf Life
X-KALibur	12 months
Kal-Kote Basecoat	12 months
Uni-Kal	12 months
Kal-Kote Smooth	12 months
Kal-Kote Texture	12 months

Kal-Kote® Basecoat Plaster

High-Strength Basecoat Plaster

Gold Bond® Kal-Kote® Basecoat Plaster is a specially-designed high-strength basecoat plaster for application 1/16" minimum thickness over Kal-Kore® Plaster Base, masonry, or monolithic concrete that has been treated with a bonding agent. The strength of Kal-Kote Basecoat Plaster is substantially greater than that exhibited by typical sanded basecoat plaster.

Kal-Kote Basecoat is a high strength basecoat plaster for application over Kal-Kore. This system offers four finish options: Kal-Kote® Smooth, Kal-Kote® Texture, Uni-Kal® and X-KALibur®.

Complies with ASTM C587.

Advantages

- Rapid installation reduces overall construction time.
- Appearance and surface of conventional plaster at lower cost than regular plastering.
- High resistance to cracking, nail-popping, impact and abrasion.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.
- Kal-Kote system may be used for plaster-embedded electric radiant heating cable systems.

Fire Resistance

Kal-Kote Basecoat & Finishes: Fire ratings equivalent to those of drywall systems can be obtained by applying the corresponding Kal-Kore type and thickness over the same framing member size and spacing, with the same fasteners and 1/8" of Kal-Kote plasters.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

6-8 qts (5.7-7.6 L) per bag

Coverage

Approx. 93-106 sq ft (8.6-9.8 m^2) per bag
Applied thickness 1/16" (1.6 mm)

Set Time

Approx. 45 minutes

Kal-Kote® Smooth Finish Plaster

Durable Finish for Two-Coat Plaster Systems

Kal-Kote® Smooth Finish Plaster is designed to provide a white smooth trowel finish using conventional plastering techniques. Apply not exceeding 1/16" over Kal-Kote Basecoat Plaster.

Requires the addition of water only. It may also be used as a finish for conventional basecoat plasters. Small amounts of commercial retarder may be cautiously used to slow the setting time when used over conventional basecoat plasters.

Kal-Kote Smooth is a veneer finish coat that bonds directly to Kal-Kote Basecoat Plaster.

Complies with ASTM C587.

Advantages

- Rapid installation reduces overall construction time.
- Appearance and surface of conventional plaster at lower cost than regular plastering.
- High resistance to cracking, nail-popping, impact and abrasion.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.
- Kal-Kote system may be used for plaster-embedded electric radiant heating cable systems.
- Greater crack resistance than one-coat systems.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

18-20 qts. (17-18.9 L) per bag

Coverage

Approx. 145-160 sq ft (13-15 m^2) per bag
Applied thickness 1/16" (1.6 mm)

Set Time

Approx. 35 minutes

Kal-Kote® Texture Finish Plaster

Textured Finish for Two-Coat Plaster Systems

Gold Bond® Kal-Kote® Texture Finish Plaster is designed to provide a variety of decorative surfaces using common plastering techniques. Applied as a 1/16" finish coat over Kal-Kote Basecoat Plaster. It requires the addition of water only.

It can also be used as a finish coat over conventional basecoat plaster.

Complies with ASTM C587.

Advantages

- Rapid installation reduces overall construction time.
- Decorative texture finish.
- Uniform installation performance and finished job quality.
- High resistance to cracking, nail-popping, impact and abrasion.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.
- Kal-Kote system may be used for plaster-embedded electric radiant heating cable systems.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

11-12 qts (10.4-11.4 L) per bag

Coverage

Approx. 145-160 sq ft (13-15 m^2) per bag
Applied thickness 1/16" (1.6 mm)

Set Time

Approx. 35 minutes

Uni-Kal® Veneer Plaster

One-Coat Smooth Veneer Plaster

Gold Bond® Uni-Kal® Veneer Plaster is a mill-mixed veneer finish plaster for smooth and textured troweled applications. It consists of specially ground, calcined gypsum, requiring the addition of water. Texturing grade silica sand may be added for textured finish.

Use as a one-coat application over gypsum plaster base. A finish coat of Uni-Kal Veneer Plaster may be used for interior smooth and textured trowel application over a gypsum plaster basecoat or as a one-coat application over gypsum plaster base.

Complies with ASTM C587.

Advantages

- Appearance and surface of conventional plaster at a lower cost than regular plastering.
- High resistance to cracking, nail-popping, impact and abrasion.
- Requires only one plastering material on the job.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.
- Rapid installation which reduces overall construction time.

Fire Resistance

Fire ratings equivalent to those of drywall systems can be obtained by applying the corresponding Kal-Kore type and thickness over the same framing member size and spacing with the same fasteners and 3/32" of Uni-Kal.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

13-15 qts (12.3-14.2 L) per bag

Coverage

Approx. 135-150 sq ft (12-14 m^2) per bag
Applied thickness 3/32" (2.4 mm)

Set Time

Approx. 45 minutes

X-KALibur® Extended Set Veneer Plaster

One-Coat Smooth Veneer Plaster

Gold Bond® X-KALibur® Extended Set Veneer Plaster is a mill-mixed veneer finish plaster for smooth troweled applications where an extended setting time is desirable. It consists of specially ground, calcined gypsum, requiring the addition of water. Texturing grade silica sand may be added for textured finish.

Use as a one-coat application over gypsum plaster base. A finish coat of X-KALibur may be used for interior smooth and textured trowel application over a gypsum plaster basecoat or as a one-coat application over gypsum plaster base.

Complies with ASTM C587.

Advantages

- Formulated to have extended set characteristics beyond traditional setting times.
- Provides a durable, abrasion-resistant surface for further decoration.
- Mill-mixed plaster components help assure uniform installation performance and finished job quality.
- High resistance to cracking, nail-popping, impact and abrasion.

Fire Resistance

Fire ratings equivalent to those of drywall systems can be obtained by applying the corresponding Kal-Kore type and thickness over the same framing member size and spacing with the same fasteners and 3/32" of X-KALibur.

Packaging

Bag: 49.5 lbs (22.5 kg)

Water Ratio

13-15 qts. (12.3-14.2 L) per bag

Coverage

Approx. 135-150 sq ft (12-14 m^2) per bag
Applied thickness 3/32" (2.4 mm)

Set Time

Approx. 60 minutes

Recommendations

VENEER PLASTER FOR METAL AND WOOD FRAMING

1. **Wood Studs or Joists.** Wood members shall meet the minimum requirements of local building codes. Framing shall not exceed spacing shown on page 154. Most partition fire ratings require that Kal-Kore be applied vertically. When such ratings are not required, horizontal application may be used to minimize joints. For ceilings, application at right angles to framing is preferred.
2. **Metal Studs.** Align floor and ceiling tracks to assure plumb partition. Secure track with appropriate fasteners at a maximum of 24" o.c. Position studs in track on specified centers by rotating into place for a friction fit. Secure studs located adjacent to door and window frames, partition intersections and corners by self-drilling sheet metal screws through both flanges of studs and tracks or by use of screw stud clinching tool. Apply Kal-Kore vertically for most fire ratings. When ratings are not required, horizontal application may be used to minimize joints.
3. **Masonry Wall Furring with Screw Furring Channel.** Attach furring channel vertically spaced not to exceed spacing shown on page 154. Fasten each channel with concrete stub nails or appropriate fasteners through channel flanges into the masonry or concrete. Fasteners shall be spaced on alternate flanges not over 24" o.c. Apply Kal-Kore vertically or horizontally in maximum lengths to minimize end joints.
4. **Furred Ceilings with Bar Joists.** Attach regular furring channel 16" o.c. to bar joists spaced up to 4' o.c. Wire tie furring channel to joists or use 1-1/2" drywall furring channel clip for 1-1/2" carrying channel. Apply Kal-Kore with paper bound edges at right angles to the furring channel.

KAL-KORE APPLICATION

Note: Application shall conform to ASTM C844.

1. Cut and position Kal-Kore accurately. Bring all joint edges together but do not force into place. Position all end joints over framing members. To avoid ridging, minimize gaps between adjacent panels.
2. Minimize the number of end joints by using maximum practical lengths with proper positioning.
3. Stagger joints so that they occur on different framing members and will not be directly opposite one another on partitions. Avoid joining Kal-Kore at corners of doors, window frames, and other openings, unless control joints are used.
4. Fasten Kal-Kore to framing members with face out, using the proper type and spacing of fasteners shown under types of fasteners.
5. Draw Kal-Kore tight to framing. Drive fasteners straight and dimple the surface without breaking the paper face.

Veneer Corner Bead Application

Install veneer corner bead using appropriate fasteners spaced 12" apart.

Control Joint Application

Install control joints at 30' max. spacing on walls and 50' max. spacing in either direction on ceilings with perimeter relief, ceilings without perimeter relief control joint space 30' max. Apply the control joint with staples spaced 6" along each side of the flanges.

Treatment of Kal-Kore Joints

Pre-treat all joints and fasteners in Kal-Kote and Uni-Kal plaster systems with Kal-Kote Basecoat Plaster, Uni-Kal, X-KALibur or setting compound.

Low humidity, high temperatures and rapidly circulating air can cause cracking of plaster and joint beading when Kal-Kore is applied to metal framing. To minimize this during these conditions, joints may be pre-treated using paper tape. Three acceptable methods of treating Kal-Kore joints are:

Drywall Paper Tape Treatment Method

1. Trowel Kal-Kote Basecoat Plaster, Uni-Kal or X-KALibur over joint line filling the channel formed by the tapered edges of the Kal-Kore board in an even fashion.
2. Center drywall paper tape over the joint line and embed the tape into the soft plaster using a trowel and level the joint. Tape the full length of the joint.
3. Allow the treated joints to set prior to general plaster application.

Setting Compound and Paper Tape Treatment Method

1. Mix setting compound per instructions on package. Do not contaminate the compound with other materials, dirty water or previous mixes. Do not retemper.
2. Apply the setting compound to the joint by hand or machine tool. The drywall paper tape must be centered over the joint line and embedded into the soft compound. Do not over-trowel to a slick surface. Leave the surface rough to provide mechanical keying of the plaster.
3. Allow the treated joints to set and dry prior to general plastering.

Kal-Mesh® Veneer Plaster Tape Treatment Method

Do not use self-adhering mesh.

1. Center and secure Kal-Mesh over all joints and interior angles with 1/4" or 5/16" staples.
2. Position staples a maximum of 24" apart as follows:

   A. Joints: at alternate edges for the run from end to end and directly opposite one another at either end.

   B. Angles: along ceiling edge only for wall-to-ceiling angles. Along one edge for wall-to-wall angles.
3. After the first staples are placed at the end of a joint or angle, pull unstapled Kal-Mesh as stapling proceeds to assure that it will lie flat against the Kal-Kore.
4. Pre-treat all joints and Kal-beads with Kal-Kote, Uni-Kal or X-KALibur Plaster. Tightly trowel over joint line in both directions to prevent voids, feathering to a maximum width of about 6".
5. Allow the treated joints to set prior to general plaster application.

PLASTERING

Note: Application shall conform to ASTM C843.

The same general job conditions used in good conventional plastering practice should be maintained. However, because veneer plaster coats are thin, particular action must be taken to guard against dryouts (primarily avoiding direct exposure to concentrated sources of heat and drafts.)

Special attention should also be given to temperature conditions under which the system is installed. Both "in-place" and application performance of individual veneer system components will be greatly enhanced if all construction areas and materials are at a suitable temperature equilibrium before, during and after installations.

During cold weather, maintain a temperature 55˚F (13˚C) to 70˚F (21˚C) before, during and after installation of all system components until building is occupied.

Mixing Equipment: Mixing should be done with a high-speed mechanical mixer. A paddle-type agitator fitted to a 500-600 RPM heavy duty, 1/2" electric drill and a clean, smooth-sided drum of convenient size are recommended for rapid, efficient mixing of all Kal-Kote plaster types.

Water Ratios: Use only clean, fresh water suitable for human consumption. **Basecoat:** 6-8 qts. per 50 lb. bag. **Smooth Finish:** 18-20 qts. per 50 lb. bag. **Texture Finish:** 11-12 qts. per 50 lb. bag. **Uni-Kal and X-KALibur:** 13-15 qts. per 50 lb. bag.

Procedure

1. Put all but 1 to 2 quarts of the proper water volume in a suitable mixing drum.

Note: Starting with an insufficient amount of mixing water will seriously degrade mixing and application performance.

2. Add plaster and allow to soak for about 1 minute or add plaster as mixer is turning, then mix until uniformly wetted.
3. Add remaining water and mix sufficiently to obtain desired lump free material fluidity.

   A. Mixing periods greater than 5 minutes will not be required if proper equipment and procedure are used.

   B. Mix no more than two bags per batch to avoid mixing too far in advance of application.

   C. Caution is advised against mixing more than two successive batches without thorough equipment cleanup to avoid undue set acceleration.

   D. Avoid the practice of mixing partial bags since this leads to difficulty in maintaining uniform material qualities.

Job Setting Adjustment

1. Basecoat and Finish Plasters: Small amounts of commercial retarder or commercial gypsum type accelerator may be cautiously used to adjust setting time when extreme conditions demand. When commercial retarder or accelerator is used, add to mixing water directly, or in previously prepared water solution form to obtain the most uniform effect.
2. Never use gauging or moulding plasters in place of commercial accelerator since they can adversely affect working qualities.

KAL-KOTE APPLICATION OVER KAL-KORE

Basecoat Over Kal-Kore

1. Tightly scratch material into previously treated joints and corner beads, then immediately scratch-in tightly over the wall and/or ceiling area.
2. Double back over the area just troweled with material from the same batch bringing total thickness up to 1/16" minimum.
3. When plaster has "taken up," eliminate excessive trowel marks and fill all surface voids and imperfections to obtain a reasonably uniform surface. Do not over-trowel to a slick surface. Roughen the unset basecoat plaster surface with a serrated darby or lightly wire rake to provide mechanical keying for the finish plaster when necessary.

Smooth Finish Over Basecoat

1. Apply only over properly prepared Kal-Kote Basecoat Plaster. Scratch-in tightly, then double back with material from the same batch immediately to create a uniform coat not exceeding 1/16" in average thickness.
2. Remove trowel marks, "cat faces," and other major surface imperfections by "drawing-up" or "laying down" the surface with light trowel pressure when plaster has stiffened. Use water sparingly if needed, but do not over-trowel or over-water because this aggravates any normal tendency for blistering when working over low suction bases. Such blistering will be eliminated by the final water-troweling operations.
3. Water-trowel to densify and polish the surface to the desired degree when plaster has set, eliminating any blistering if present. Never use a felt "blister brush" as a substitute for water troweling!
4. Uni-Kal and X-KALibur plaster may be substituted for Kal-Kote Smooth Finish.

Texture Finish Over Basecoat

1. Apply only over properly prepared Kal-Kote Basecoat. Scratch-in tightly, then double back with material from the same batch immediately to create a uniform coat not exceeding 1/16" (1.6 mm) in average thickness.
2. When plaster has stiffened, float its surface to the desired finish. Do not float the surface of plaster, which has already set. For texturing with Uni-Kal and X-KALibur, add up to equal parts of clean, graded silica sand.

UNI-KAL OR X-KALIBUR APPLICATION OVER KAL-KORE

1. Tightly scratch material into previously treated joints and corner beads, then immediately scratch-in tightly over the wall and/or ceiling area.
2. Double back over the area just troweled with material from the same batch bringing total thickness up to 3/32" maximum.
3. Begin finish troweling at time of initial set, using water sparingly. Final troweling must be accomplished before complete set takes place, as evidenced by darkening of the surface.

Note: Uni-Kal or X-KALibur may be applied to produce a textured finish.

A. When Uni-Kal or X-KALibur is mixed, add up to but not exceeding 50 lbs. of silica sand, texturing grade, per 50 lb. bag of plaster.

B. The sanded Uni-Kal or X-KALibur mix should be scratched-in tightly over the plastering base. Immediately double back over the area just troweled with material from the same batch.

C. When plaster is well taken up, float to the desired texture finish.

VENEER PLASTERS DIRECT TO BOND-COATED MONOLITHIC CONCRETE

Description

The Kal-Kote system, consisting of a basecoat plaster and a finish coat plaster, Uni-Kal or X-KALibur may be applied directly to monolithic concrete treated with a bonding agent.

Limitations

1. Surface to be plastered shall be treated with a bonding agent applied according to manufacturer's directions. The performance of this system is the sole responsibility of the bonding agent manufacturer.
2. Concrete should be aged at least one month prior to plastering.
3. Kal-Kote Smooth or Texture Finishes are not designed for direct application to concrete, but must first have Kal-Kote Basecoat Plaster applied to fill and level surface.
4. Do not apply system to the interior side of exterior walls below grade. To use above grade these walls shall be kept dry and shall have been properly waterproofed on the exterior side to prevent water penetration.

Painting Plaster

High build, heavy duty and special purpose coatings such as Epoxy are not recommended over veneer or job gauged lime putty finishes.

In all cases, the paint manufacturer should be consulted and approve paint system suitability for use with gypsum/lime finish plaster.

KAL-KOTE BASE APPLICATION OVER BONDING AGENT

1. First straighten any major surface irregularities, such as holes, ridges, wavy sections, etc. Scratch plaster in tightly by trowel and fill out to any adjacent level area.
2. After the straightening material has set, trowel in a tight scratch coat over the entire area to be plastered; then immediately double back with material from the same batch to minimum thickness of 1/16" or as required to achieve a level surface. Use a rod or feather edge if needed.
3. When plaster has "taken up", eliminate excessive trowel marks and fill all surface voids and imperfections to obtain a reasonably uniform surface. Do not trowel to a slick surface. Roughen the unset basecoat plaster surface with a serrated darby or lightly wire rake to provide mechanical keying for the finish plaster when necessary.

Smooth or Textured Finishes

Apply finishes to the Kal-Kote Basecoat Plaster as outlined under the regular Kal-Kote system as described on page 181.

UNI-KAL OR X-KALIBUR APPLICATION OVER BONDING AGENT

1. First straighten any major surface irregularities such as holes, ridges, wavy sections, etc. Scratch plaster in tightly by trowel and fill out to any adjacent level area.
2. Allow the straightening material to set.
3. Tightly scratch material in over the wall and/or ceiling area. This application should be about 1/16" thick. Double back over the area just troweled with material from the same batch bringing total thickness up to 3/32" minimum.
4. Begin finish troweling at time of initial set, using water sparingly. Final troweling must be accomplished before complete set takes place, as evidenced by darkening of the surface.

VENEER PLASTERS DIRECT TO UNIT MASONRY

Description

The Kal-Kote system, consisting of a basecoat plaster and a finish coat plaster, Uni-Kal or X-KALibur, and the one-coat system, may be applied direct to masonry surfaces providing the following recommendations are followed.

Recommendations

1. Surface must be free from dirt, grease, oil, mold, parting agents, or any material which will prevent plaster adhesion.
2. When erecting masonry, strike joints flush. If masonry has recessed joints, fill joints flush to masonry surface with basecoat plaster, Uni-Kal or X-KALibur and allow to set.

Exterior Corners: Install corner bead with adhesive at least 4 and preferably 16 hours before plastering. Apply a continuous bead of adhesive approximately 1/4" x 1/4" along the inside of both corner bead flanges. Press the bead firmly over the corner so that adhesive is in continuous contact with masonry surface. Align bead and allow to stand undisturbed at least 4 hours.

Kal-Kote Application

Note: Application shall conform to ASTM C843.

Proceed with the full field of the wall by scratching-in tightly, then double back immediately with material from the same batch to a minimum thickness of 1/16" over the block surface, or as required to level. Kal-Kote finishes should be kept as thin as possible and applied as described on page 180.

Uni-Kal or X-KALibur Application

Caution: Since Uni-Kal or X-KALibur is a one-coat material system, exercise care in leveling the wall to compensate for the uneven suction.

Proceed with full field of the wall by scratching-in tightly, then double back immediately with same batch of material to a minimum thickness of 3/32" over the block surface.

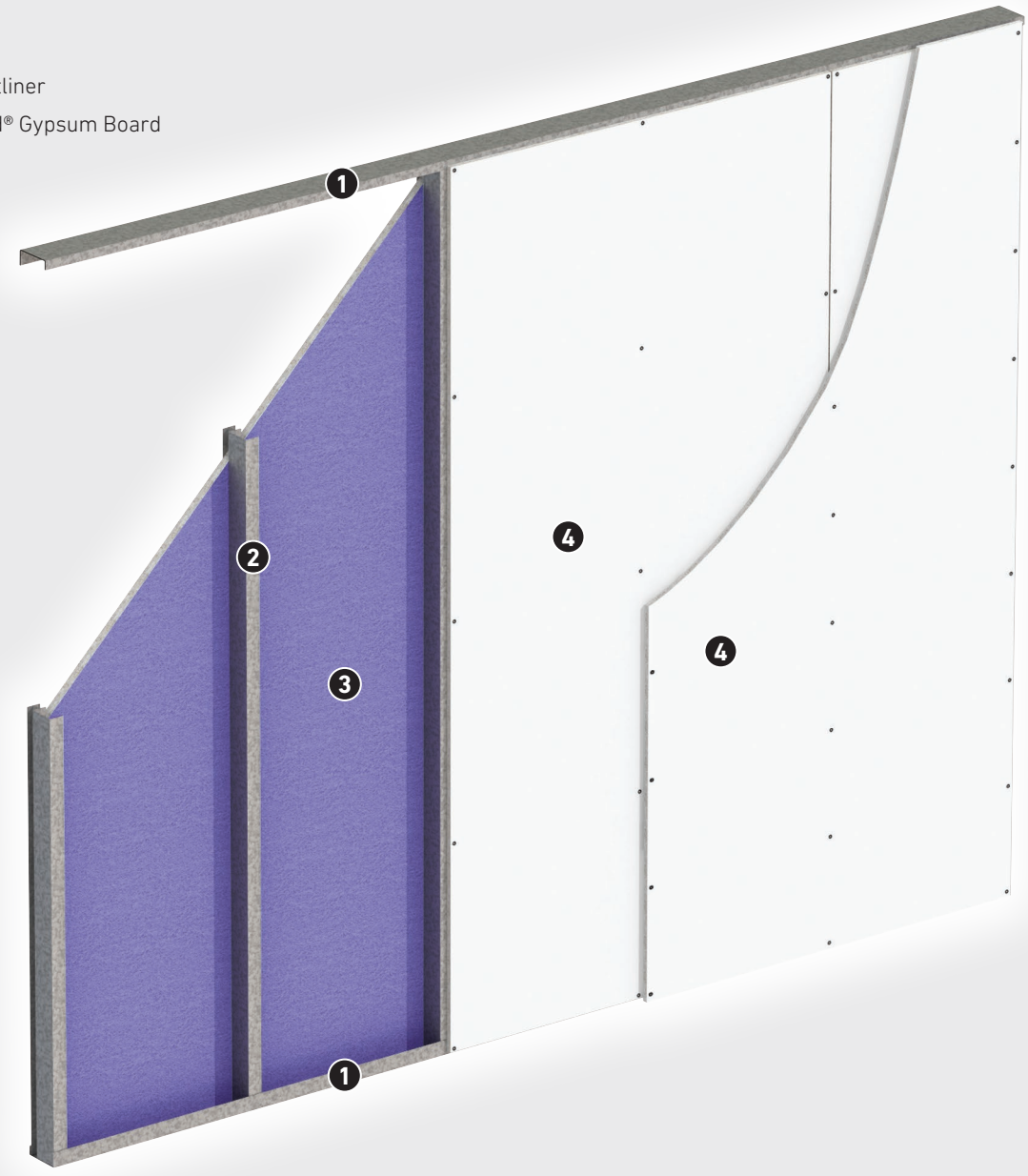
Cavity Shaftwall Systems

Cavity shaftwall systems are non-load-bearing, 1-hour to 4-hour, fire-rated partitions constructed from one side used to enclose elevator shafts, stairs and mechanical shafts. Cavity shaftwall systems can also be used as fire-rated, interior partitions where access is restricted to one side and as fire-rated, horizontal membranes.

CAVITY SHAFTWALL SYSTEM

U497 2-Hour (Fire Tested Both Sides)

1. J-Track
2. Stud
3. eXP® Shaftliner
4. Fire-Shield® Gypsum Board



Cavity Shaftwall Systems Installation

DESCRIPTION

The cavity shaftwall system consists of steel C-T, C-H or I-Studs and J-Tracks with 1" (25.4 mm) shaftliner panels friction fit between the studs. Single or multiple layers of Gold Bond® Fire-Shield® Gypsum Boards are applied to the face of the studs to complete the fire-rated assembly. Shaft enclosures can be framed with C-T, C-H or I-Studs with integral tabs and flanges that hold the panels in place and J-Track for runners at top, bottom, as well as vertically at partition ends and to frame openings.

Gold Bond Building Products, LLC produces two shaftliner products:

Gold Bond® Shaftliner XP® consists of a mold-, mildew- and moisture-resistant Type X gypsum core with a specially designed, 100% recycled PURPLE paper on the face and back sides.

Gold Bond® eXP® Shaftliner consists of a mold-, mildew- and moisture-resistant Type X gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides.

The double beveled edge configurations for these products allow for simple installation into the C-T, C-H or I-Studs.

Cavity shaftwall systems are the preferred method for the construction of shaft enclosures. In fact, it is now more common than traditional masonry shafts. The advantages of shaftwall include:

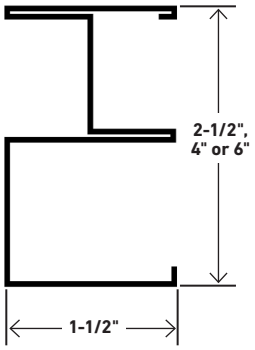
Lightweight. Masonry shaftwalls weigh 20 to 45 lbs. per square ft. (98 to 220 kg/m^2). By contrast, gypsum shaftwall assemblies weigh in at a remarkably low 10 to 13 lbs. per square ft. (49 to 63 kg/m^2).

Easy Installation. Shafts can be quickly enclosed with steel framing, and the Shaftliner panels can be installed from outside the shaft. This means the contractor need not erect scaffolding.

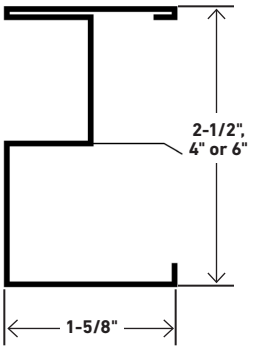
Weather Resistance. Shaftliner panels can be installed under conditions that would halt masonry work, including temperatures that are too cold for Portland cement mortar. For protection against wet weather during installation, Shaftliner XP is encased in a mold-, mildew- and moisture-resistant, 100% recycled PURPLE paper on the face and back sides. This system is not designed for long-term moisture exposure.

eXP Shaftliner is encased in a specially designed PURPLE fiberglass mat with superior moisture and mold resistance and backed by a 12-month exposure warranty.

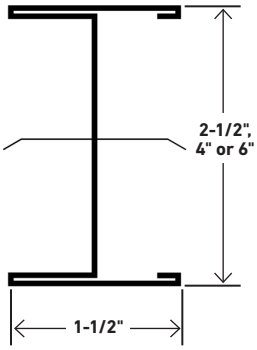
C-H STUD



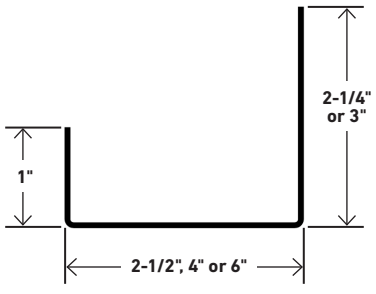
C-T STUD



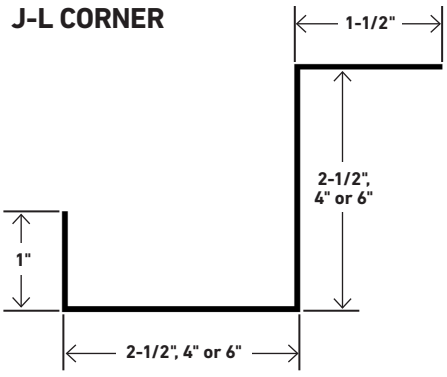
I-STUD



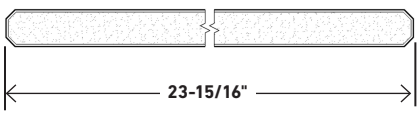
J-TRACK



J-L CORNER



SHAFTLINER



Sound and Fire Resistance. Cavity shaftwall systems provide excellent sound control and can achieve the fire ratings from one through four hours. For a full list of acoustical and fire-resistant assemblies, refer to the Fire and Sound Selector section.

Cost Savings. Best of all, cavity shaftwall systems are more economical than masonry shaft construction.

TECHNICAL DATA

Cavity shaftwall systems have non-load-bearing wall ratings of one hour through four hours and are listed in the *UL Fire Resistance Directory* as design Nos. U428, U429, U497, U498, U499 and W419 and in the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual* as file numbers WP 6700, WP 6751, WP 7035, WP 7061, WP 7062, WP 7064, WP 7065.2, WP 7066, WP 7066.1, WP 7079, WP 7266, WP 7424 and WP 7640.

The cavity shaftwall system has been evaluated for code compliance in *UL Evaluation Report UL ER R3501-02*.

Additionally, J-Track products are tested to rigorous standards. For example, a 25-gauge (.020" minimum steel thickness) J-Track exceeded 2,000,000 lateral load oscillation cycles in a test conducted to duplicate the positive and negative pressures created as elevator cabs rise and descend in a shaft.

Loading Performance. Although cavity shaftwall systems are non-load-bearing, this system has been designed and tested to withstand positive and negative air pressure forces exerted by high-speed, high-rise elevators.

Fire Resistance. Cavity shaftwall systems have been fire tested and have achieved fire-resistance ratings from one through four hours.

Sound Transmission. STC ratings of 40 to 56 have been achieved in tests conducted in accordance with ASTM E90. Refer to the Fire and Sound Selector section.

LIMITATIONS

1. Non-load-bearing.
2. Cavity shaftwall systems should not be used where exposed to constant dampness or conditions under which free water can be formed.
3. This system should not be exposed to temperatures over 125˚F (51.7˚C) for extended periods of time.
4. Where reference is made to nominal gauges, 25-gauge relates to minimum base steel of .020" (.457 mm) and 20-gauge to .0329" (.836 mm).

INSTALLATION

Shaftliner panels should be handled with care to prevent fracturing or deformation of edges.

Framing and Shaftliner Panels

1. Locate and lay out partition floor and ceiling lines to ensure plumb partition.
2. Ensure accurate stud spacing to maintain gypsum board face layer module.
3. Position top and bottom J-Track with long leg toward the shaft along ceiling, floor and vertically at column and/or wall where erection of shaftwall will begin. Attach with fasteners 24" (610 mm) o.c. max.
4. Frame all openings for ducts with J-Track as shown in accompanying details to protect cut gypsum core edges and to provide resistance to bending and other stresses.
5. Cut shaftliner panels 1" (25.4 mm) less than ceiling height and install first by placing outside vertical edge against long leg of vertical track, plumb and attach with Type S 1-5/8" (41.3 mm) screws 24" (610 mm) o.c.
6. Place studs within flanges of floor and ceiling track and rotate into place. Slide stud tabs and flanges snugly over edge of shaftliner previously installed.
7. Install next shaftliner panel between tabs and flanges of studs. Continue in this manner until end of partition run. Occasionally check spacing of studs to maintain 24" (610 mm) module.
8. At the end of the run, cut vertical J-Track at least 2" (50.8 mm) short of partition height. Cut shaftliner 1/4" (6.4 mm) less than remaining width of partition and 2" (50.8 mm) short of full height. Lay piece of shaftliner 2" (50.8 mm) wide x length of opening in floor track as support for last shaftliner panel. Fit cut edge of shaftliner into vertical track and, holding shaftliner and track together, slide paper-bound edge of shaftliner into stud. Align last panel and fasten the vertical track with fasteners 24" (610 mm) o.c. max. Fasten shaftliner to vertical track with 1-5/8" (41.3 mm) Type S or S-12 Screws 24" (610 mm) o.c.
9. Locate shaftwall horizontal end joints within the upper and lower third points of wall. Stagger joints in adjacent panels to avoid continuous horizontal joint. Shaftliner horizontal end joints do not require taping, back blocking or framing. When using I-Studs or C-T Studs, the shaftliner panels should be of sufficient length to engage a minimum of two tabs along the edge.

Gypsum Board

For a 2-hour fire rating, apply base layer 1/2" Fire-Shield C™ Gypsum Board or 5/8" Fire-Shield® Gypsum Board vertically to studs with 1" (25.4 mm) Type S screws 24" (610 mm) o.c. on side opposite shaftliner panel. Apply face layer 1/2" Fire-Shield C Gypsum Board or 5/8" Fire-Shield Gypsum Board vertically with 1-5/8" (41.3 mm) Type S screws 12" (305 mm) o.c. Stagger vertical and horizontal joints.

Refer to the Fire and Sound Selector section for more fire-rated assemblies using Gold Bond Building Products cavity shaftwall systems.

Caulking

Caulk cavity shaftwall system with an acoustical sealant wherever the wall is enclosing shafts where positive or negative air pressure exists. Caulk perimeter of wall and at any other place where voids create the possibility of moving air causing dust accumulation, noise or smoke leakage. Caulk in compliance with details specified by the architect or designer.

Air Shafts

The system is not designed to serve as an unlined air-supply duct. Caulking is recommended at perimeters and penetrations wherever the shaftwall system is used to enclose elevators or other shafts where positive or negative pressures will exist. The contractor installing this system should caulk in compliance with details specified by the architect or designer. Proper caulking will seal perimeters and penetrations to minimize air noises and dust associated with air movement.

Framing for Openings

Frame doors and duct openings with J-Track. Use adequate structural support for openings over 48" (1,219 mm) wide. For openings up to 48" (1,219 mm) wide, use vertical J-Track on either side of openings. For head and sill of openings, place J-Track horizontally across openings. Cut J-Track about 12" (305 mm) longer than openings. Then cut flanges and fold back to nest over vertical J-Track and fasten webs or flanges with two 3/8" (9.5 mm) Type S or 1/2" (12.7 mm) Type S-12 pan-head screws per connection. When nesting J-Track to J-Track, cut off the short flange of horizontal J-Track so it will fit over the vertical J-Track.

Chases

When possible, locate all vertical rise, conduit and stair hangers within wall cavity. If the cavity in the 2-1/2" (63.6 mm) stud wall is not of sufficient width, the 4" (102 mm) or 6" (152 mm) studs can be used.

Elevator Doors

Elevator door frames must be braced and supported independently of the shaftwall. However, the shaftwall must be tied into elevator oor frames by being attached to jamb and anchor clips with pan-head screws. The 3" (76.2 mm) leg, nominal 20-gauge J-Track shall be used at the juncture of the elevator door frame and the cavity shaftwall system.

Door frames (other than elevator door frames) should be formed from not less than 18-gauge steel, shop primed, with throat openings accurately formed to the nominal wall thickness plus 3/32" (2.4 mm). Frames must have trim returns not less than 7/16" (11.1 mm) in width to bear flush against the gypsum board surface. Floor anchor plates should be 14-gauge (min.) steel, firmly welded to frames and designed with not less than two anchor holes 3" (76.2 mm) o.c. minimum to prevent frame rotation.

Anchor plates should be securely fastened to the floor with fasteners having minimum dimensions of 3/16" (4.76 mm) diameter and 3/4" (19.1 mm) length. The type and size of fastener is dependent on job conditions, type of concrete or steel framing, and must be sufficient to provide rigid, continuous anchorage to the frames. Jamb anchor clips should be formed from minimum 18-gauge steel, and welded to jambs to provide adequate anchorage to jamb framing as shown on details. Elevator door frames must be fastened to and supported by the building structure, separately framed and independent of the partition. They should be securely anchored to the sills and to the building structure or to the track supports. Anchors or fastenings to suit the wall construction are required and should not be more than 24" (610 mm) apart.

Call Boxes and Position Indicators

Protect call boxes, position indicators and fireman switch as shown in drawings on the following pages.

Stair and Elevator Enclosures in High-Rise Buildings

High-rise buildings with an assigned risk category of III or IV and all buildings more than 420' (128 m) in height are required to have higher resistance to hard- and soft-body impact in accordance with ASTM C1629.

Stair and elevator enclosures in high-rise buildings with an assigned risk category of III or IV and all buildings more than 420 ft. (128 m) in height are required to have resistance to hard- and soft-body impact. The shaft enclosure is required to meet or exceed a soft-body impact classification level 2 in accordance with ASTM C1629 and have a layer of impact-resistant material with a hard-body impact classification level 3 in accordance with ASTM C1629.

Gold Bond® XP® Hi-Impact® Gypsum Board installed as the face layer on the tenant side of a 2-hour shaftwall meets both the hard- and soft-body impact requirements of the International Building Code.

2-Hour Horizontal Membrane

For a 2-hour horizontal membrane, 1" (25.4 mm) eXP® Shaftliner is inserted between the flanges of 4" (102 mm) 20-gauge steel C-T studs 24" (610 mm) o.c. A base layer of 5/8" Fire-Shield C™ Gypsum Board is applied at right angles to studs with 1" (25.4 mm) Type S screws 12" o.c. (305 mm). The second layer of 5/8" Fire-Shield C Gypsum Board is applied at right angles to studs with 1-5/8" (41.3 mm) Type S screws 12" o.c. (305 mm). The face layer of 5/8" Fire-Shield C Gypsum Board is applied with long dimension parallel to studs with 2-1/4" (57.2 mm) Type S screws 12" (305 mm) o.c.

For spans greater than 8' (2,438 mm), intermediate supports are constructed by fastening J-Tracks to each side of 6" (152 mm) steel track. The 6" (152 mm) steel track is suspended from the deck with 8-gauge steel wires 24" (610 mm) o.c. 2" x 6" (50.8 mm x 152 mm) strips of mineral wool insulation are draped over the J-Tracks on each side of the 6" (152 mm) track.

TABLE 1 – C-T STUD LIMITING HEIGHT: PER ICC-ES AC 86 1995

			Limiting Height (ft/in)			
			Design Pressure (psf)			
Framing Depth	**Minimum Steel**	**Deflection Limit**	**5**	**7.5**	**10**	**15**
2-1/2"	0.0231" 33,000 psi	L/120	16' 10"	13' 8"	11' 10"*	8' 6"*
		L/180	13' 8"	11' 3"	9' 10"	8' 3"
		L/240	11' 10"	9' 10"	8' 8"	7' 3"
		L/360	9' 10"	8' 3"	7' 3"	6' 2"
	0.0346" 33,000 psi	L/120	16' 10"	14' 4"	12' 11"	11' 1"
		L/180	14' 4"	12' 4"	11' 1"	9' 6"
		L/240	12' 11"	11' 1"	9' 11"	8' 7"
		L/360	11' 1"	9' 6"	8' 7"	7' 5"
	0.0451" 50,000 psi	L/120	17' 11"	15' 10"	14' 6"	12' 10"
		L/180	15' 10"	14' 0"	12' 10"	–
		L/240	14' 6"	12' 10"	–	–
		L/360	12' 10"	–	–	–
4"	0.0231" 33,000 psi	L/120	21' 8"	16' 6"*	12' 5"*	8' 3"*
		L/180	18' 1"	15' 3"	12' 5"*	8' 3"*
		L/240	16' 0"	13' 7"	12' 1"	8' 3"*
		L/360	13' 7"	11' 6"	10' 4"	8' 3"*
	0.0346" 33,000 psi	L/120	23' 0"	21' 0"	18' 7"	15' 5"**
		L/180	21' 0"	17' 9"	15' 10"	13' 6"
		L/240	18' 7"	15' 10"	14' 1"	12' 1"
		L/360	15' 10"	13' 6"	12' 1"	10' 4"
	0.0451" 50,000 psi	L/120	25' 7"	22' 2"	20' 0"	17' 4"
		L/180	22' 2"	19' 2"	17' 4"	15' 1"
		L/240	20' 0"	17' 4"	15' 8"	13' 7"
		L/360	17' 4"	15' 1"	13' 7"	11' 10"
6"	0.0346" 33,000 psi	L/120	30' 3"**	24' 9"**	20' 6"*	13' 8"*
		L/180	30' 3"	24' 9"**	20' 6"*	13' 8"*
		L/240	26' 6"	22' 2"	19' 7"	13' 8"*
		L/360	22' 2"	18' 8"	16' 7"	13' 8"*
	0.0451" 50,000 psi	L/120	36' 5"	30' 8"	27' 3"	23' 2"
		L/180	30' 8"	26' 0"	23' 2"	19' 9"
		L/240	27' 3"	23' 2"	20' 8"	17' 8"
		L/360	23' 2"	19' 9"	17' 8"	–

*Reduced for End Reaction Capacity. **Reduced for Flexural Strength Capacity.

1. The values in this table are based on testing per ICC-ES AC 86 and ASTM E72 and represent the limiting height capacity for strength using a 1.5 Safety Factor.
2. Minimum base steel thickness is 95% of design thickness.
3. Limiting Height values shown were assessed from the lowest Flexural Strength value of gypsum tested.

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TABLE 2 – ALLOWABLE WALL HEIGHTS[1,2] FOR NATIONAL GYPSUM 1-HR AND 2-HR I-STUD ASSEMBLIES[3]

			Transverse Design Load (psf)			
Wall System	**Steel Thickness (Gauge/Inch)**	**Deflection**	**5**	**7.5**	**10**	**15**
1 hour 2-1/2" Shaftwall	25 / 0.020"	L/120	13' 4"	11' 7"	10' 1"	8' 3"
		L/240	10' 7"	9' 3"	8' 5"	7' 4"
		L/360	9' 3"	8' 11"	7' 4"	6' 5"
1 hour 2-1/2" Shaftwall	20 / 0.0329"	L/120	15' 2"	13' 3"	12' 1"	10' 7"
		L/240	12' 1"	10' 7"	9' 7"	8' 4"
		L/360	10' 7"	9' 2"	8' 4"	7' 4"
1 hour 4" Shaftwall	25 / 0.020"	L/120	17' 11"	14' 10"	12' 10"	9' 9"
		L/240	14' 3"	12' 5"	11' 4"	9' 5"
		L/360	12' 5"	10' 10"	9' 5"	8' 3"
1 hour 4" Shaftwall	20 / 0.0329"	L/120	20' 0"	18' 2"	16' 6"	14' 3"
		L/240	16' 6"	14' 5"	13' 1"	11' 5"
		L/360	14' 5"	12' 7"	11' 5"	9' 4"
1 hour 6" Shaftwall	20 / 0.0329"	L/120	24' 0"	22' 10"	19' 9"	16' 2"
		L/240	20' 11"	18' 4"	16' 8"	14' 6"
		L/360	18' 4"	16' 0"	14' 6"	10' 11"
2 hour 2-1/2" Shaftwall	25 / 0.020"	L/120	14' 7"	12' 4"	10' 9"	8' 9"
		L/240	11' 7"	10' 1"	9' 2"	8' 0"
		L/360	10' 1"	8' 10"	8' 0"	7' 0"
2 hour 2-1/2" Shaftwall	20 / 0.0329"	L/120	17' 9"	15' 6"	14' 1"	12' 4"
		L/240	14' 1"	12' 4"	11' 2"	8' 9"
		L/360	12' 4"	9' 8"	8' 9"	7' 8"
2 hour 4" Shaftwall	25 / 0.020"	L/120	19' 10"	16' 3"	14' 0"	10' 2"
		L/240	16' 2"	14' 2"	11' 6"	10' 0"
		L/360	14' 2"	11' 0"	10' 0"	8' 9"
2 hour 4" Shaftwall	20 / 0.0329"	L/120	23' 2"	20' 2"	18' 1"	14' 9"
		L/240	18' 4"	16' 1"	14' 7"	11' 1"
		L/360	16' 1"	14' 0"	11' 1"	9' 8"
2 hour 6" Shaftwall	20 / 0.0329"	L/120	28' 0"	23' 11"	20' 9"	16' 11"
		L/240	22' 9"	19' 10"	18' 0"	12' 10"
		L/360	19' 10"	17' 4"	12' 10"	11' 2"
2 hour 2-1/2" Stairwell	25 / 0.020"	L/120	13' 11"	12' 2"	11' 0"	9' 8"
		L/240	11' 0"	9' 8"	8' 9"	7' 8"
		L/360	9' 8"	8' 5"	7' 8"	6' 8"
2 hour 2-1/2" Stairwell	20 / 0.0329"	L/120	16' 7"	14' 6"	13' 2"	11' 6"
		L/240	13' 2"	11' 6"	9' 10"	8' 7"
		L/360	11' 6"	10' 0"	8' 7"	7' 6"
2 hour 4" Stairwell	25 / 0.020"	L/120	20' 2"	17' 8"	16' 0"	11' 11"
		L/240	16' 0"	11' 11"	10' 10"	9' 5"
		L/360	11' 11"	10' 5"	9' 5"	8' 3"
2 hour 4" Stairwell	20 / 0.0329"	L/120	22' 3"	19' 6"	17' 8"	15' 6"
		L/240	17' 8"	15' 6"	14' 1"	10' 8"
		L/360	15' 6"	11' 9"	10' 8"	9' 4"
2 hour 6" Stairwell	20 / 0.0329"	L/120	28' 0"	24' 10"	22' 7"	19' 9"
		L/240	22' 7"	19' 9"	17' 11"	12' 3"
		L/360	19' 9"	13' 6"	12' 3"	10' 9"

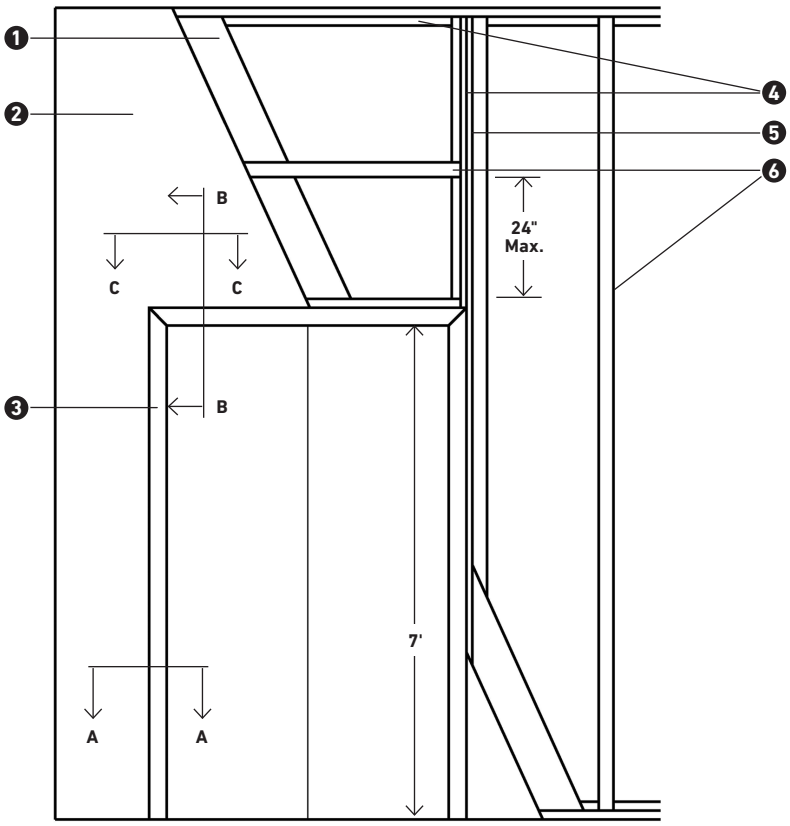
For SI: 1" = 25.4 mm
1' = 305 mm
1 psf = 48 Pa

1. Allowable heights are based on transverse load tests complying with AC86, dated July 1995, with studs spaced a maximum of 24" on center.
2. Limiting height is based on the lesser height of deflection or strength.
3. The hourly ratings indicate that the assemblies described by this table were constructed the same as the hourly fire-rated assemblies described in this report. The fire-rated assemblies were tested at 10' height as per standards ASTM E119 and UL263.

Elevator Shaftwall Enclosures

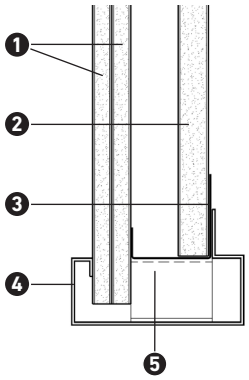
SHAFTWALL FRAMING FOR ELEVATOR DOORS – UP TO 7'-0"

1. 1" eXP Shaftliner or Shaftiner XP
2. Two Layers Fire-Shield Gypsum Board
3. Elevator Door Frame
4. 25-Ga. 2-1/4" Leg J-Track
5. 20-Ga. 3" Leg J-Track
6. C-T, C-H or I-Stud



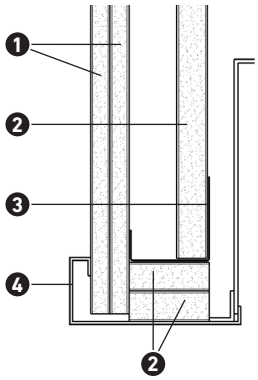
SHAFTWALL ELEVATOR DOOR JAMB (Section AA)

1. Fire-Shield Gypsum Board
2. 1" eXP Shaftliner or Shaftiner XP
3. 20-Ga. 3" Leg J-Track
4. Elevator Door Frame
5. Jamb Anchor Clip



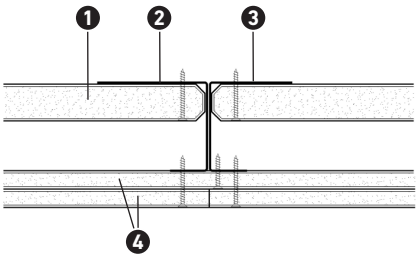
SHAFTWALL ELEVATOR DOOR HEAD (Section BB)

1. Fire-Shield Gypsum Board
2. 1" eXP Shaftliner or Shaftiner XP
3. 25-Ga. 2-1/4" Leg J-Track
4. Elevator Door Frame



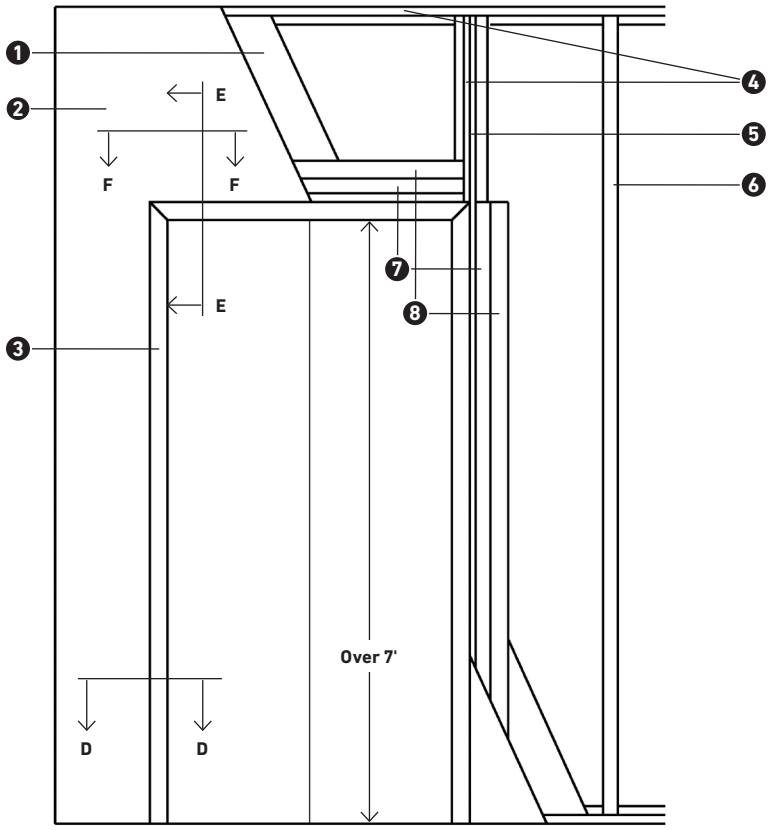
SHAFTWALL J-TRACK FRAMING ELEVATOR DOORS – UP TO 7'-0" (Section CC)

1. 1" eXP Shaftliner or Shaftiner XP
2. 20-Ga. 3" Leg J-Track
3. 25-Ga. 2-1/4" Leg J-Track
4. Fire-Shield Gypsum Board



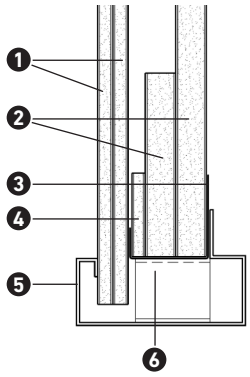
SHAFTWALL FRAMING FOR ELEVATOR DOORS – OVER 7'-0"

1. 1" eXP Shaftliner or Shaftiner XP
2. Two Layers Fire-Shield Gypsum Board
3. Elevator Door Frame
4. 25-Ga. 2-1/4" Leg J-Track
5. 20-Ga. 3" Leg J-Track
6. C-T, C-H or I-Stud
7. 1/2" Gypsum Board Filler
8. 1" Gypsum Board Filler



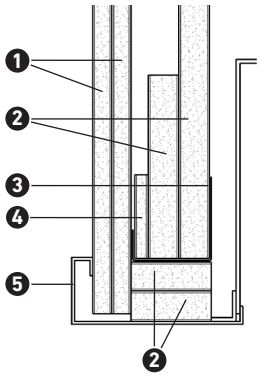
SHAFTWALL ELEVATOR DOOR JAMB (Section DD)

1. Fire-Shield Gypsum Board
2. 1" eXP Shaftliner or Shaftiner XP
3. 20-Ga. 3" Leg J-Track
4. 1/2" Fire-Shield C Gypsum Board
5. Elevator Door Frame
6. Jamb Anchor Clip



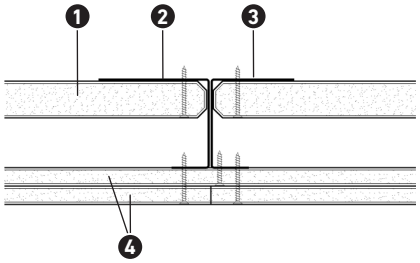
SHAFTWALL ELEVATOR DOOR HEAD (Section EE)

1. Fire-Shield Gypsum Board
2. 1" eXP Shaftliner or Shaftiner XP
3. 25-Ga. 2-1/4" Leg J-Track
4. 1/2" Fire-Shield C Gypsum Board
5. Elevator Door Frame



SHAFTWALL J-TRACK FRAMING ELEVATOR DOORS – OVER 7'-0" (Section FF)

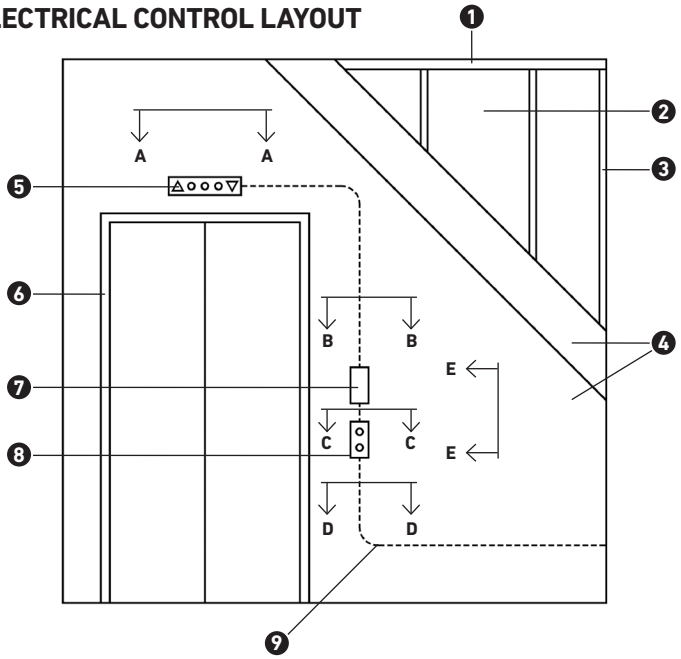
1. 1" eXP Shaftliner or Shaftiner XP
2. 20-Ga. 3" Leg J-Track
3. 25-Ga. 2-1/4" Leg J-Track
4. Fire-Shield Gypsum Board



Technical Details

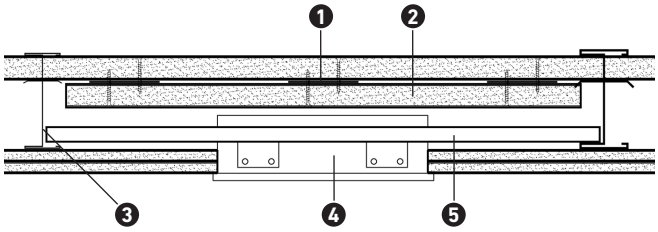
SHAFTWALL ELEVATOR ELECTRICAL CONTROL LAYOUT

1. J-Track
2. 1" eXP Shaftliner or Shaftliner XP
3. C-T, C-H or I- Stud
4. Fire-Shield Gypsum Board
5. Position Indicator
6. Elevator Door Frame
7. Fireman Switch
8. Call Box
9. Conduit



SHAFTWALL POSITION INDICATOR BOX (Section AA)

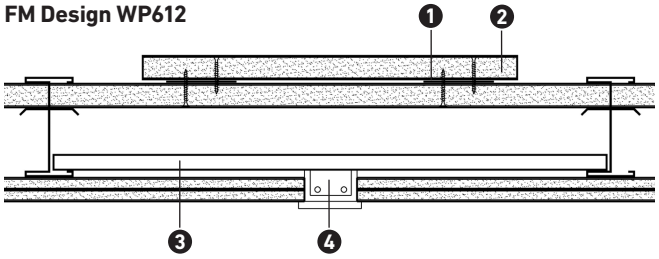
FM Design WP612



1. 25-Ga. x 3" x 14" Sheet Steel
2. 1" x 22" x 16" eXP Shaftliner or Shaftliner XP
3. 4" Shaftwall Stud
4. Position Indicator
5. 3/4" C.R. Channel

SHAFTWALL FIREMAN SWITCH (Section BB)

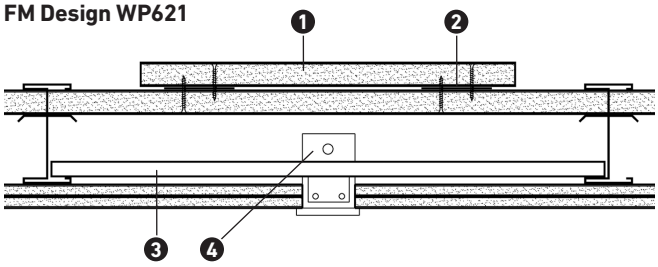
FM Design WP612



1. 25-Ga. x 3" x 14" Sheet Steel
2. 1" x 22" x 16" eXP Shaftliner or Shaftliner XP
3. 3/4" C.R. Channel
4. Fireman Switch

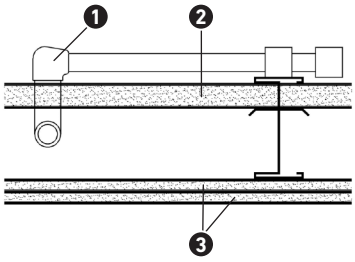
SHAFTWALL CALL BOX (Section CC)

FM Design WP621



1. 1" x 16" x 30" eXP Shaftliner or Shaftliner XP
2. 25-Ga. x 3" x 28" Sheet Steel
3. 3/4" C.R. Channel
4. Call Box

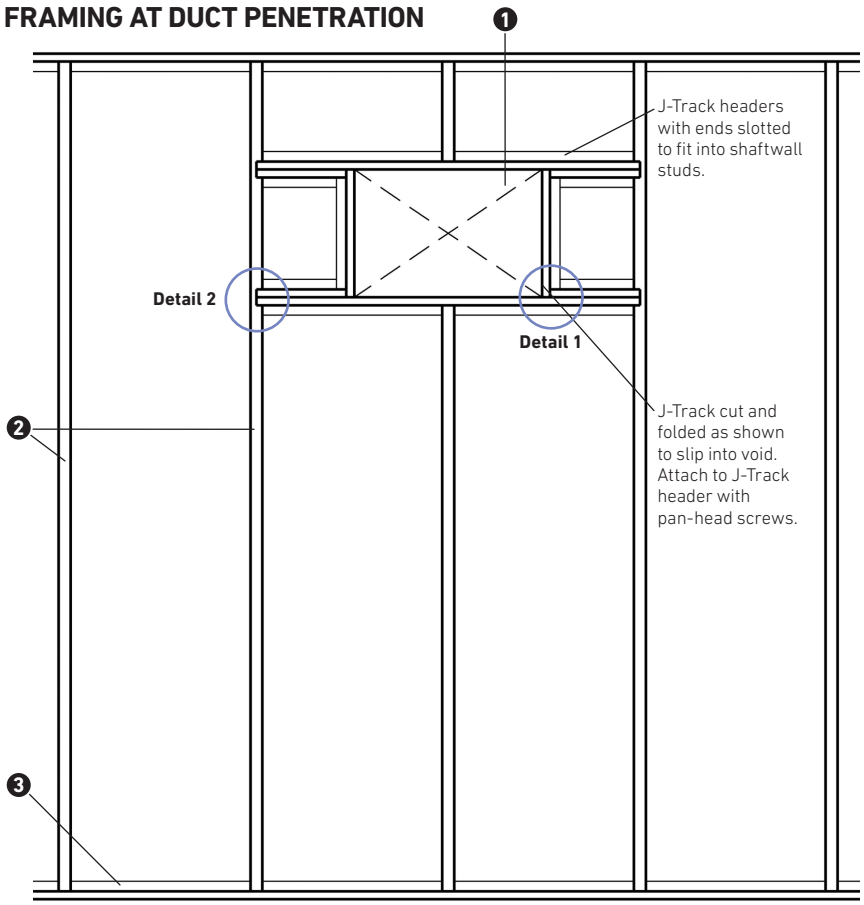
SHAFTWALL WITH CONDUIT (Section DD)

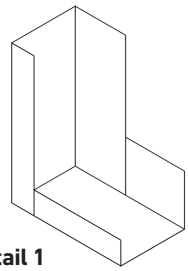


1. Rigid Elbow and Conduit
2. 1" eXP Shaftliner or Shaftliner XP
3. Fire-Shield Gypsum Board

SHAFTWALL FRAMING AT DUCT PENETRATION

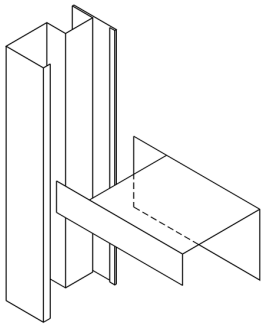
1. Duct
2. Shaftwall Stud
3. J-Track





Detail 1

J-Track cut and folded to frame duct and fastened with pan-head screws.



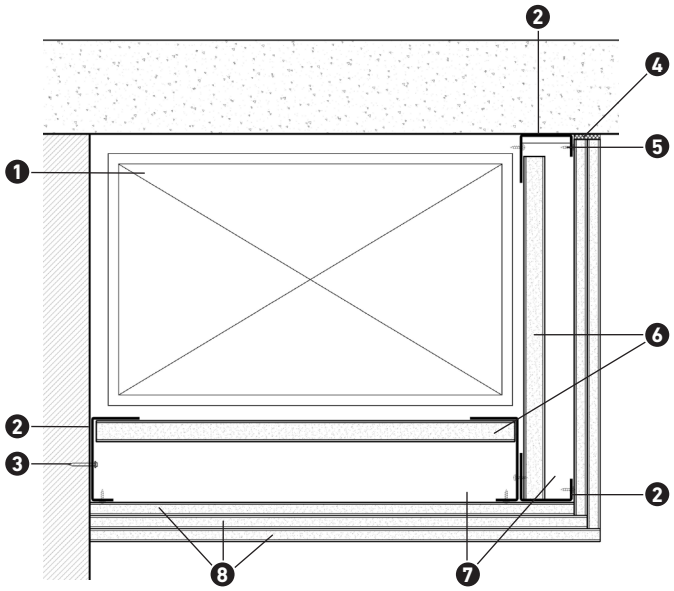
Detail 2

Cut web from J-Track to receive C-T Stud and fasten with pan-head screws.

2-HOUR HORIZONTAL DUCT PROTECTION

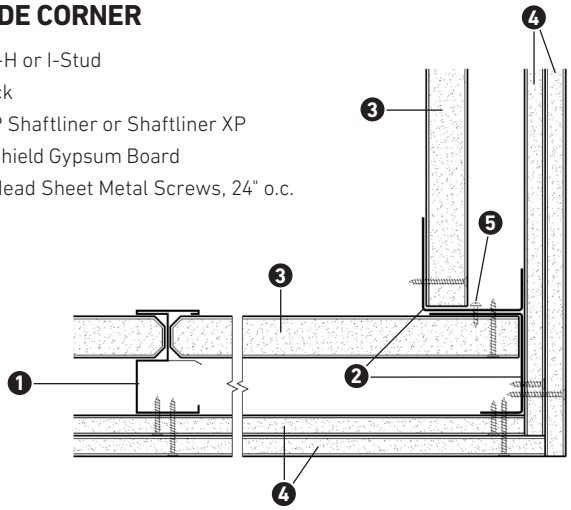
UL Design G586

1. Duct
2. J-Track
3. Fasteners 24" o.c.
4. Flexible Sealant
5. 1/2" Type S or S-12 Pan-Head Screws (2 per Stud)
6. 1" eXP Shaftliner or Shaftliner XP
7. C-T Stud 24" o.c.
8. 5./8" Fire-Shield C Gypsum Board



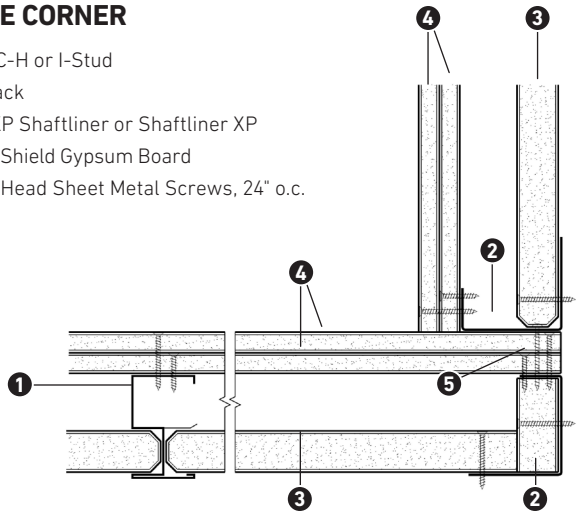
OUTSIDE CORNER

1. C-T, C-H or I-Stud
2. J-Track
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board
5. Pan-Head Sheet Metal Screws, 24" o.c.



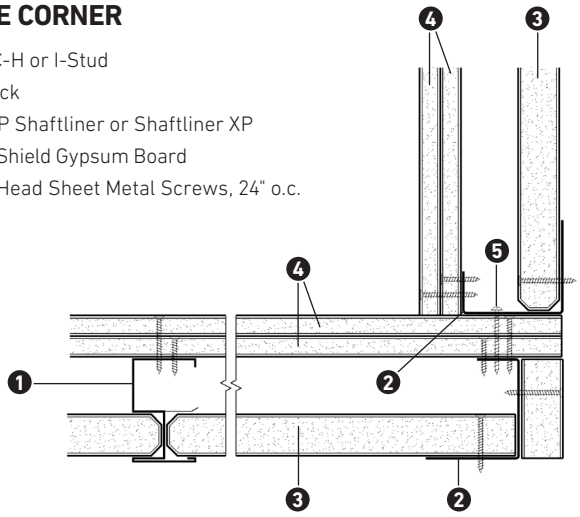
INSIDE CORNER

1. C-T, C-H or I-Stud
2. J-Track
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board
5. Pan-Head Sheet Metal Screws, 24" o.c.



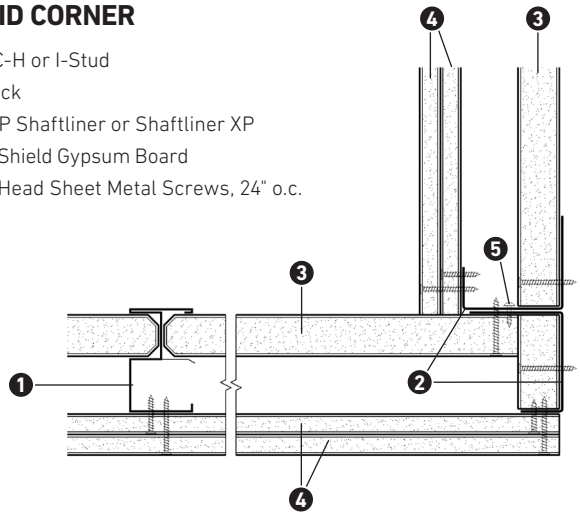
INSIDE CORNER

1. C-T, C-H or I-Stud
2. J-Track
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board
5. Pan-Head Sheet Metal Screws, 24" o.c.



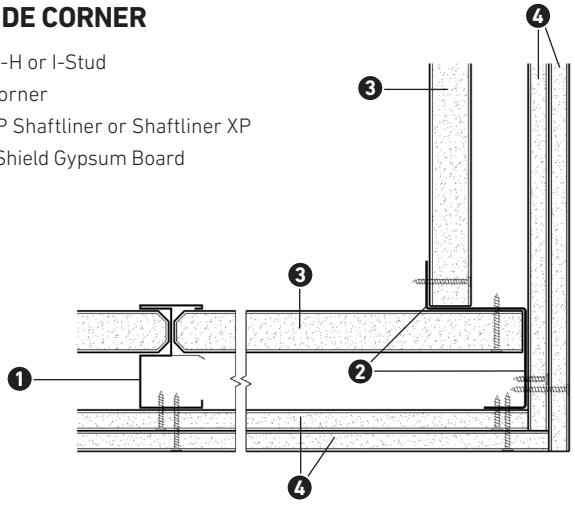
HYBRID CORNER

1. C-T, C-H or I-Stud
2. J-Track
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board
5. Pan-Head Sheet Metal Screws, 24" o.c.



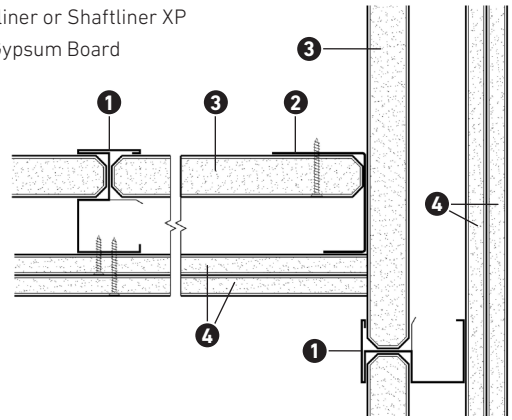
OUTSIDE CORNER

1. C-T, C-H or I-Stud
2. J-L Corner
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board



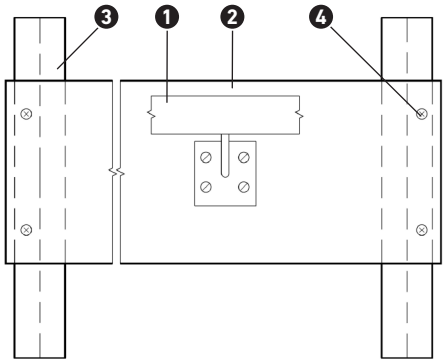
SHAFTWALL INTERSECTION

1. C-T, C-H or I-Stud
2. J-Track
3. 1" eXP Shaftliner or Shaftliner XP
4. Fire-Shield Gypsum Board



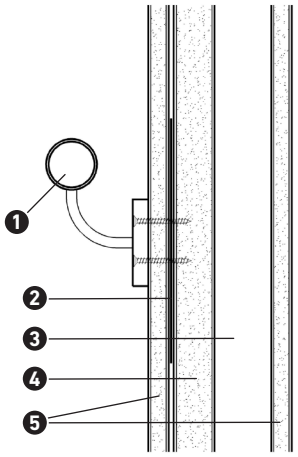
HANDRAIL SUPPORT ELEVATION

1. Handrail
2. 20-Ga. x 6" x 26" Sheet Metal Plate
3. C-T, C-H or I-Stud
4. Pan-Head Sheet Metal Screws



HANDRAIL SUPPORT DETAILS

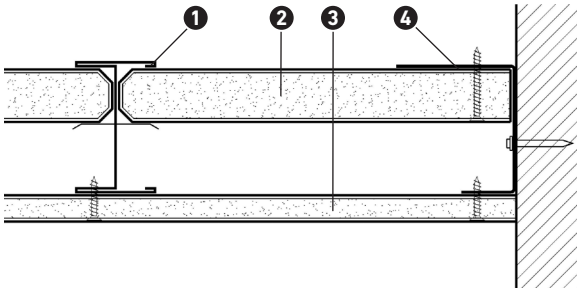
1. Handrail
2. 20-Ga. x 6" x 26" Sheet Metal Plate
3. C-T, C-H or I-Stud
4. 1" eXP Shaftliner or Shaftliner XP
5. Fire-Shield Gypsum Board



1-HOUR HORIZONTAL SHAFTWALL – CORRIDOR CEILING AND STAIR SOFFIT

UL Evaluation Report
UL ER R3501-02

1. I-Stud, 24" o.c.
2. 1" eXP Shaftliner or Shaftliner XP
3. 5/8" Fire-Shield Gypsum Board
4. J-Track



2-HOUR HORIZONTAL SHAFTWALL – CORRIDOR CEILING AND STAIR SOFFIT

UL Evaluation Report
UL ER R3501-02

1. I-Stud, 24" o.c.
2. 1" eXP Shaftliner or Shaftliner XP
3. 5/8" Fire-Shield Gypsum Board
4. J-Track

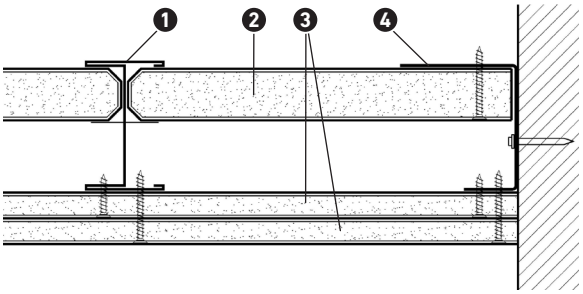


TABLE 3 – MAXIMUM HORIZONTAL SPANS[1,2]

	Corridor Ceilings and Underside of Stairs			Horizontal Membrane and Duct Protection
I-Stud Size and Thickness (Inches/Gauge)	**Side 1: One layer of 5/8" gypsum board. Side 2: One layer of 1" Shaftliner.**	**Side 1: Two layers of 1/2" gypsum board. Side 2: One layer of 1" Shaftliner.**	**Side 1: Two layers of 5/8" gypsum board. Side 2: One layer of 1" Shaftliner.**	**Side 1: Three layers of 1/2" gypsum board. Side 2: One layer of 1" Shaftliner.**
2-1/2" (25)	7' 8"	7' 8"	7' 7"	5' 4"
2-1/2" (20)	8' 8"	9' 4"	9' 2"	5' 4"
4" (25)	10' 3"	10' 9"	10' 7"	5' 4"
4" (20)	11' 9"	12' 1"	11' 11"	5' 4"
6" (20)	14' 10'	14' 10"	14' 8"	5' 4"

For SI: 1" = 25.4 mm
1' = 305 mm

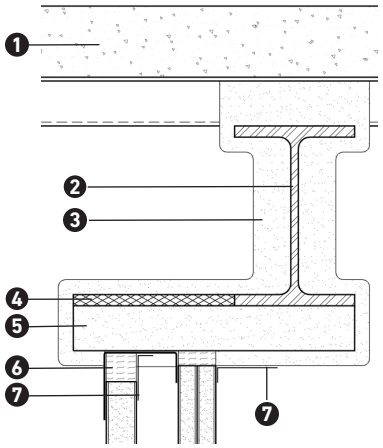
Refer to UL Evaluation Report R3501-02.

1. Calculations based on systems supporting twice their own dead weights and should not be used where there is access to an attic or loft space above, or anywhere there is any probability of storage above.
2. Spans are based upon a deflection limitation of L/240.

SHAFTWALL OFFSET FROM STEEL BEAM

UL Design HW-D-0645
UL Design HW-D-0636

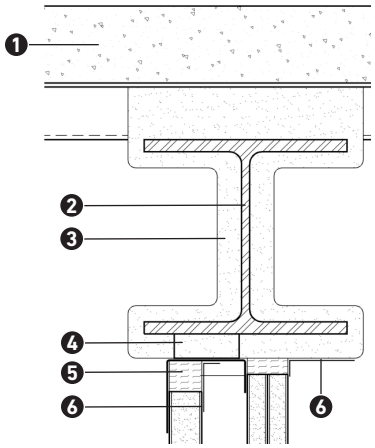
1. Concrete on Fluted Steel Deck
2. Steel Beam
3. Spray-Applied Fire-Resistive Material
4. 3/8" Diamond Mesh Expanded Steel Lath
5. 1-1/2" Z-Furring or Channels 24" o.c.
6. Mineral Wool Insulation
7. Elastomeric Spray Firestop



2-HOUR SHAFTWALL PARTITION TO STEEL BEAM

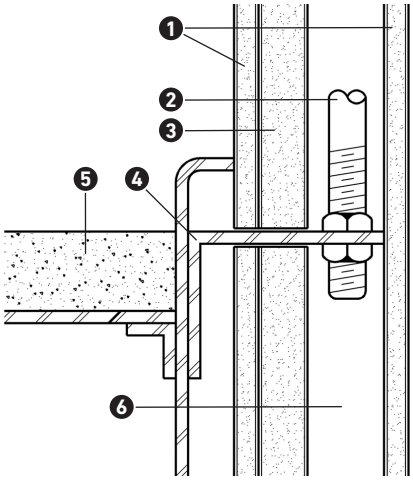
UL Design HW-D-0642
UL Design HW-D-0571

1. Concrete on Fluted Steel Deck
2. Steel Beam
3. Spray-Applied Fire-Resistive Material
4. 20-Gauge Z-Clips 24" o.c. max. (Fasten Before Application of Spray-on Fireproofing)
5. Mineral Wool Insulation
6. Elastomeric Spray Firestop



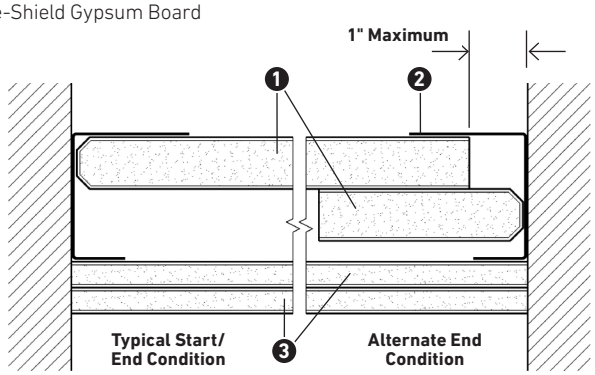
STAIR HANGER ROD

1. Fire-Shield Gypsum Board
2. Steel Hanger Rod
3. 1" eXP Shaftliner or Shaftliner XP
4. Steel Angle Bracket
5. Stair Landing
6. C-T, C-H or I-Stud



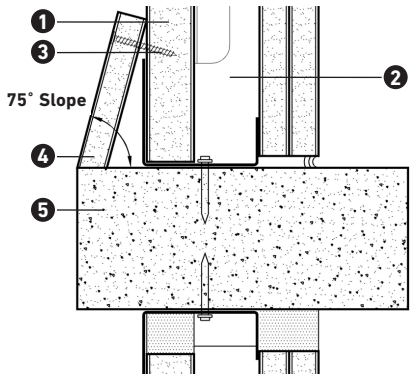
START-END CONDITION

1. 1" eXP Shaftliner or Shaftliner XP
2. J-Track
3. Fire-Shield Gypsum Board



SHAFT CANTS

1. 1" eXP Shaftliner or Shaftliner XP
2. C-T, C-H or I-Stud
3. Cants Screwed to Shaftwall Studs
4. Gypsum Board Cant Strips Generally Required to Prevent Ledges More Than 2" Wide
5. Floor Slab

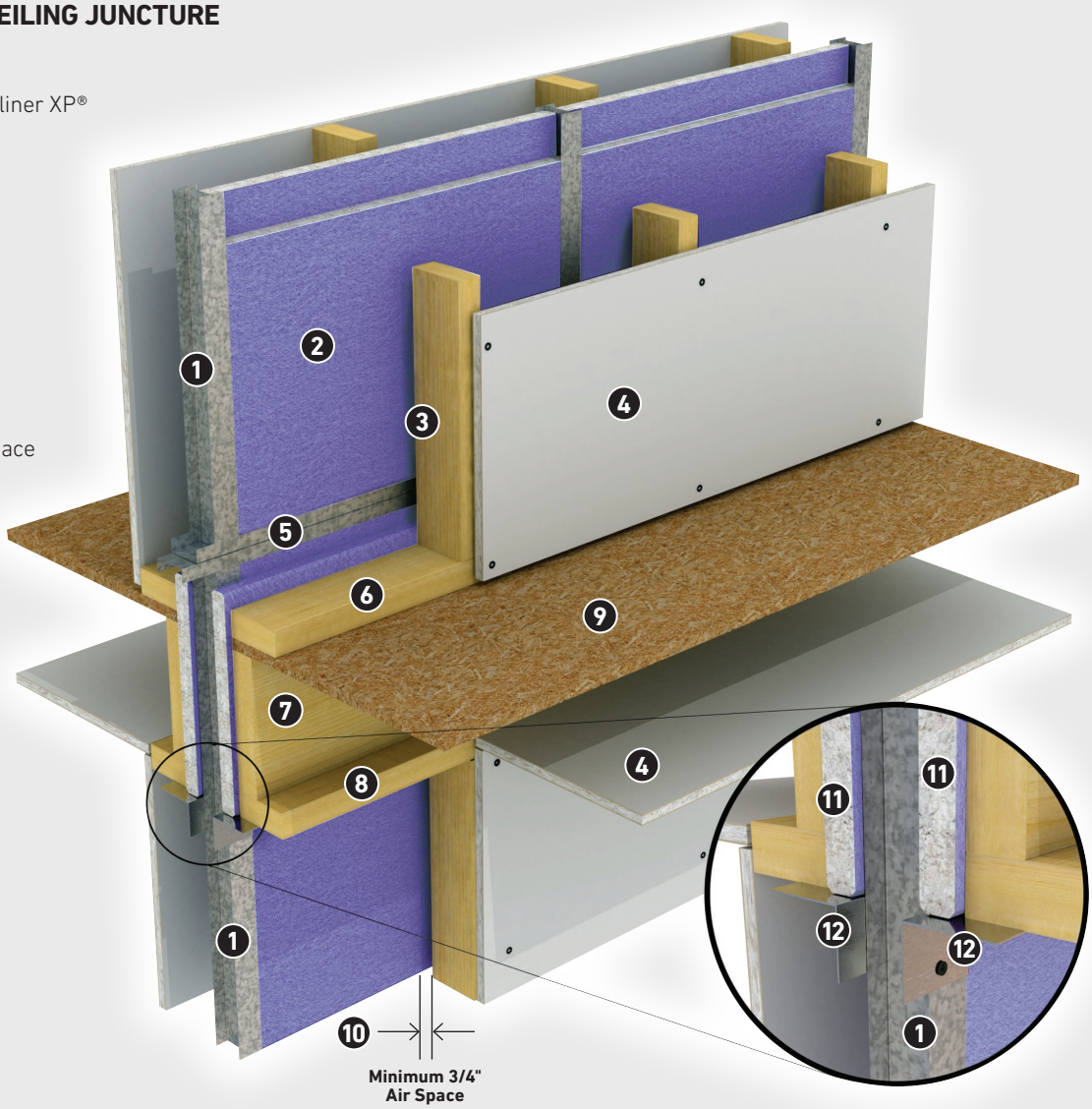


2-Hour Area Separation Wall System

The 2-hour area separation wall system is a 2-hour fire wall consisting of 2" (50.8 mm) light-gauge steel H-Studs that secure two layers of 1" (25.4 mm) shaftliner panels friction-fit between studs and a minimum 3/4" (19.1 mm) air space on each side.

TYPICAL FLOOR/CEILING JUNCTURE

1. H-Stud
2. Two Layers 1" Shaftliner XP®
3. Wood Stud
4. Gypsum Board
5. Double C-Track (Back-to-Back)
6. Bottom Plate
7. Rim Joist
8. Top Plate
9. Subfloor
10. Minimum 3/4" Air Space
11. Fire Blocking 1" eXP® Shaftliner or Mineral Wool
12. ASW Clip



DESCRIPTION

Gold Bond Building Products, LLC produces two shaftliner products for use in the 2-hour area separation wall system:

Gold Bond® Shaftliner XP® consists of a mold-, mildew- and moisture-resistant Type X gypsum core with a specially designed, 100% recycled PURPLE paper on the face and back sides.

Gold Bond® eXP® Shaftliner consists of a mold-, mildew- and moisture-resistant Type X gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides.

The steel H-Studs are attached on each side to adjacent framing with aluminum ASW break-away clips. The clips melt when exposed to heat and allow the collapse of the fire-exposed unit without failure of the area separation wall.

The H-Studs are secured at the foundation by the flanges of the C-Track. The same track is used back-to-back at intermediate floors to provide a splicing means so that the system can be erected one floor at a time. C-Tracks are also used at the roof line or at the parapet and at the ends of walls.

For a 2-hour, fire-rated assembly without the need for battens, maintain a minimum 3/4" (19.1 mm) air space between the H-Stud assembly and any adjacent framing members. When you cannot maintain a minimum 3/4" (19.1 mm) air space, cover the H-Studs and C-Tracks by gypsum board battens. In lieu of battens, fasten gypsum board to the H-Studs, and treat joints with tape and joint compound to provide a finished wall surface.

Wood- or steel-stud flanking walls on each side of the area separation wall system can be load-bearing and can accommodate mechanical, electrical and plumbing systems. Install mineral wool or glass fiber insulation to provide higher STC ratings.

TECHNICAL DATA

The area separation wall system has a non-load-bearing wall rating of 2 hours and is listed in the *UL Fire Resistance Directory* as Design No. U347 and in the Gypsum Association's GA-600 *Fire Resistance and Sound Control Design Manual* as file numbers ASW 0800, ASW 0981 and ASW 0998.

The area separation wall system has been evaluated for code compliance in *UL Evaluation Report UL ER R3501-01.*

The area separation wall system may be built up to a maximum of 66' (20.1 m) high.

Do not use the area separation wall system where exposure to constant dampness and/or water may occur.

Although steel framing and Gold Bond® eXP® Gypsum Panels can withstand temporary exposure to moisture during construction, protect the finished wall as soon as possible.

Protect insulation in the area separation wall from getting wet. Do not install until the building is enclosed.

Properly store materials supplied to the jobsite, support off the ground, and protect from inclement weather.

INSTALLATION

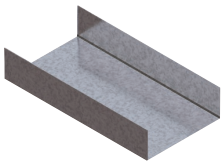
1. Attach 2" (50.8 mm) C-Tracks to the top of the foundation 3/4" (19.1 mm) from the adjacent framed wall with fasteners spaced 24" (610 mm) o.c. Apply acoustical sealant along edges of track to minimize sound transmission.
2. Install C-Track on the ends of stepped foundation walls aligned with the area separation wall and, if applicable, with fasteners 24" (610 mm) o.c. Caulk edges as with the floor track.
3. At the intersection of foundation and the exterior wall, begin erecting area separation wall by inserting first layer of 1" (25.4 mm) shaftliner into C-Track. Insert second layer back-to-back with first layer and seat into C-Track. Shaftliner and studs may be set into position from the basement floor or fed down through the space provided between the wood framing from the floor above. Cap the terminating edge of the shaftliner panels with a vertical C-Track at the end of the foundation and fasten to the floor track with 3/8" (9.5 mm) Type S pan-head screws.
4. Insert an H-Stud into the C-Track and engage the H-Stud flanges over the long edges of the shaftliner panels, making sure that both pieces of shaftliner are seated all the way into the C-Tracks and that their edges are flush. Seat the H-Stud fully so the board edges contact the stud web.
5. Continue in this manner, alternating two layers of shaftliner and H-Studs with the flanges of the H-Studs engaging the shaftliner edges until the wall is completed. Again, make sure all studs and boards are tightly pushed together. H-Studs may be fastened to C-Track with 3/8" (9.5 mm) Type S pan-head screws to assist with installation.
6. Where the area separation wall forms a corner, cap the ends of the shaftliner panels with a vertical C-Track and fasten to the floor track with 3/8" (9.5 mm) pan-head screws. Fasten a C-Track to the foundation or floor at a right angle to the installed area separation wall with fasteners 24" (610 mm). Fasten the web of another vertical C-Track to the flange of the installed vertical C-Track capping the edges of the shaftliner panels with 3/8" (9.5 mm) pan-head screws 24" o.c. to create the corner. Continue installing shaftliner panels and H-Studs in the same manner.
7. If the area separation wall terminates at a foundation wall, insert the last two shaftliner panels from the floor above. Boards are pushed down into the channel formed by the flanges of the previous H-Stud and the flanges of the wall track.
8. If the area separation wall terminates at or past a framed wall, insert the last shaftliner panels and cap the end of the area separation wall with 2" (50.8 mm) C-Track. Fasten C-Track flanges at all corners on both sides with 3/8" (9.5 mm) Type S pan-head screws.
9. Where one unit extends past the adjacent unit, there are two methods for constructing the area separation wall. The first option is to continue the area separation wall to the farthest point of the building. Fasten 1/2" (12.7 mm) plywood or OSB to the H-Studs with Type S screws 12" (305 mm) to apply vinyl siding or cement board siding. The second option is to terminate the area separation wall at the end of the common wall and construct a 1-hour wall to the farthest point of the building.

AREA SEPARATION WALL LIMITING HEIGHTS

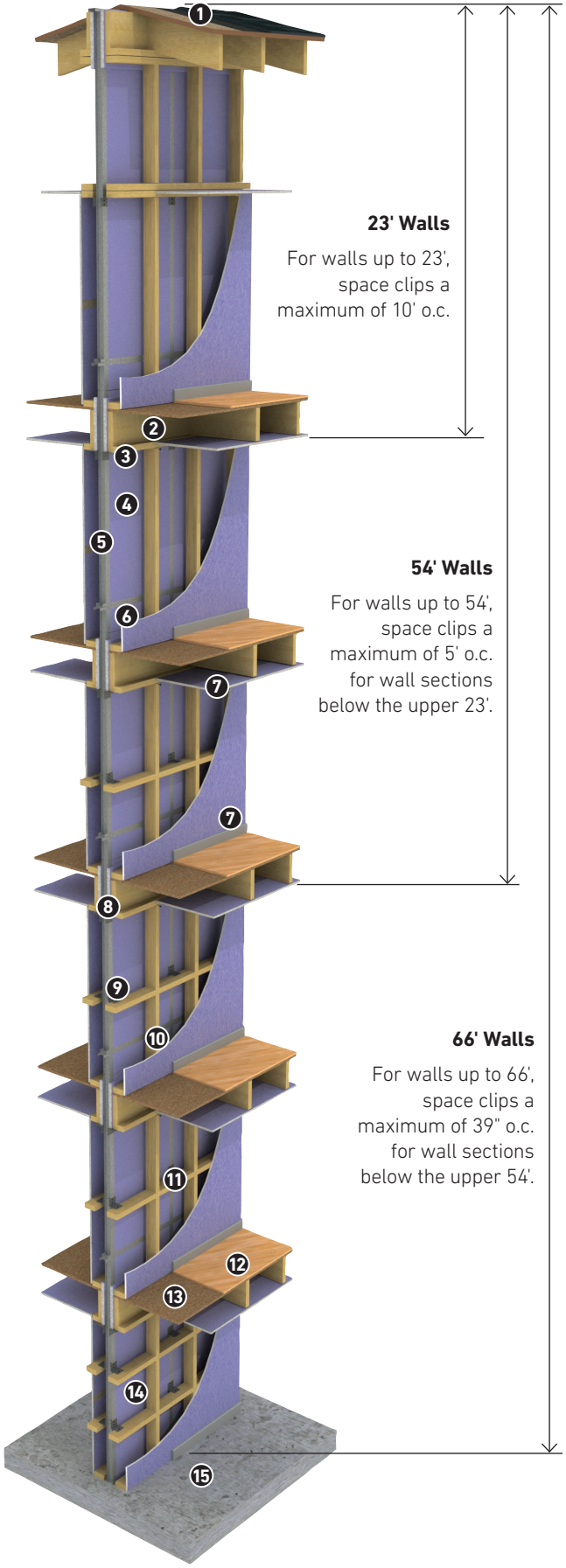
1. Roof
2. Rim Joist
3. Top Plate
4. Two Layers eXP® Shaftliner
5. H-Stud
6. Double C-Track (Back-to-Back)
7. XP® Gypsum Boards
8. Fire Blocking 1" eXP® Shaftliner or Mineral Wool
9. ASW Clip
10. Wood Stud
11. Horizontal Blocking
12. Finish Floor
13. Subfloor
14. Minimum 3/4" Air Space
15. Concrete Slab or Foundation

ASW Clip

H-Stud



C-Track



23' Walls

For walls up to 23', space clips a maximum of 10' o.c.

54' Walls

For walls up to 54', space clips a maximum of 5' o.c. for wall sections below the upper 23'.

66' Walls

For walls up to 66', space clips a maximum of 39" o.c. for wall sections below the upper 54'.

10. Where one unit extends vertically past the adjacent unit, extend the area separation wall to the uppermost point of the building. Fasten 1/2" (12.7 mm) plywood or OSB to the H-Studs with Type S screws 12" (305 mm) to apply vinyl siding or cement board siding.

11. Cap the top edge of the erected wall with 2" (50.8 mm) C-Track over studs and shaftliner. C-Track may be fastened to H-Studs with 3/8" (9.5 mm) Type S pan-head screws to assist with installation.

12. Where another area separation wall intersects the installed area separation wall, fasten a C-Track to the foundation or floor at a right angle to the installed area separation wall with fasteners 24" (610 mm). Attach the web of a vertical C-Track to the flange of an H-Stud with 3/8" (9.5 mm) pan-head screws 24" (610 mm) o.c. Continue installing shaftliner panels and H-Studs in the same manner.

13. Attach H-Studs to adjacent framing with ASW clips. Fasten the clips to the H-Studs with one 3/8" (9.5 mm) Type S pan-head screw through the short leg of the clip. Attach the ASW clips directly to the H-Studs or through the gypsum board battens to the studs. Attach clips to adjacent framing with one 1-1/4" (31.8 mm) Type W screw for wood and Type S screw for steel.

14. Maintain a minimum 3/4" (19.1 mm) air space between the H-Stud assembly and any adjacent framing members. When you cannot maintain a 3/4" (19.1 mm) air space, cut gypsum board batten strips from pieces of 1/2" Fire-Shield C™ Gypsum Board or 5/8" Fire-Shield® Gypsum Board and install over H-Studs and C-Tracks. 3" (76.2 mm) wide battens are installed over C-Track at foundation and roof. 6" (152 mm) wide battens are fastened to the H-Studs with 1" (25.4 mm) Type S screw 12" (305 mm) o.c. screwed into alternate flanges of the H-Studs.

15. Attach 2" (50.8 mm) C-Track to the installed track capping off the wall of the lower floor. This back-to-back track installation allows you to erect the area separation wall one floor at a time. Secure the two tracks together with two 3/8" (9.5 mm) Type S pan-head screws 24" (610 mm) o.c. Stagger back-to-back track joints a minimum of 12" (305 mm).

16. For applications where a floor overhangs the floor below, the C-Track can be cantilevered 24" (610 mm) from the C-Track, capping the wall of the lower floor. A 36" (914 mm) cantilever can be achieved in the same manner when diagonal steel strapping is applied to each side of the wall.

17. For additional vertical sections, erect shaftliner and H-Studs in the same manner as the basement wall, steps 4-10, except that starting and ending procedures vary depending on the exterior wall intersection detail.

18. At the roof intersection, cap the walls with C-Tracks abutting the underside of the roof sheathing. C-Tracks can be fastened to H-Studs with 3/8" (9.5 mm) Type S pan-head screws to assist with installation. Fasten H-Studs to framing with ASW clips at the roof line.

19. Provide fire blocking at intermediate floors, roof locations, and horizontally every 10' (3,048 mm). Use mineral wool, gypsum board or non-combustible, spray-firestop sealants.

20. The 2" (50.8 mm) area separation wall system can be finished in a variety of ways, depending on wall installation. Wood stud or steel stud walls flanking the area separation wall may be finished in any method specified. Where appearance is not critical and flanking walls are not installed, the area separation wall and battens may be left unfinished.

RECOMMENDATIONS

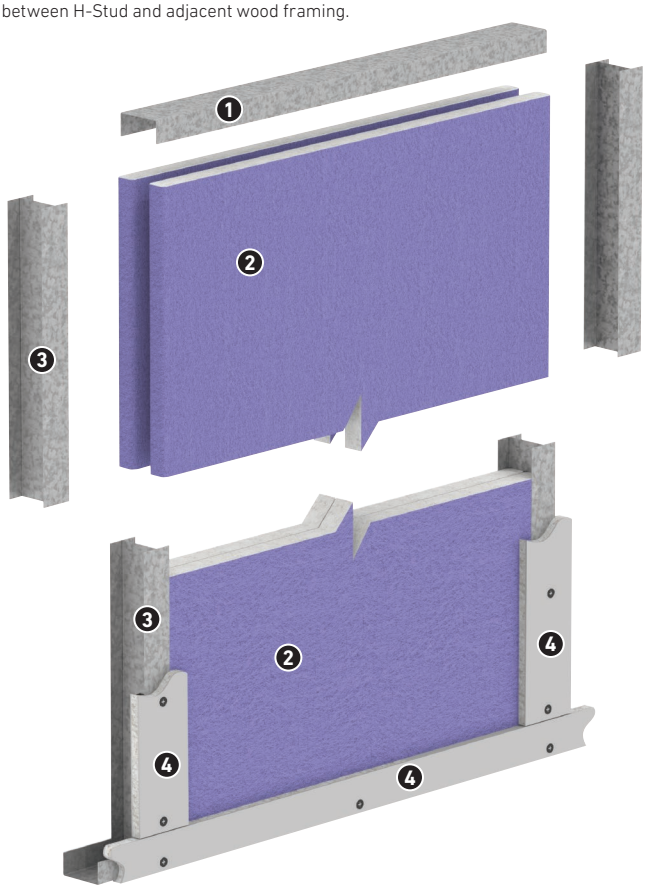
Order H-Studs and 1" eXP Shaftliner or Shaftliner XP according to the following:

1. Basement wall section – length equal to distance from foundation to approximately 3" (76.2 mm) above the first floor line.
2. Intermediate floors – length equal to the distance between floor lines.
3. Top floor or attic – length to extend to top of parapet wall or to roof intersection, depending on detail.

BASIC COMPONENTS OF 2-HOUR AREA SEPARATION WALL

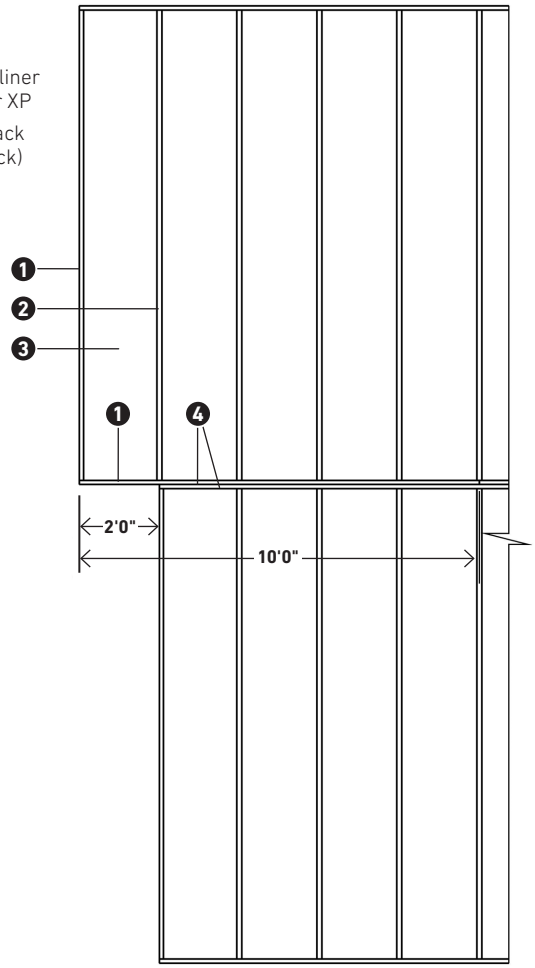
1. 2" C-Track
2. 1" eXP® Shaftliner or Shaftliner XP®
3. 2" H-Stud
4. 1/2" Fire-Shield C™ Gypsum Batten

* Battens not required when 3/4" air space is maintained between H-Stud and adjacent wood framing.



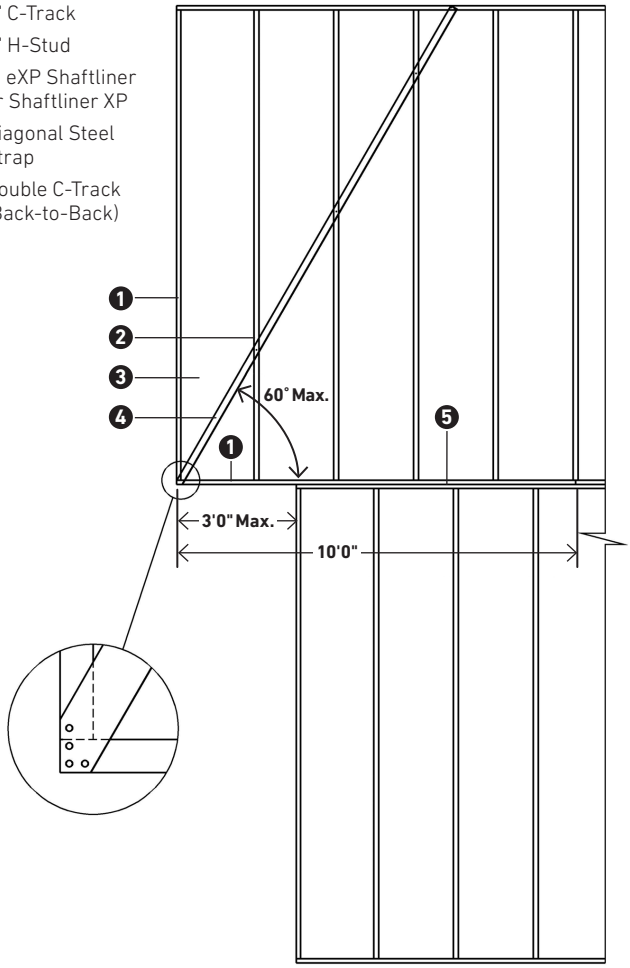
2 FT. CANTILEVER

1. 2" C-Track
2. 2" H-Stud
3. 1" eXP Shaftliner or Shaftliner XP
4. Double C-Track (Back-to-Back)



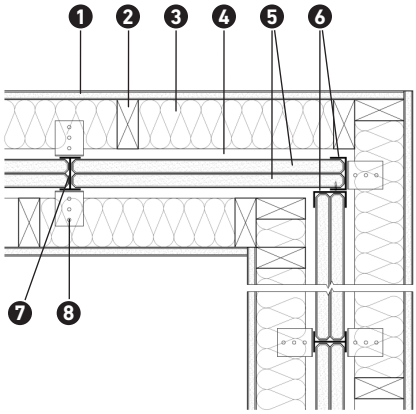
3 FT. CANTILEVER

1. 2" C-Track
2. 2" H-Stud
3. 1" eXP Shaftliner or Shaftliner XP
4. Diagonal Steel Strap
5. Double C-Track (Back-to-Back)



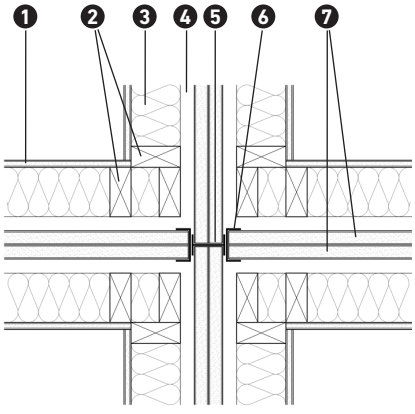
CORNER DETAIL

1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. Minimum 3/4" Air Space
5. 1" eXP Shaftliner or Shaftliner XP
6. 2" C-Track
7. 2" H-Stud
8. ASW Clip



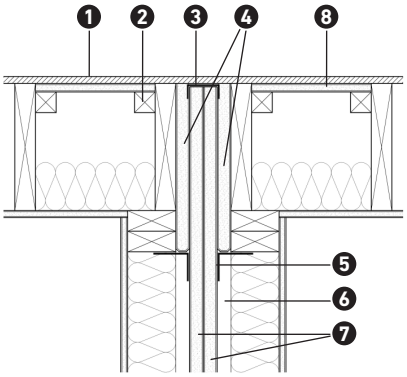
4-WAY INTERSECTION DETAIL

1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. Minimum 3/4" Air Space
5. 2" H-Stud
6. 2" C-Track
7. 1" eXP Shaftliner or Shaftliner XP



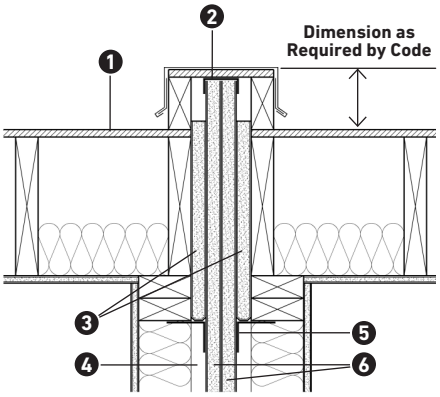
ROOF JUNCTION DETAIL

1. Roof Deck
2. 2x2 Wood Ledger
3. 2" C-Track
4. Gypsum Board or Mineral Wool Fire Blocking
5. ASW Clip
6. Minimum 3/4" Air Space
7. 1" eXP Shaftliner or Shaftliner XP
8. 5/8" Fire-Shield Gypsum Board, 4' each side when roof deck is not constructed with fire-retardant treated wood.



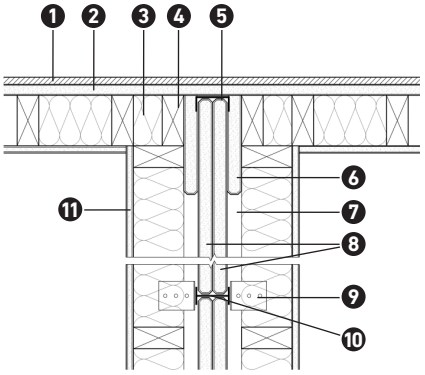
ROOF PARAPET DETAIL

1. Roof Deck
2. 2" C-Track
3. Gypsum Board or Mineral Wool Fire Blocking
4. Minimum 3/4" Air Space
5. ASW Clip
6. 1" eXP Shaftliner or Shaftliner XP



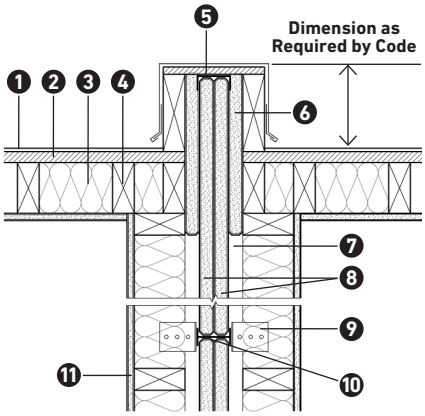
EXTERIOR WALL JUNCTION DETAIL

1. Siding
2. 5/8" eXP Fire-Shield Sheathing
3. Insulation
4. 2x4 Wood Stud
5. 2" C-Track
6. Gypsum Board or Mineral Wool Fire Blocking
7. Minimum 3/4" Air Space
8. 1" eXP Shaftliner or Shaftliner XP
9. ASW Clip
10. 2" H-Stud
11. Gypsum Board



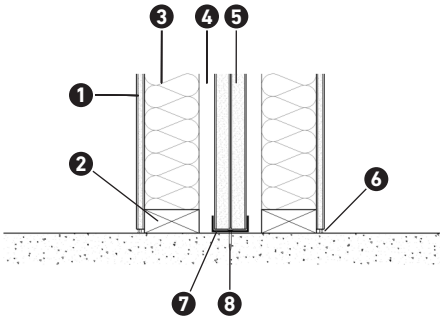
EXTERIOR WALL INTERSECTION DETAIL

1. Siding
2. Plywood or OSB Sheathing
3. Insulation
4. 2x4 Wood Stud
5. 2" C-Track
6. Gypsum Board or Mineral Wool Fire Blocking
7. Minimum 3/4" Air Space
8. 1" eXP Shaftliner or Shaftliner XP
9. ASW Clip
10. 2" H-Stud
11. Gypsum Board



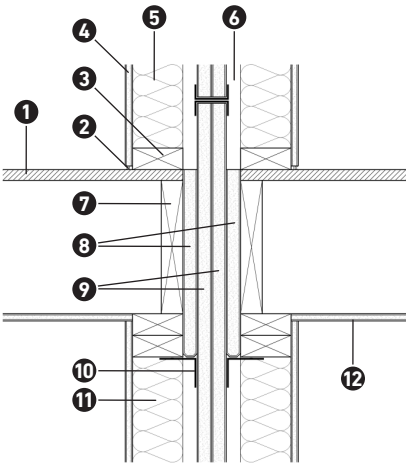
FOUNDATION DETAIL

1. Gypsum Board
2. 2x4 Wood Plate
3. Insulation
4. Minimum 3/4" Air Space
5. 1" eXP Shaftliner or Shaftliner XP
6. Sealant
7. 2" C-Track
8. Fasteners 24" o.c. Max.



FLOOR INTERSECTION DETAIL

1. Subfloor
2. Sealant
3. 2" Wood Plate
4. Gypsum Board
5. Insulation
6. Minimum 3/4" Air Space
7. Rim Joist
8. Gypsum Board or Mineral Wool Fire Blocking
9. 1" eXP Shaftliner or Shaftliner XP
10. ASW Clip
11. 2x4 Wood Stud
12. Ceiling



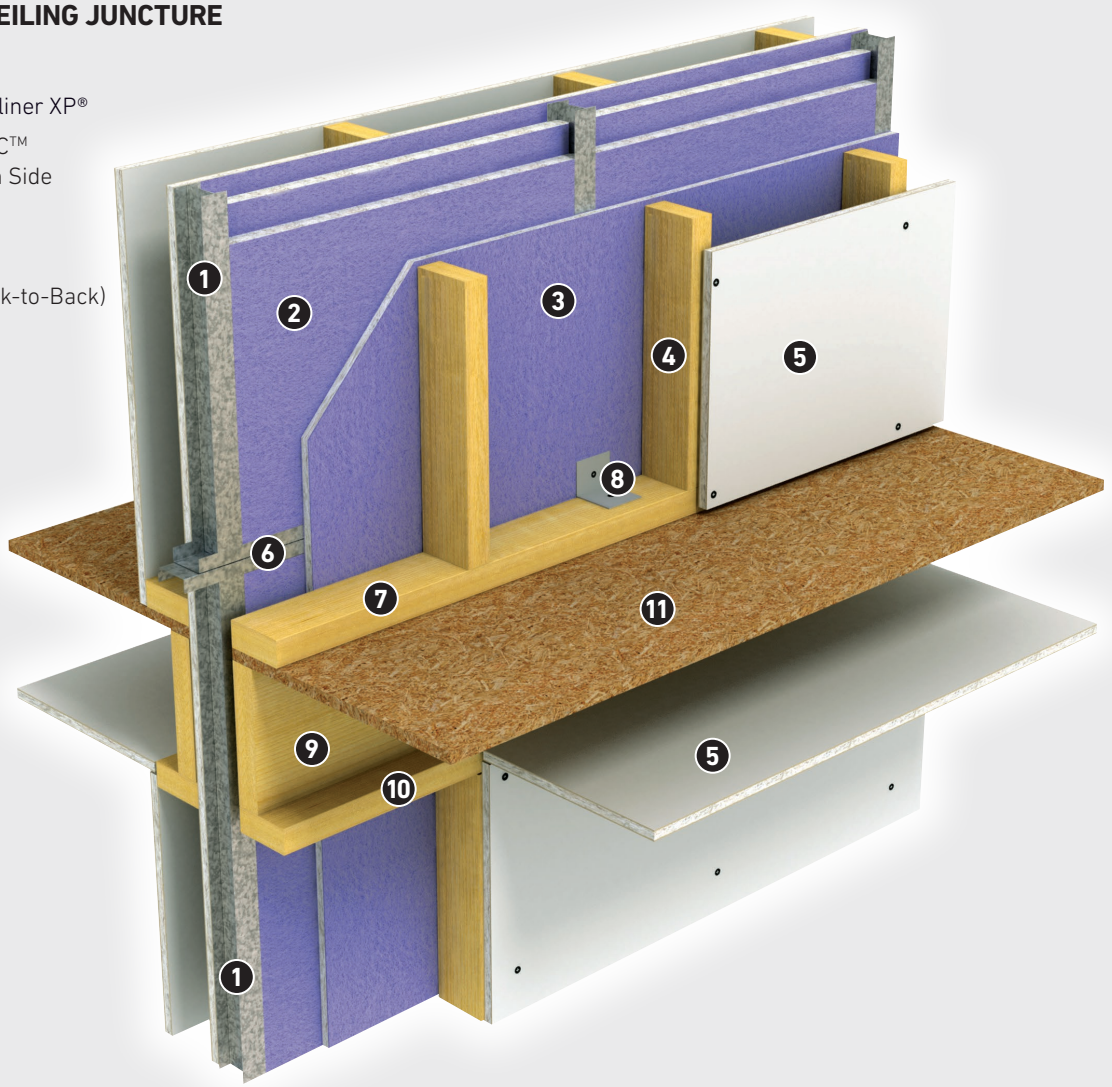
3-Hour Area Separation Wall System

The 3-hour area separation wall system is a 3-hour fire wall consisting of two layers of 1" (25.4 mm) shaftliner panels friction-fit between 2" (50.8 mm) light-gauge steel H-Studs and a layer of 5/8" XP® Fire-Shield C™ Gypsum Board fastened to each side of the studs.

The steel H-Studs are attached to adjacent framing on each side with heat-softenable, aluminum break-away clips (ASW clips) that allow for collapse of the fire-exposed unit without collapse of the area separation wall.

TYPICAL FLOOR/CEILING JUNCTURE

1. H-Stud
2. Two Layers 1" Shaftliner XP®
3. 5/8" XP Fire-Shield C™ Gypsum Board Each Side
4. Wood Stud
5. Gypsum Board
6. Double C-Track (Back-to-Back)
7. Bottom Plate
8. ASW Clip
9. Rim Joist
10. Top Plate
11. Subfloor



DESCRIPTION

Gold Bond Building Products, LLC produces two shaftliner products for use in the 3-hour area separation wall system:

Gold Bond® Shaftliner XP® consists of a mold-, mildew- and moisture-resistant Type X gypsum core with a specially designed, 100% recycled PURPLE paper on the face and back sides.

Gold Bond® eXP® Shaftliner consists of a mold-, mildew- and moisture-resistant Type X gypsum core encased in a coated, specially designed PURPLE fiberglass mat on the face, back and sides.

Gold Bond Building Products, LLC produces three gypsum boards for use in the 3-hour area separation wall system:

Gold Bond® Fire-Shield C™ Gypsum Board has a specially formulated enhanced Type X core to achieve superior performance when used in specific fire-rated assemblies.

Gold Bond® XP® Fire-Shield C™ Gypsum Board consists of a specially treated, fire-resistant, Type X gypsum core encased in a heavy mold-, mildew- and moisture-resistant, 100% recycled, PURPLE paper on the face side and a heavy mold-, mildew- and moisture-resistant, 100% recycled gray paper on the back side.

Gold Bond® eXP® Interior Extreme® Fire-Shield C™ Gypsum Panels consist of a moisture- and mold-resistant Type X gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides.

The H-Studs are installed vertically and secured by the flanges of the C-Track. The same track is used back-to-back at intermediate floors to provide a splicing means so that the system can be erected one floor at a time. C-Tracks are also used at the roof line or at the parapet and at the ends of walls.

Wood- or steel-stud flanking walls on each side of the area separation wall system can be load-bearing or non-load-bearing and can accommodate mechanical, electrical and plumbing systems. Install mineral wool or glass fiber insulation to provide higher STC ratings.

TECHNICAL DATA

The 3-hour area separation wall system is listed in the *UL Fire Resistance Directory* as Design No. W454.

The 3-hour area separation wall system may be built up to a maximum of 70' (21.3 m) high.

The 3-hour area separation wall system should not be used where exposed to constant dampness and/or water.

Although steel framing and Gold Bond® eXP® Gypsum Panels products can withstand temporary exposure to moisture during construction, protect the completed wall system as soon as possible.

Protect insulation in the flanking walls from getting wet. Do not install until the building is enclosed.

Materials supplied to the job site should be stored properly, supported off the ground and protected from inclement weather.

INSTALLATION

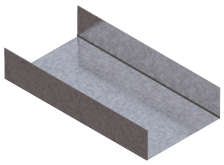
1. Attach 2" (50.8 mm) C-Tracks to the top of the foundation 5/8" (19.1 mm) minimum from the adjacent framed wall with fasteners spaced 24" (610 mm) o.c. Apply acoustical sealant along edges of track to minimize sound transmission.
2. Install C-Track on the ends of stepped foundation walls aligned with the area separation wall, if applicable, with fasteners 24" (610 mm) o.c. Caulk edges as with the floor track.
3. At the intersection of foundation and the exterior wall, begin erecting area separation wall by inserting first layer of 1" (25.4 mm) shaftliner into C-Track. Insert second layer back-to-back with first layer and seat into C-Track. Shaftliner and studs may be set into position from the basement floor or fed down through the space provided between the wood framing from the floor above. Cap the terminating edge of the shaftliner panels with a vertical C-Track at the end of the foundation and fasten to the floor track with 3/8" (9.5 mm) Type S pan-head screws.
4. Insert an H-Stud into the C-Track and engage the H-Stud flanges over the long edges of the shaftliner panels, making sure that both pieces of Shaftliner are seated all the way into the C-Tracks and that their edges are flush. Seat the H-Stud fully so the board edges contact the stud web.
5. Continue in this manner, alternating two layers of shaftliner and H-Studs with the flanges of the H-Studs engaging the shaftliner edges until wall is completed. Again, make sure all studs and panels are tightly pushed together. H-Studs may be fastened to C-Track with 3/8" (9.5 mm) Type S pan-head screws to assist with installation.
6. Where the area separation wall forms a corner, cap the ends of the shaftliner panels with a vertical C-Track and fasten to the floor track with 3/8" (9.5 mm) pan-head screws. Fasten a C-Track to the foundation or floor at a right angle to the installed area separation wall with fasteners 24" (610 mm) o.c. Fasten the web of another vertical C-Track to the flange of the installed vertical C-Track with 3/8" (9.5 mm) pan-head screws 24" o.c. to create the corner. Continue installing shaftliner panels and H-Studs in a progressive manner.
7. If the area separation wall terminates at a foundation wall, the last two shaftliner panels will have to be inserted from the floor above. Boards are pushed down into the channel formed by the flanges of the previous H-Stud and the flanges of the wall track.
8. If the area separation wall terminates at or past a framed wall, insert the last shaftliner panels and cap the end of the area separation wall with 2" (50.8 mm) C-Track. Fasten C-Track flanges at all corners on both sides with 3/8" (9.5 mm) Type S pan-head screws.
9. Where one dwelling unit extends past the adjacent unit, terminate the area separation wall at the end of the common wall and construct a 1-hour wall to the farthest point of the building.
10. Where one unit extends vertically past the adjacent unit, terminate the area separation wall at the roof sheathing of the lower unit and construct a 1-hour wall to the roof sheathing of the upper unit.

AREA SEPARATION WALL LIMITING HEIGHTS

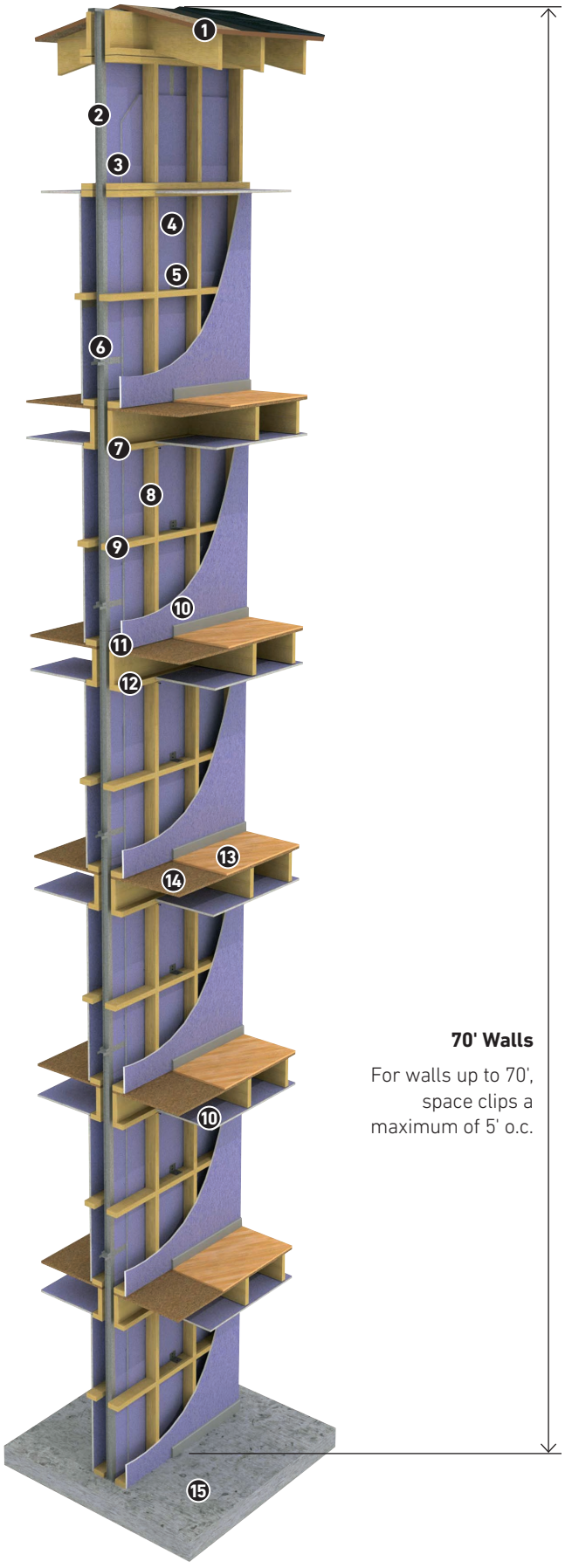
1. Roof
2. H-Stud
3. Two Layers 1" eXP® Shaftliner or Shaftliner XP®
4. 5/8" XP® Fire-Shield C™ Gypsum Board
5. ASW Clip
6. Double C-Track (Back-to-Back)
7. Top Plate
8. Stud
9. Blocking
10. XP® Gypsum Board
11. Bottom Plate
12. Rim Joist
13. Finish Floor
14. Subfloor
15. Concrete Slab

ASW Clip

H-Stud



C-Track



70' Walls

For walls up to 70', space clips a maximum of 5' o.c.

11. Cap the top edge of the erected wall with 2" (50.8 mm) C-Track over studs and shaftliner. C-Track may be fastened to H-Studs with 3/8" (9.5 mm) Type S pan-head screws to assist with installation.
12. Where another area separation wall intersects the installed area separation wall, fasten a C-Track to the foundation or floor at a right angle to the installed area separation wall with fasteners 24" (610 mm). Attach the web of a vertical C-Track to the flange of an H-Stud with 3/8" (9.5 mm) pan-head screws 24" (610 mm) o.c. Continue installing shaftliner panels and H-Studs in the same manner.
13. Apply one layer of 5/8" Fire-Shield C Gypsum Board horizontally or vertically to each side of the H-Studs with 1" Type S screws 16" (406 mm) o.c.
14. Clip the area separation wall to adjacent framing with ASW Clips 5' o.c. Fasten the clips to the H-studs through the 5/8" Fire-Shield C Gypsum Board with one 1-1/4" (31.8 mm) Type S screw through the short leg of the clip. Attach clips to adjacent framing with one 1-1/4" (31.8 mm) Type W screw for wood and Type S screws for steel.
15. Attach 2" (50.8 mm) C-Track to the installed track capping off the wall of the lower floor. This back-to-back track installation allows the area separation wall to be erected one floor at a time. Secure the two tracks together with two 3/8" (9.5 mm) Type S pan-head screws 24" (610 mm) o.c. Stagger back-to-back track joints a minimum of 12" (305 mm).
16. For applications where a floor overhangs the floor below, the C-Track can be cantilevered 24" (610 mm) from the C-Track capping the wall of the lower floor. A 36" (914 mm) cantilever can be achieved in the same manner when diagonal steel strapping is applied to each side of the wall.
17. For additional vertical sections, erect shaftliner and H-Studs in the same manner as the basement wall, steps 4-14, except that starting and ending procedures vary depending on the exterior wall intersection detail.
18. At the roof intersection, the walls are capped with C-Tracks abutting the underside of the roof sheathing. C-Tracks may be fastened to H-Studs with 3/8" (9.5 mm) Type S pan-head screws to assist with installation. H-Studs are fastened to framing with ASW clips at the roof line.
19. Wood stud or steel stud walls flanking the area separation wall may be finished in any method specified.

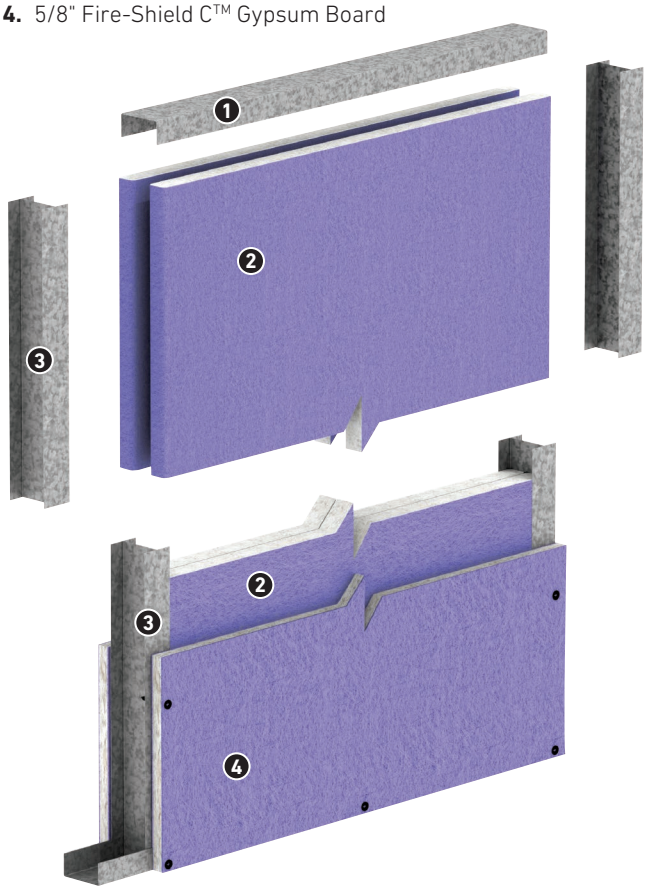
RECOMMENDATIONS

Order H-Studs and 1" eXP Shaftliner or Shaftliner XP according to the following:

1. Basement wall section – length equal to distance from foundation to approximately 3" (76.2 mm) above the first floor line.
2. Intermediate floors – length equal to the distance between floor lines.
3. Top floor or attic – length to extend to the top of the parapet wall or to the roof intersection, depending on detail.

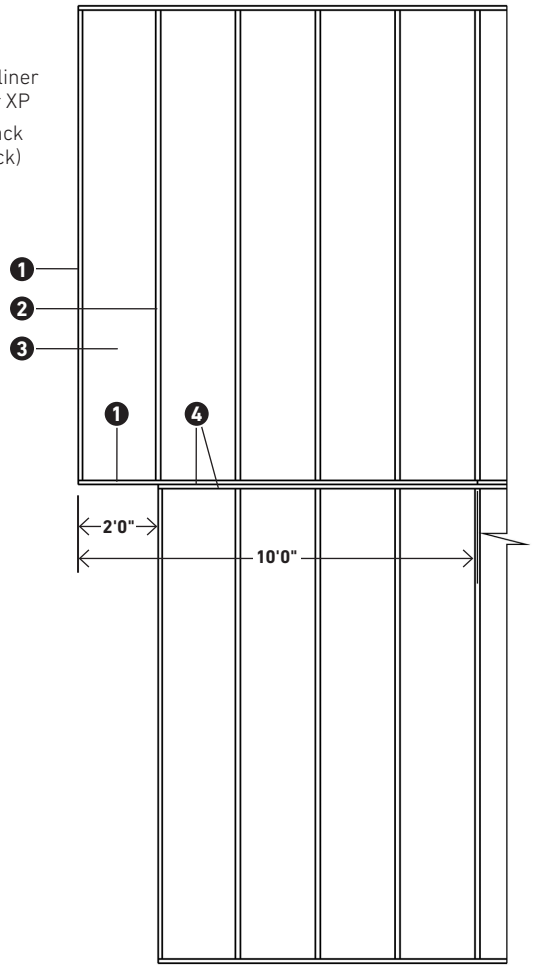
BASIC COMPONENTS OF 3-HOUR AREA SEPARATION WALL

1. 2" C-Track
2. 1" eXP® Shaftliner or Shaftliner XP®
3. 2" H-Stud
4. 5/8" Fire-Shield C™ Gypsum Board



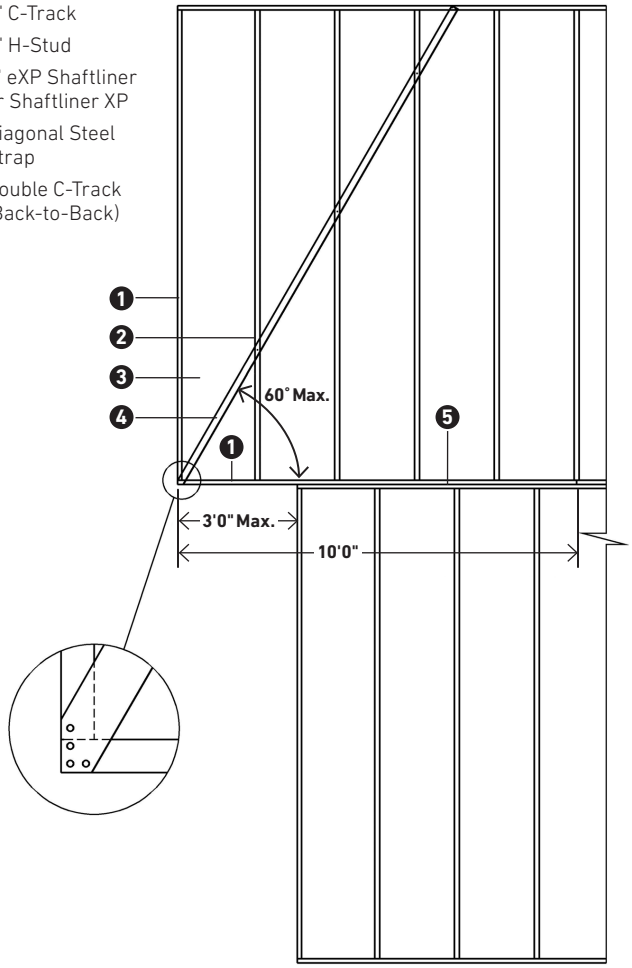
2 FT. CANTILEVER

1. 2" C-Track
2. 2" H-Stud
3. 1" eXP Shaftliner or Shaftliner XP
4. Double C-Track (Back-to-Back)



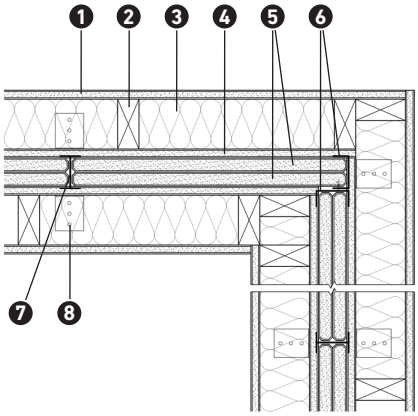
3 FT. CANTILEVER

1. 2" C-Track
2. 2" H-Stud
3. 1" eXP Shaftliner or Shaftliner XP
4. Diagonal Steel Strap
5. Double C-Track (Back-to-Back)



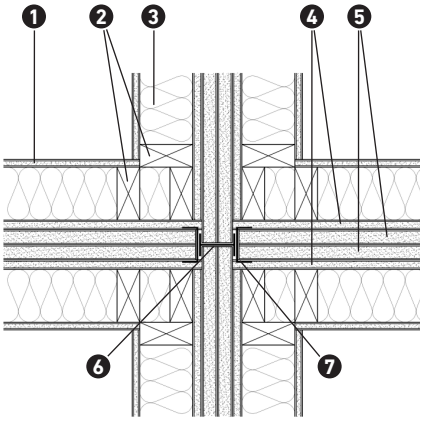
CORNER DETAIL

1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. 5/8" Fire-Shield C Gypsum Board
5. 1" eXP Shaftliner or Shaftliner XP
6. 2" C-Track
7. 2" H-Stud
8. ASW Clip



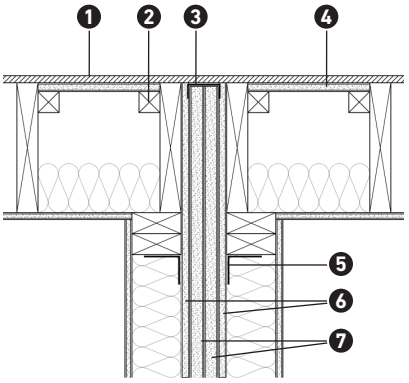
4-WAY INTERSECTION DETAIL

1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. 5/8" Fire-Shield C Gypsum Board
5. 1" eXP Shaftliner or Shaftliner XP
6. 2" H-Stud
7. 2" C-Track



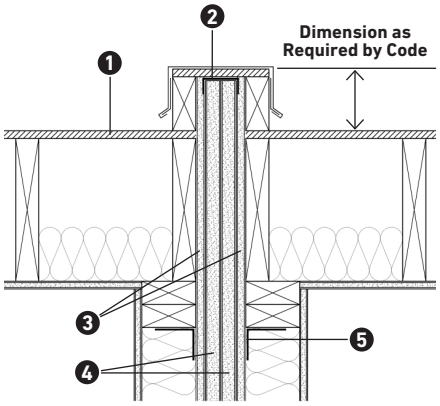
ROOF JUNCTION DETAIL

1. Roof Deck
2. 2x2 Wood Ledger
3. 2" C-Track
4. 5/8" Fire-Shield Gypsum Board, 4' each side when roof deck is not constructed with fire-retardant treated wood.
5. ASW Clip
6. 5/8" Fire-Shield C Gypsum Board
7. 1" eXP Shaftliner or Shaftliner XP



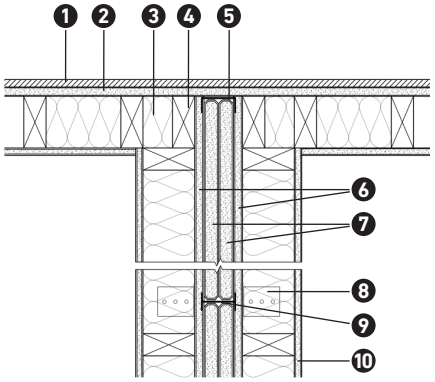
ROOF PARAPET DETAIL

1. Roof Deck
2. 2" C-Track
3. 5/8" Fire-Shield C Gypsum Board
4. 1" eXP Shaftliner or Shaftliner XP
5. ASW Clip



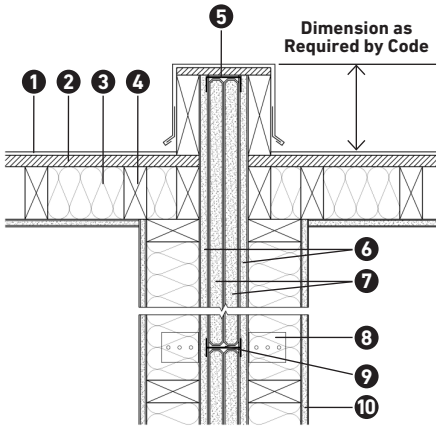
EXTERIOR WALL JUNCTION DETAIL

1. Siding
2. 5/8" eXP Fire-Shield Sheathing
3. Insulation
4. 2x4 Wood Stud
5. 2" C-Track
6. 5/8" Fire-Shield C Gypsum Board
7. 1" eXP Shaftliner or Shaftliner XP
8. ASW Clip
9. 2" H-Stud
10. Gypsum Board



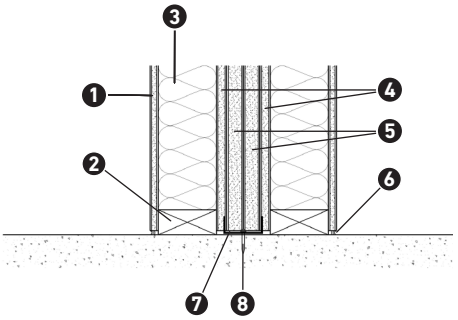
EXTERIOR WALL INTERSECTION DETAIL

1. Siding
2. Plywood or OSB Sheathing
3. Insulation
4. 2x4 Wood Stud
5. 2" C-Track
6. 5/8" Fire-Shield C Gypsum Board
7. 1" eXP Shaftliner or Shaftliner XP
8. ASW Clip
9. 2" H-Stud
10. Gypsum Board



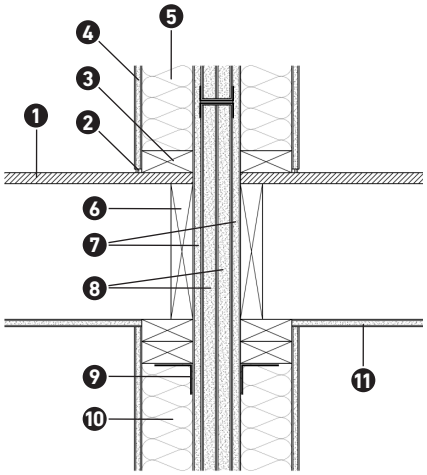
FOUNDATION DETAIL

1. Gypsum Board
2. 2x4 Wood Plate
3. Insulation
4. 5/8" Fire-Shield C Gypsum Board
5. 1" eXP Shaftliner or Shaftliner XP
6. Sealant
7. 2" C-Track
8. Fasteners 24" o.c. Max.



FLOOR INTERSECTION DETAIL

1. Subfloor
2. Sealant
3. 2" Wood Plate
4. Gypsum Board
5. Insulation
6. Rim Joist
7. 5/8" Fire-Shield C Gypsum Board
8. 1"eXP Shaftliner or Shaftliner XP
9. ASW Clip
10. 2x4 Wood Stud
11. Ceiling



Wood Frame Walls and Ceilings

Single- and Double-Layer Construction

Single-Layer Construction

The single-layer construction system consists of a single layer of Gold Bond® Gypsum Board applied to wood framing. A variety of specialty products may be used to provide mold resistance, abuse resistance or sound damping.

Nail Application

Apply Gold Bond® Gypsum Board to wood framing members. Apply board at right angles to ceiling framing first, and then apply vertically or horizontally to walls. To minimize joints and strengthen the wall, use the longest possible lengths. Cut boards accurately and abut joints, but do not force together.

Space nails no more than 7" (178 mm) o.c. on ceilings and 8" (203 mm) o.c. on walls. Locate fasteners not less than 3/8" (9.5 mm) from the edges and ends of the gypsum board. Fasten 3/8" (9.5 mm) gypsum board with minimum 1-1/4" (31.8 mm) nails, 1/2" (12.7 mm) gypsum board with minimum 1-3/8" (34.9 mm) nails and 5/8" gypsum board with minimum 1-1/2" (38.1 mm) nails.

Double Nailing

Use the double nailing method of attachment to minimize nail pops. Double nailing requires a second set of field nails, but the total quantity of nails does not double since the maximum nail spacing increases to 12" (305 mm) o.c. and conventional nailing is used on the perimeter. Begin by single nailing the field of the board starting at the center and working toward the ends and edges. Next, drive another nail 2" (50.8 mm) to 2-1/2" (63.6 mm) from the first set of field nails. After adding the second set of nails, strike the first set again to ensure the board is drawn tightly to the framing member.

Screw Application

Apply gypsum board to wood framing members using 1-1/4" (31.8 mm) Type W screws with a screw gun equipped with adjustable screw depth control and a #2 Phillips bit. Space screws 12" (305 mm) o.c. on ceilings and 16" (406 mm) o.c. on walls where the framing members are 16" (406 mm) o.c. Space screws 12" (305 mm) o.c. on ceilings and walls where the framing members are 24" (610 mm) o.c. Minimum screw penetration is 5/8" (15.9 mm) for wood studs.

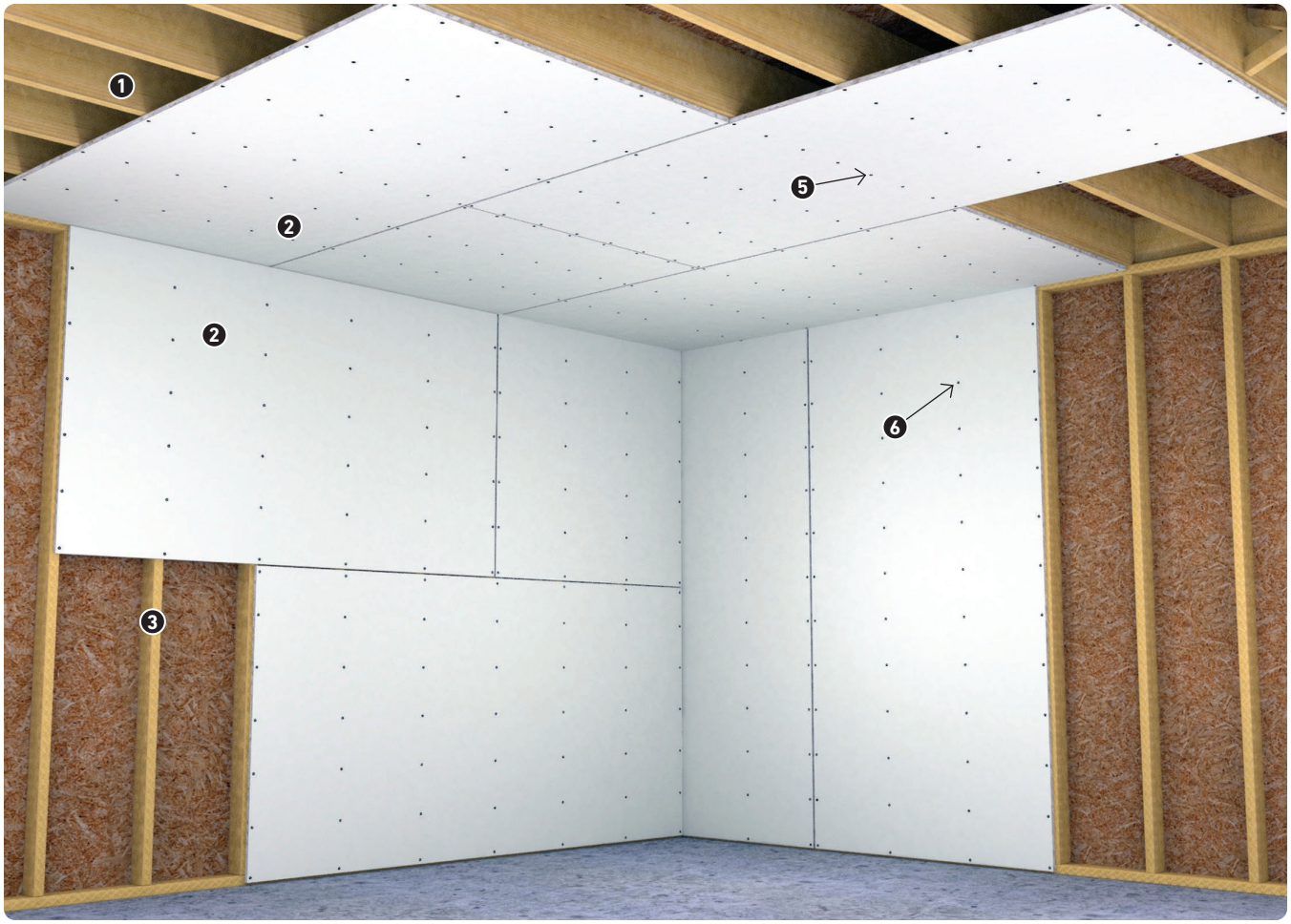
Adhesive Application

Apply gypsum board adhesive to the face of studs or joists in continuous beads not less than 3/8" (9.5 mm) in diameter. Where end or edge joints occur on a framing member, apply two parallel beads of adhesive not less than 3/8" (9.5 mm) in diameter, one near each edge of the framing member.

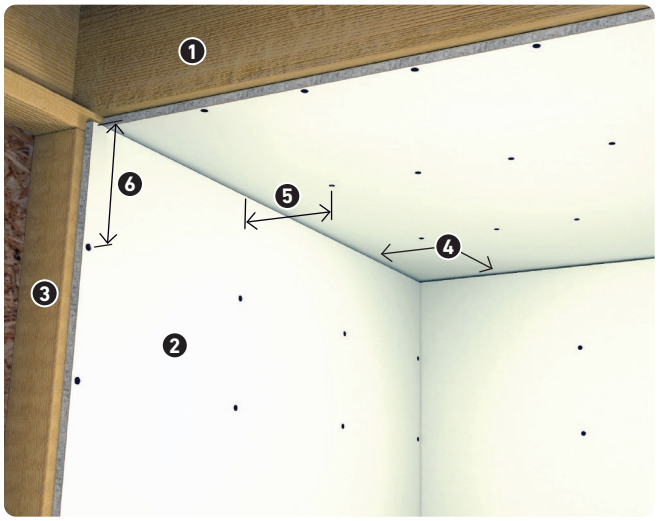
Floating Angle Method

Apply gypsum board using the floating angle method eliminates perimeter nails where ceilings and walls meet. This method reduces the stress and strain on the board from movement of the framing. Refer to the diagrams on following pages for details.

Standard Application with Nails – Single Layer



Floating Ceiling Corner – Nail Installation



SYSTEM COMPONENTS

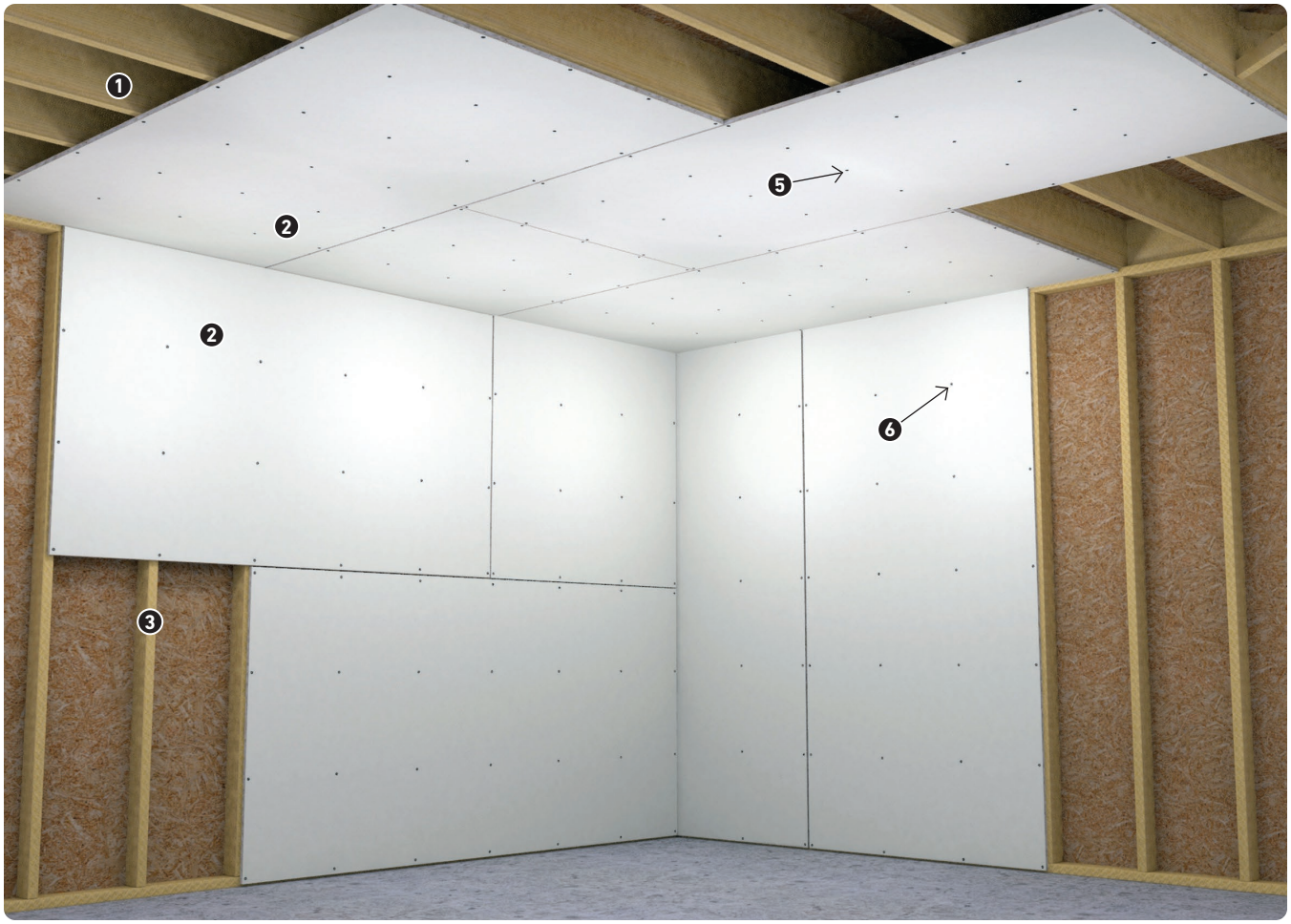
1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 7" (178 mm) o.c.
6. Wall: 8" (203 mm) o.c.

INSTALLATION NOTES

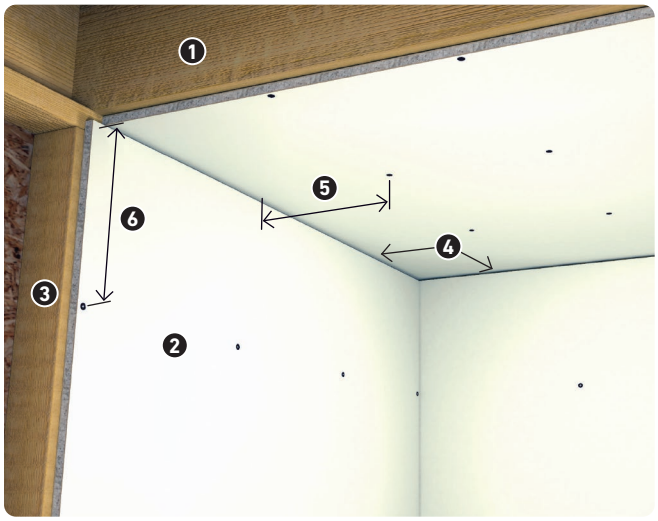
1/2" (12.7 mm) Gypsum Board

- 24" (610 mm) o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)
- 16" (406 mm) o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)
- Minimum gypsum board nail length 1-3/8" (34.9 mm)

Standard Application with Screws – Single Layer



Floating Ceiling Corner – Screw Installation



SYSTEM COMPONENTS

1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 12" (305 mm) o.c.
6. Wall: 16" (406 mm) o.c.
   Floating Ceiling:
   12" (305 mm) o.c.

INSTALLATION NOTES

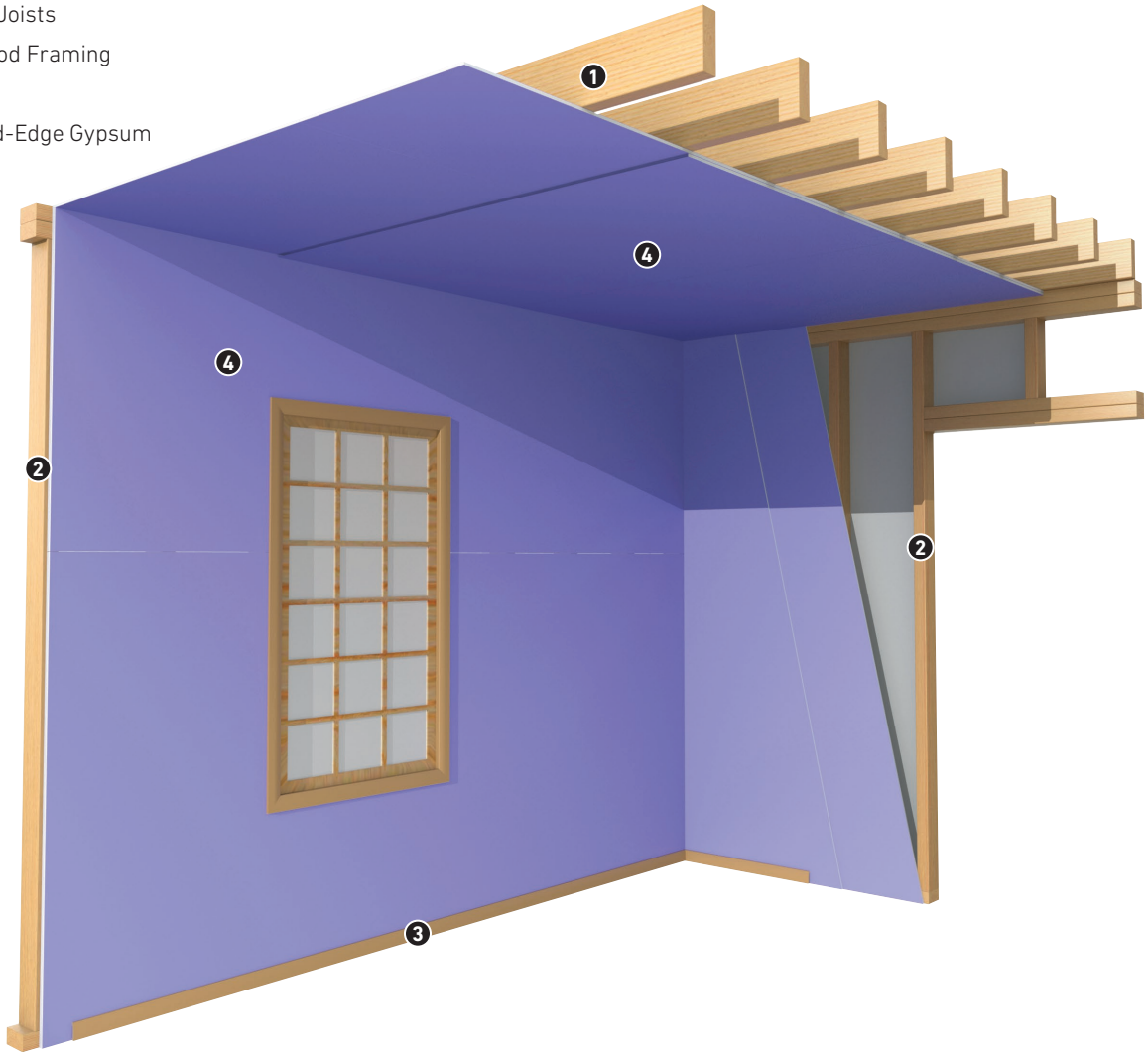
1/2" (12.7 mm) Gypsum Board

- 24" (610 mm) o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)
  - Screw spacing not to exceed 12" (305 mm) o.c.
- 16" (406 mm) o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)
- Minimum gypsum board screw length 1-1/4" (31.75 mm)

Double-Layer Construction

The double-layer construction system consists of multiple layers of Gold Bond® Gypsum Board applied to wood framing. A variety of specialty products may be used to provide mold resistance, abuse resistance or sound damping. When used as a face layer, acoustically enhanced Gold Bond® SoundBreak® XP® provides optimal acoustical performance and sound reduction.

1. Ceiling Joists
2. 2x4 Wood Framing
3. Base
4. Tapered-Edge Gypsum Board



Base Layer

The base layer is applied on ceilings first, and then on walls. For mechanical attachment of the face layer, locate nails a maximum of 16" (406 mm) o.c. on ceilings and 24" (610 mm) o.c. on walls. Locate screws a maximum of 24" (610 mm) o.c. for both ceilings and walls. For adhesive application of the face layer, apply the base layer in the same manner as a single-layer application. Drive fasteners flush with the board surface and do not treat joints. Base layer joints offset from face layer joints minimum 16" (406 mm). Do not secure the base layer to framing with clips.

Mechanical Application of Face Layer

For non-rated construction, use nails of a length to provide 7/8" (22.2 mm) minimum penetration into the framing and spaced a maximum of 7" (178 mm) o.c. on ceilings and 8" (203 mm) o.c. on walls. Type W screws should be of a length to provide 5/8" (15.9 mm) minimum penetration into the framing and spaced a maximum of 12" (305 mm) on ceilings and 16" (406 mm) o.c. on walls when framing is spaced 16" (406 mm) o.c. Locate Type W screws 12" (305 mm) o.c. on walls and ceilings when framing is spaced 24" (610 mm) o.c.

Adhesive Application of Face Layer

Use one of the following adhesives:

A. All-purpose ready mix joint compound or quick setting compound applied with a notched spreader with 1/4" x 1/4" (6.4 mm x 6.4 mm) notches spaced maximum 2" (50.8 mm) o.c. to the back side of the finish layer.

B. Drywall adhesive meeting ASTM C557 applied with a caulking gun in 3/8" (9.5 mm) diameter beads spaced 16" (406 mm) o.c. to base layer or back of face layer. Apply a perimeter bead 1" (25.4 mm) from panel edge.

Position the finish layer on the wall or ceiling within 10 minutes. Locate all joints a minimum of 10" (254 mm) from parallel joints in the base layer. Hold in place with temporary nails or Type G drywall screws or bracing to ensure adequate contact and alignment of the gypsum boards. When the bond has developed (usually 24 hours), remove the temporary fasteners or bracing. Fill resulting holes flush to the surface with joint compound and finish the joints.

Fire-Resistance Ratings

For fire or acoustical ratings, please refer to the Fire and Sound Selector guide. For complete construction details, consult the specific test report.

RECOMMENDATIONS

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- Install batt or blanket ceiling insulation before the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation immediately after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12" (305 mm) of the edges of the openings unless installing control joints at these locations.
- Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40˚F (4˚C) during application of gypsum board.
- Maintain a room temperature of not less than 50˚F (10˚C) when using adhesive to attach the gypsum board and during joint treatment, texturing and decoration beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

LIMITATIONS

- Apply 1/4" (6.4 mm) gypsum board to existing surfaces only. Do not apply 1/4" (6.4 mm) gypsum board directly to framing members, except when using with other thicknesses in double-layer systems tested for specific purposes. Existing walls and ceilings should be sound, flat, level and without void spaces. Apply 1/4" (6.4 mm) gypsum board with a combination of mechanical fasteners and adhesive between framing members to bond the gypsum board to the substrate.
- Do not use 3/8" (9.5 mm) gypsum board on framing members over 16" (406 mm) o.c. Apply gypsum board to ceilings at right angles to the framing members. Do not use 3/8" (9.5 mm) gypsum board to support insulation. Do not use 1/2" (12.7 mm) or 5/8" (15.9 mm) gypsum board on framing over 24" (610 mm) o.c.
- All ends and edges of gypsum board should occur over framing members or other solid backing, except where treated joints occur at right angles to framing or furring members.
- Hold the gypsum board firmly against the framing while fastening with nails or screws. Start at the center and work toward each end and edge, spacing the fasteners as recommended for each type of application.
- Support lighting and other fixtures by framing. Do not use gypsum board to support them.
- Apply 1/2" (12.7 mm) or 5/8" (15.9 mm) gypsum board at right angles to framing on ceilings to be decorated with spray textures. Framing should not exceed 16" (406 mm) o.c. for 1/2" (12.7 mm) regular gypsum board and 24" (610 mm) o.c. for 1/2" (12.7 mm) Gold Bond® High Strength Ceiling Panels, 1/2" (12.7 mm) Gold Bond High Strength LITE® Gypsum Board and 5/8" (15.9 mm) Gold Bond® Fire-Shield® Gypsum Board.
- For a spray texture finish, prime gypsum board ceilings with a sealing latex primer and allow it to dry before spraying. This will help minimize gypsum board sagging and discoloration.

Using water-based spray textures may cause unprimed gypsum board to sag when any one or more of the following conditions exist:

- Unventilated buildings
- Use of vapor retarders under certain conditions
- Poor drying conditions
- Inadequate framing support
- Improper type or thickness of gypsum board

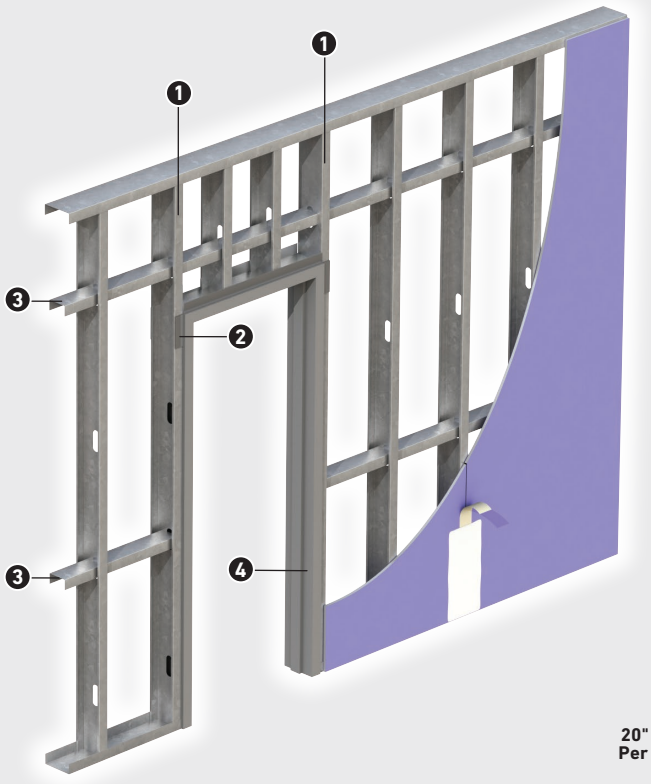
Non-Load-Bearing Steel Stud Partitions

Steel stud gypsum board partitions are comprised of steel floor and ceiling tracks, steel studs and Gold Bond® Gypsum Board, which is attached with drywall screws. Metal products are to meet or exceed all applicable ASTM standards.

Apply gypsum board horizontally or vertically in single or multiple layers. For system-specific fire and sound ratings, please refer to the Fire and Sound Selector section.

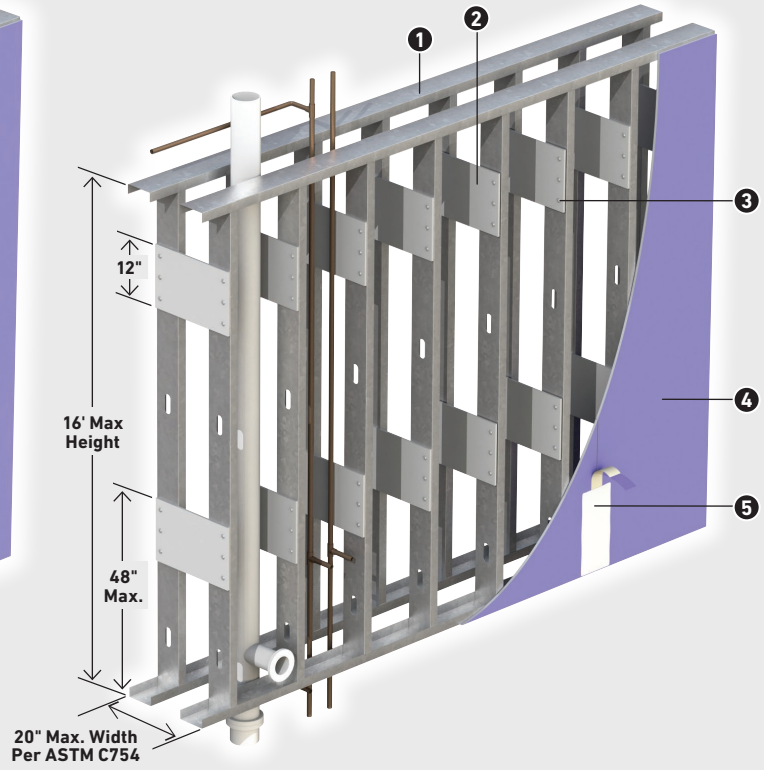
SINGLE-LAYER CONSTRUCTION

1. Fasten Jamb Studs to Track Top and Bottom
2. Track – Cut and Bent Down
3. C.R. Channel Stiffeners – Friction Fit (Optional)
4. Steel Door Frame



CHASE WALL CONSTRUCTION

1. Steel Track
2. 1/2" Gypsum Board or Stud Track – 2 Screws per Stud (Alternate)
3. 3 Drywall Screws per Stud
4. Gypsum Board
5. Tape and Joint Compound



ADVANTAGES

Openings or knockouts throughout the length of the steel studs permit the easy horizontal routing of water, gas and electrical conduit. You may also use these openings to install cold-rolled channel stiffeners where increased rigidity is required. Interruption of the floor and ceiling track allows the vertical installation of larger utilities.

Fire Resistance: These systems have 1-, 2-, 3- and 4-hour fire ratings.

Sound Resistance: Assemblies requiring a Sound Transmission Class (STC) may be achieved through the use of several variations of these systems.

TECHNICAL DATA

Partition Heights

Use light-gauge steel studs to frame non-load-bearing partitions, which are limited in height by deflection resulting from extraneous horizontal forces. For any given horizontal load, the amount of deflection increases as the height of the partition rises.

Table 1 and Table 2 on the following page, show maximum partition heights based on specific design criteria. The height limits shown are based on the gypsum board and the steel studs acting as a composite section to provide a maximum deflection of L/120, L/240, L/360 (L = partition height in inches) with a horizontal load of 5 psf, 7.5 psf, and 10 psf of partition surface.

You may increase the rigidity by placing stiffener channels through the steel stud knockouts, by using two layers of gypsum board, or by decreasing the stud spacing.

Use standard 25- and 20-gauge studs for interior partitions. They have height limits as shown in Table 1 and Table 2. Attach gypsum board to full height on both sides of studs with Type S bugle-head drywall screws (Type S-12 for 20-gauge studs) spaced not more than 12" (305 mm) o.c. on all studs when framing is 24" (610 mm) o.c. and 16" (406 mm) o.c. if framing is 16" (406 mm) o.c. or less. Screw lengths must be not less than 3/8" (9.5 mm) greater than the total thickness of the gypsum board being fastened.

Use 20-gauge steel studs for exterior, non-load-bearing curtain wall systems. Also use them for interior partitions to provide more rigidity or greater heights than can be attained with standard 25-gauge studs.

LIMITATIONS

1. Maximum stud spacing for a single-layer application of 1/2" (12.7 mm) and 5/8" (15.9 mm) gypsum board is 24" (610 mm) o.c. When applying 3/8" (9.5 mm) gypsum board, maximum stud spacing is 16" (406 mm) o.c.
2. Where installing long, continuous runs of gypsum board, provide control joints every 30' (9,144 mm) or less.
3. Where structural movement may impose direct loads on these systems, isolation details are required.
4. To prevent weakening due to calcining, do not expose gypsum board to temperatures over 125˚F (52˚C) for extended periods of time.
5. Gypsum board joints should not occur within 12" (305 mm) of the corners of door frames, unless installing control joints at these locations.
6. Where reference is made to nominal gauges, 25-gauge relates to a minimum base steel of .0179" (0.45 mm), and 20-gauge to .0329" (0.84 mm).

TABLE 1:
25-GAUGE STUDS/PARTITION LIMITING HEIGHTS

			Lateral Pressure		
Stud Depth	**Stud Spacing**	**Deflection Limit**	**5 psf (240 Pa)**	**7.5 psf (360 Pa)**	**10 psf (480 Pa)**
1-5/8" (41.3 mm)	12" (305 mm)	L/120	11-2 (3400)	9-9 (2970)	8-10 (2690)
		L/240	8-10 (2690)		
		L/360			
	16" (406 mm)	L/120	10-7 (3230)	8-10 (2690)	8-4 (2540)
		L/240	8-4 (2540)		
		L/360			
	24" (610 mm)	L/120	9-9 (2970)	8-0 (2440)	
		L/240	7-11 (2410)		
		L/360			
2-1/2" (63.5 mm)	12" (305 mm)	L/120	15-1 (4600)	12-4 (3760)	10-9 (3280)
		L/240	11-11 (3630)	10-5 (3180)	9-6 (2900)
		L/360	10-5 (3180)	9-1 (2770)	
	16" (406 mm)	L/120	13-3 (4040)	10-10 (3300)	9-5 (2570)
		L/240	11-3 (3430)	9-10 (3000)	8-11 (2720)
		L/360	9-10 (3000)	8-7 (2620)	
	24" (610 mm)	L/120	11-10 (3610)	9-8 (2950)	8-5 (2570)
		L/240	10-7 (3230)	9-3 (2820)	8-5 (2570)
		L/360	9-3 (2820)	8-1 (2460)	
3-1/2" (88.9 mm)	12" (305 mm)	L/120	17-8 (5380)	14-3 (4340)	12-5 (3780)
		L/240	15-4 (4670)	13-3 (4040)	12-0 (3660)
		L/360	13-3 (4040)	11-7 (3530)	10-5 (3180)
*	16" (406 mm)	L/120	15-4 (4670)	12-5 (3780)	10-9 (3280)
		L/240	14-4 (4370)	12-5 (3780)	10-9 (3280)
		L/360	12-4 (3760)	10-10 (3300)	9-9 (2970)
	24" (610 mm)	L/120	13-9 (4190)	11-0 (3350)	9-5 (2870)
		L/240	13-5 (4090)	11-0 (3350)	9-5 (2870)
		L/360	11-7 (3530)	10-1 (3070)	9-1 (2770)
4" (101.6 mm)	12" (305 mm)	L/120	19-6 (5940)	15-9 (4800)	13-8 (4170)
		L/240	16-5 (5000)	14-4 (4370)	13-0 (3960)
		L/360	14-4 (4370)	12-6 (3810)	11-4 (3450)
	16" (406 mm)	L/120	17-2 (5230)	13-10 (4220)	11-11 (3630)
		L/240	15-4 (4670)	13-4 (4060)	11-11 (3630)
		L/360	13-4 (4060)	11-8 (3560)	10-6 (3200)
	24" (610 mm)	L/120	15-1 (4600)	12-1 (3680)	10-5 (3180)
		L/240	14-2 (4320)	12-1 (3680)	10-5 (3180)
		L/360	12-4 (3760)	10-9 (3280)	9-9 (2970)
6" (152.4 mm)	12" (305 mm)	L/120	22-10 (6960)	18-7 (5660)	16-2 (4930)
		L/240	22-1 (6730)	18-7 (5660)	16-2 (4930)
		L/360	19-4 (5890)	16-9 (5110)	15-0 (4570)
	16" (406 mm)	L/120	19-9 (6020)	16-2 (4930)	14-0 (4270)
		L/240	19-9 (6020)	16-2 (4930)	14-0 (4270)
		L/360	17-11 (5460)	15-7 (4750)	3-10 (4220)
	24" (610 mm)	L/120	16-9 (5110)	13-5 (4090)	11-5 (3480)
		L/240	16-9 (5110)	13-5 (4090)	11-5 (3480)
		L/360	16-9 (5110)	13-5 (4090)	11-5 (3480)

Note: Limiting height tables adapted with permission from ASTM C 754. Copyright ASTM. Tables based on tests conducted with gypsum board attached with screws 12" o.c. to framing.

*Applicable for 3-5/8" stud depth.

TABLE 2:
20-GAUGE STUDS/PARTITION LIMITING HEIGHTS

			Lateral Pressure		
Stud Depth	**Stud Spacing**	**Deflection Limit**	**5 psf (240 Pa)**	**7.5 psf (360 Pa)**	**10 psf (480 Pa)**
1-5/8" (41.3 mm)	12" (305 mm)	L/120	13-0 (3960)	11-4 (3450)	10-4 (3150)
		L/240	10-4 (3150)	(9-0 (2740)	
		L/360	9-0 (2740)		
	16" (406 mm)	L/120	12-1 (3680)	10-7 (3230)	9-8 (2950)
		L/240	9-8 (2950)	8-5 (2570)	
		L/360	8-5 (2570)		
	24" (610 mm)	L/120	11-0 (3350)	9-7 (2920)	8-9 (2670
		L/240	8-9 (2670)	7-8 (2340)	
		L/360	7-8 (2340)		
2-1/2" (63.5 mm)	12" (305 mm)	L/120	17-9 (5410)	15-6 (4720)	13-11 (4240)
		L/240	13-11 (4240)	12-1 (3680)	10-11 (3300)
		L/360	12-1 (3680)	10-6 (3200)	9-5 (2870)
	16" (406 mm)	L/120	16-5 (5000)	14-4 (4370)	12-10 (3910)
		L/240	12-10 (3910)	11-2 (3400)	10-0 (3050)
		L/360	11-2 (3400)	9-8 (2950)	8-8- (2640)
	24" (610 mm)	L/120	14-10 (4520)	13-10 (3960)	11-7 (3530)
		L/240	11-7 (3530)	10-0 (3050)	8-11 (2770)
		L/360	10-0 (3050)	8-7 (2620)	7-8 (2340)
3-1/2" (88.9 mm)	12" (305 mm)	L/120	22-6 (6860)	19-8 (5990)	17-10 (5440)
		L/240	17-10 (5440)	15-6 (4720)	14-1 (4290)
		L/360	15-6 (4720)	13-7 (4140)	12-4 (3760)
*	16" (406 mm)	L/120	20-8 (6300)	18-1 (5510)	16-5 (5000)
		L/240	16-5 (5000)	14-3 (4340)	12-11 (3940)
		L/360	14-3 (4300)	12-6 (3810)	11-4 (3450)
	24" (610 mm)	L/120	18-6 (5640)	16-2 (5840)	14-9 (4500)
		L/240	14-9 (4500)	12-9 (3890)	11-7 (3530)
		L/360	12-9 (3890)	11-2 (3400)	10-1 (3070)
4" (101.6 mm)	12" (305 mm)	L/120	25-1 (7650)	21-11 (6680)	19-11 (6070)
		L/240	19-11 (6070)	17-4 (5280)	15-8 (4780)
		L/360	17-4 (5280)	15-0 (4570)	13-7 (4140)
	16" (406 mm)	L/120	23-1 (7040)	20-2 (6150)	18-4 (5590)
		L/240	18-4 (5590)	15-11 (4850)	14-5 (4390)
		L/360	15-11 (4850)	13-9 (4190)	12-6 (3810)
	24" (610 mm)	L/120	20-9 (6320)	18-1 (5510)	16-5 (5000)
		L/240	16-5 (5000)	14-3 (4340)	12-10 (3910)
		L/360	14-3 (4340)	12-4 (3760)	11-2 (3400)
6" (152.4 mm)	12" (305 mm)	L/120	33-9 (10290)	29-6 (8990)	26-9 (8150)
		L/240	26-9 (8150)	23-5 (7140)	21-3 (6480)
		L/360	23-5 (7140)	20-6 (6250)	18-7 (5660)
	16" (406 mm)	L/120	30-10 (9400)	27-0 (8230)	24-6 (7470)
		L/240	24-6 (7470)	21-4 (6500)	19-5 (5920)
		L/360	21-4 (6500)	18-9 (5720)	17-0 (5180)
	24" (610 mm)	L/120	27-2 (8280)	23-10 (7260)	19-1 (5820)
		L/240	21-7 (6580)	18-10 (5740)	17-3 (5260)
		L/360	18-10 (5740)	16-7 (5050)	15-0 (4570)

Non-Load-Bearing Steel Frame Partitions

Gypsum Board Metal Framing

25- and 20-Gauge Studs

"C" shaped metal studs fabricated from galvanized steel. 20-gauge studs are for curtainwall construction or more rigid partitions.

25- and 20-Gauge Track

Fastened at floor and ceiling to support the steel studs. Track is channel-shaped and fabricated from galvanized steel.

Cold-Rolled Channel

Used in suspended ceilings and as stiffeners in steel stud partitions.

Furring Channel

Used as cross-furring members to attach gypsum board or lath on ceilings or furred masonry walls.

Resilient-Furring Channel

Used as cross-furring members in sound-rated gypsum board partitions.

Z-Furring Channel

Generally used on the inside of exterior masonry walls to support rigid foam insulation and to provide a fastening surface for gypsum board.

Floor and Ceiling Runner

Used to anchor studs to floor and ceiling.

RECOMMENDATIONS

Framing

Align floor and ceiling tracks to ensure plumb partition. Secure track with suitable fasteners at a maximum of 24" (610 mm) o.c. Position studs in track on 16" (406 mm) or 24" (610 mm) centers by rotating into place for a friction fit. Install steel studs with all flanges pointed in the same direction. Secure studs located adjacent to door and window frames, partition intersections and corners with 3/8" (9.5 mm) pan-head Type S screws. Drive screws through both flanges of studs and tracks or by using a stud clincher.

Single Layer or First Ply

Cut gypsum board to allow for a minimum 1/4" (6.4 mm) gap between gypsum board and floor to prevent potential wicking.

Apply gypsum board with the length parallel or at right angles to the studs. Center vertical ends or edges over the stud flanges.

For steel framing, screws should be Type S, of a length to provide not less than 3/8" (9.5 mm) penetration into framing.

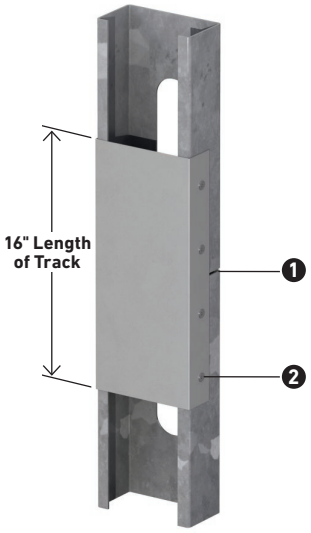
For non-fire-rated construction, attach with screws no more than 12" (305 mm) o.c. when framing is 24" (610 mm) o.c. and no more than 16" (406 mm) o.c. when framing is 16" (406 mm) o.c. or less. For vertical application of fire-rated construction, space screws 12" (305 mm) o.c. in the field and 8" (203 mm) o.c. along the vertical abutting edges, unless otherwise specified. For vertical gypsum board application with studs 24" (610 mm) o.c., erect the gypsum board on one side of the partition, and fasten gypsum board to the open end of stud flange first at vertical gypsum board joints. Complete the gypsum board application of the entire side of the partition in this manner. Vertical gypsum board joints on opposite sides of a partition should be staggered and not occur on the same stud. Secure the gypsum board to the studs so it will fit tight against the steel framing.

Face Layer

To mechanically attach the face layer for fire- or sound-rated construction, it must meet the specifications of the selected system. When attaching the face ply with mechanical fasteners and no adhesive between plies, the maximum spacing and minimum penetration for screws should be the same as for single-ply applications.

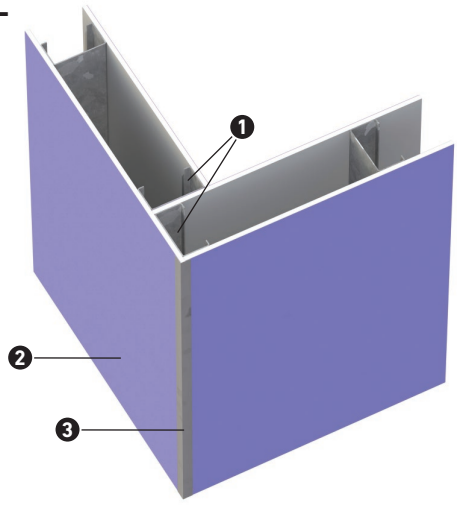
STUD SPLICE

1. Studs Butted
2. 4 Pan-Head Screws, Each Side



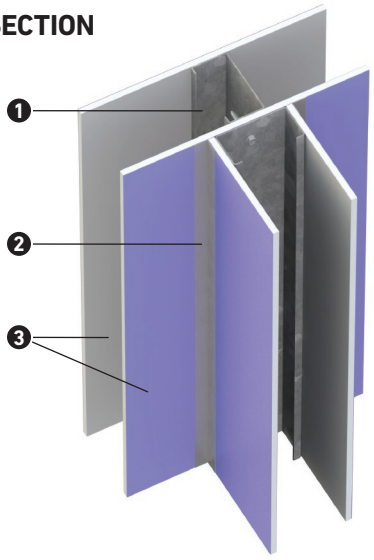
CORNER DETAIL

1. 3-5/8" Steel Stud Locate at Abutting Wall and Attach Through Gypsum Board to Stud in Abutting Wall
2. Gypsum Board
3. Corner Bead



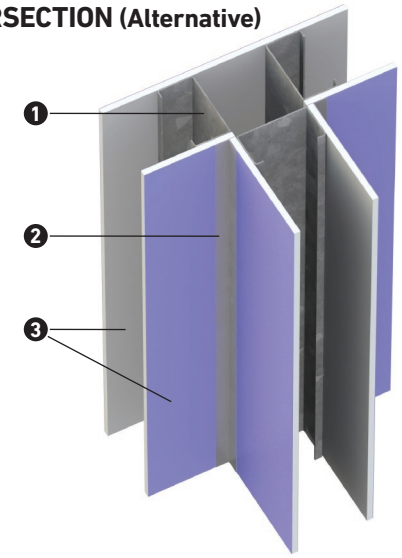
PARTITION INTERSECTION

1. Steel Stud
2. Tape and Joint Compound
3. Gypsum Board



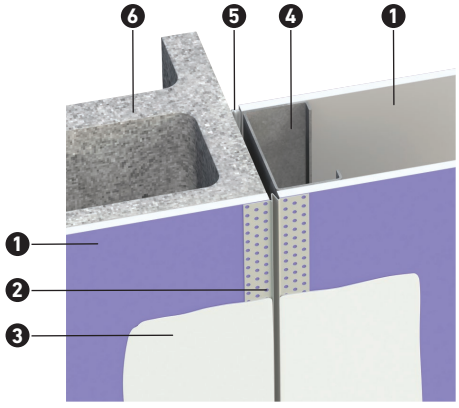
PARTITION INTERSECTION (Alternative)

1. Steel Stud
2. Tape and Joint Compound
3. Gypsum Board



JOINT WHERE WALL FRAMING CHANGES

1. Gypsum Board
2. Control Joint
3. Joint Compound
4. Steel Stud
5. Caulk
6. Masonry Wall

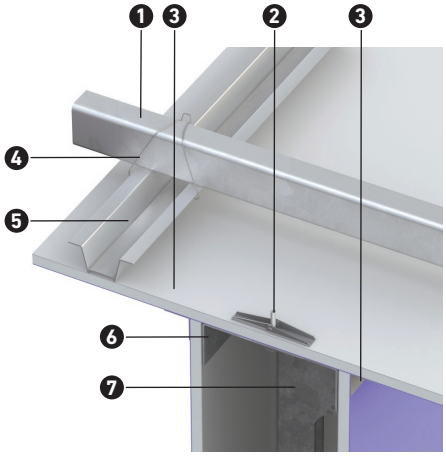


ATTACHMENT TO CONCRETE SLAB

1. Ceiling Track
2. Steel Stud
3. Caulk
4. Casing Bead

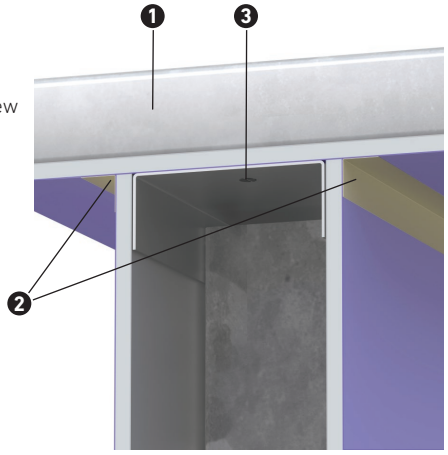
ATTACHMENT TO SUSPENDED CEILING

1. 1-1/2" C.R. Channel
2. Toggle Bolt or Molly
3. Tape and Joint Compound
4. Furring Channel Clip
5. Furring Channel
6. Steel Track
7. Steel Stud



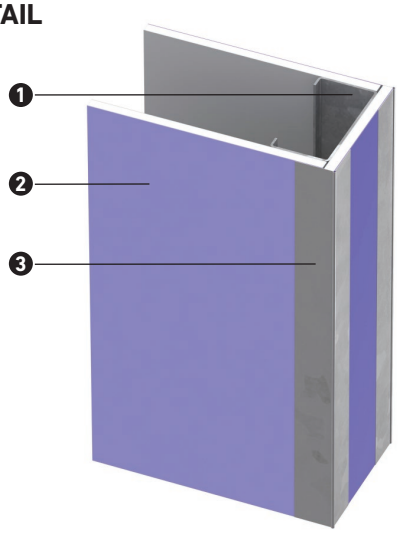
ATTACHMENT TO FURRED CEILING

1. Furring Channel
2. Tape and Joint Compound
3. Type S Drywall Screw



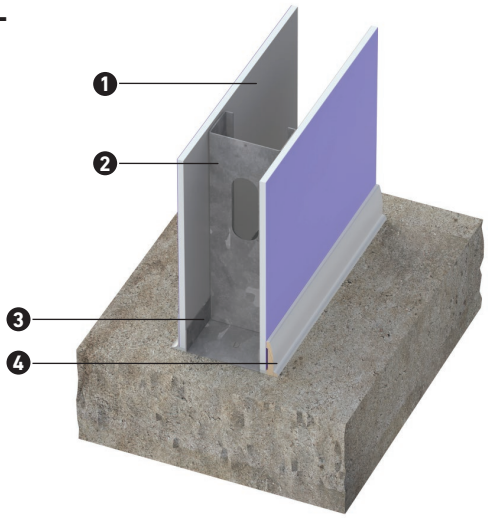
PARTITION END DETAIL

1. Steel Stud
2. Gypsum Board
3. Drywall Corner Bead



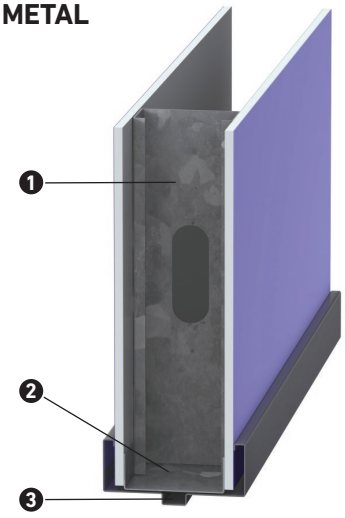
BASE DETAIL

1. Gypsum Board
2. Steel Stud
3. Floor Track
4. Wall Base



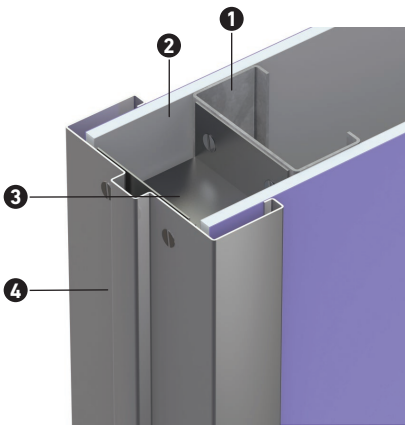
DOOR HEAD DETAIL – METAL

1. Steel Stud
2. Steel Track
3. Metal Door Head



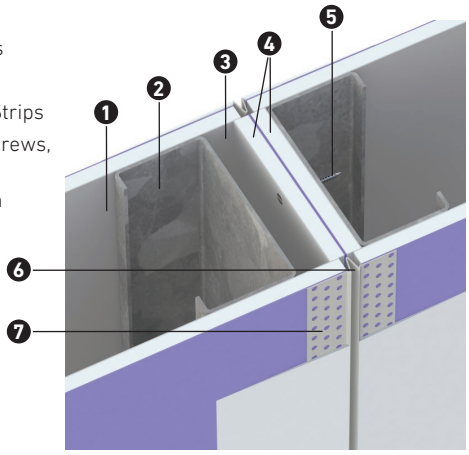
DOOR JAMB DETAIL – METAL

1. Steel Stud
2. Gypsum Board
3. Jamb Anchor Clip
4. Metal Door Jamb



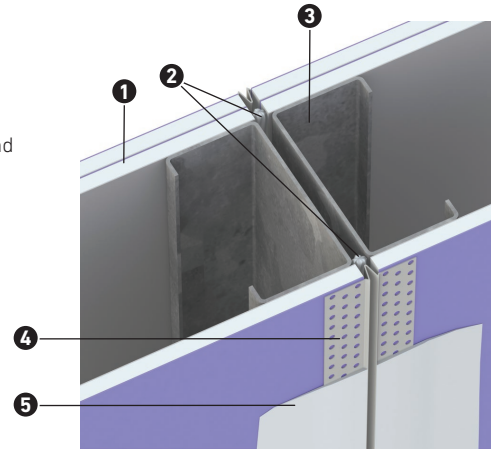
1-HOUR FIRE-RATED CONTROL JOINT DETAIL

1. 5/8" Fire-Shield
2. 2-1/2" Steel Studs
3. 5/8" Gap
4. 5/8" Fire-Shield Strips
5. 1-5/8" Drywall Screws, 24" o.c.
6. 1/2" Gap Between Board Ends
7. Control Joint



NON-RATED CONTROL JOINT DETAIL

1. Gypsum Board
2. Sealant
3. Steel Stud
4. Control Joint
5. Joint Compound



Steel Frame Ceilings – Furring Channels or Studs

DESCRIPTION

You may use the following steel furring members to attach gypsum board ceilings:

- Furring Channels
- Steel Studs

Both will fasten to the lower chord of steel joists or cold-rolled channels in suspended ceiling construction, but the methods will vary. Secure furring channels with clips or tie wires. Apply gypsum board using drywall screws spaced not more than 12" (305 mm) o.c.

RECOMMENDATIONS

The use of these furring systems with steel joist construction and gypsum board constitutes non-combustible construction. To achieve specific fire-resistance ratings, refer to the Fire and Sound Selector section.

Direct Attachment

1. To space and position furring channels, follow the manufacturer's recommendations. Tie wire furring channels and steel studs as illustrated on the following page.
2. Apply gypsum board with its long dimension at right angles to the channels. Locate gypsum board butt joints over the center of the furring channels. Attach gypsum board with 1" (25.4 mm) self-drilling drywall screws 12" (305 mm) o.c., located not less than 3/8" (9.5 mm) or more than 1/2" (12.7 mm) from the edges.

Suspended

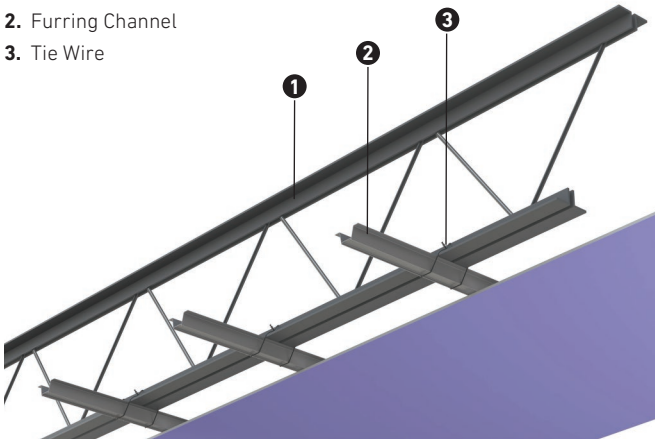
1. Install 1-1/2" (38.1 mm) cold-rolled channels 4' (1,219 mm) o.c. with 8-gauge hanger wire, spaced a maximum of 4' (1,219 mm) o.c.
2. Installing steel furring channel 2' (610 mm) with clips or wire ties at each joist intersection.
3. Apply gypsum board with its long dimension at right angles to the channels. Locate gypsum board butt joints over the center of the furring channels. Attach gypsum board with 1" (25.4 mm) self-drilling drywall screws 12" (305 mm) o.c., located not less than 3/8" (9.5 mm) or more than 1/2" (12.7 mm) from the edges.

LIMITATIONS

1. Support lighting and other fixtures by framing. Do not support them from the gypsum board
2. For large expanses of ceiling with perimeter relief, locate control joints a maximum of 50' (15.2 m) o.c. in either direction. Without perimeter relief, locate control joints a maximum of 30' (9,144 mm) o.c. in each direction.

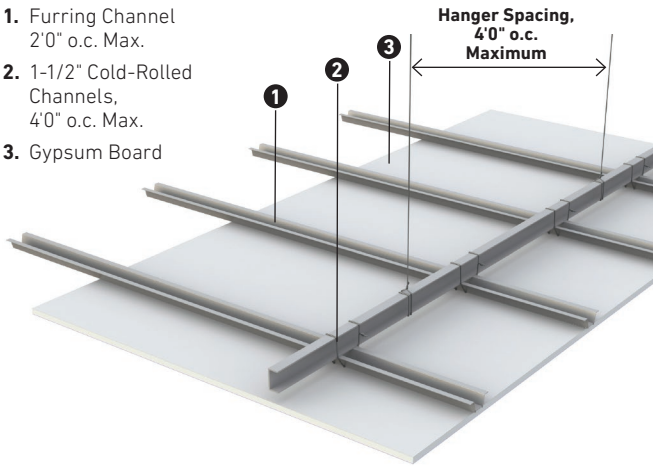
FURRING CHANNELS

1. Steel Bar Joist
2. Furring Channel
3. Tie Wire



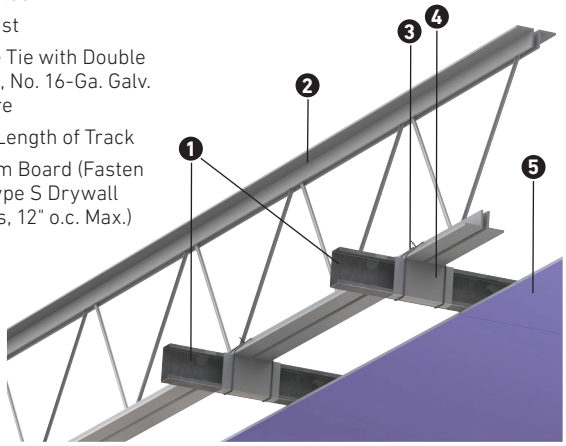
FURRING CHANNEL DETAILS

1. Furring Channel 2'0" o.c. Max.
2. 1-1/2" Cold-Rolled Channels, 4'0" o.c. Max.
3. Gypsum Board



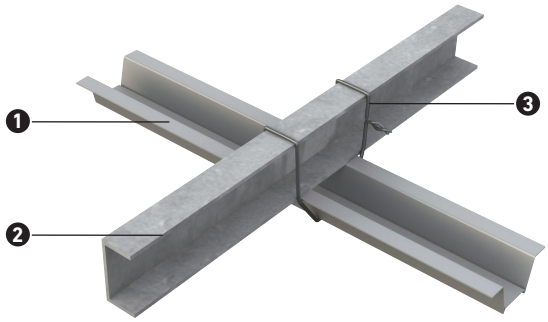
STEEL STUDS IN CEILING SYSTEM

1. Steel Stud
2. Bar Joist
3. Saddle Tie with Double Strand, No. 16-Ga. Galv. Tie Wire
4. Short Length of Track
5. Gypsum Board (Fasten with Type S Drywall Screws, 12" o.c. Max.)



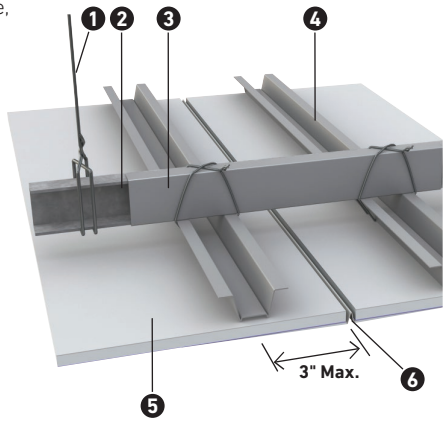
SADDLE TIE

1. Furring Channel
2. Cold-Rolled Channel
3. No. 16-Ga. Galv. Tie Wire



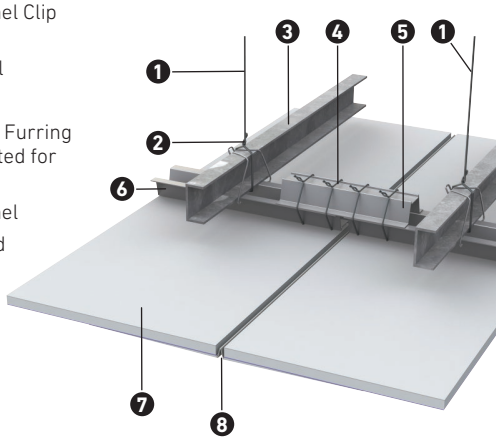
CONTROL JOINT – Parallel to Furring Channels

1. Hanger Wire, Furring Channel Clip, or Tie Wire
2. 1-1/2" Channel Piece, 16" Long, Nested (Two Tie Wires Each Side)
3. 1-1/2" Channel
4. Furring Channel
5. Gypsum Board
6. Control Joint



CONTROL JOINT – Perpendicular to Furring Channels

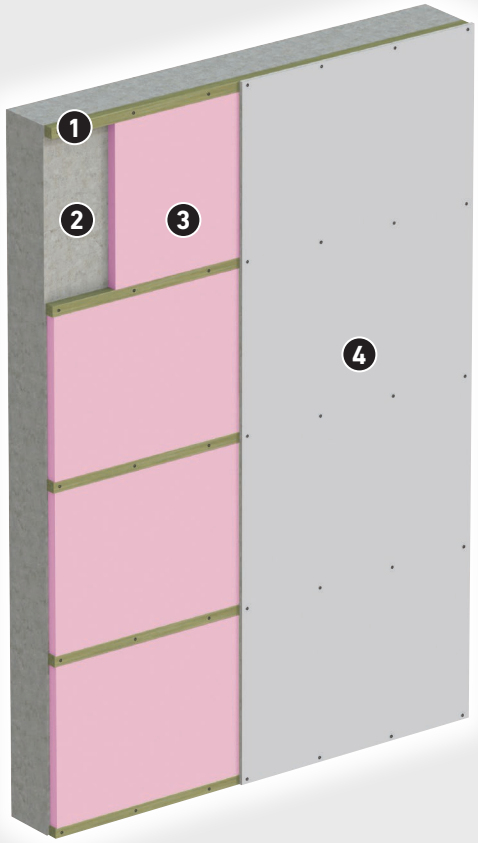
1. Hanger Wire
2. Furring Channel Clip or Tie Wire
3. 1-1/2" Channel
4. Tie Wire
5. Short Piece of Furring Channel Inverted for Splice
6. Furring Channel
7. Gypsum Board
8. Control Joint



Gypsum Board Over Masonry or Reinforced Concrete

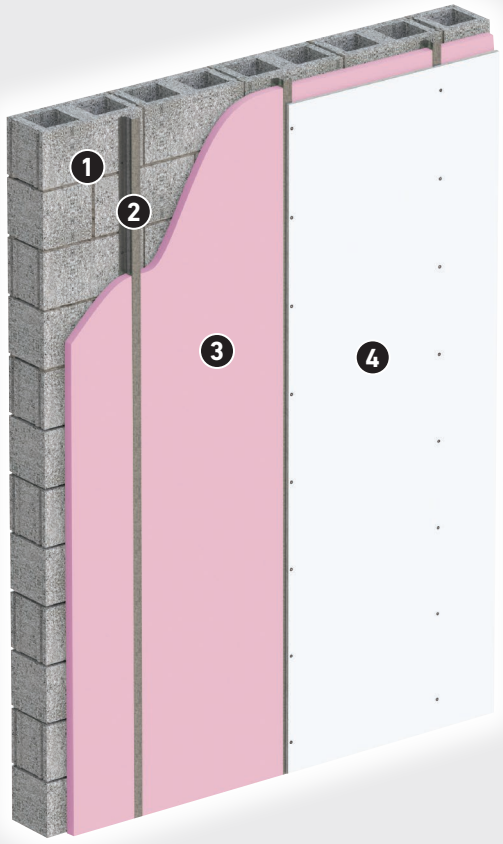
Use gypsum board over reinforced concrete or masonry to provide a smooth, paintable surface. Gypsum board can be directly adhered or mechanically fastened using wood or steel furring strips. When gypsum board is attached using furring strips, rigid insulation board can be installed for additional thermal benefit.

HORIZONTAL WOOD FURRING



1. Furring Strip
2. Reinforced Concrete Wall
3. Rigid Insulation Board
4. Gypsum Board

VERTICAL Z-FURRING



1. Concrete Masonry Wall
2. Furring Strip
3. Rigid Insulation Board
4. Gypsum Board

APPLICATION METHODS

A. Lamination

Masonry or reinforced concrete shall be above grade; dry; and free of dust, loose particles, oil, grease or other foreign material.

Use joint compound as adhesive. Mix to a consistency thick enough to allow a 2" (50.8 mm) daub to stick to the underside of a broad knife held parallel to the floor.

Apply 2" (50.8 mm) to 2-1/2" (63.6 mm) diameter daubs of adhesive 1/2" (12.7 mm) thick, 12" (305 mm) o.c. in both directions to the masonry wall or continuous beads spaced not more than 1/2" (12.7 mm). Beads shall not be less than 3/8" (9.5 mm) in diameter. The adhesive layout must provide for a row of daubs located a maximum of 2" (50.8 mm) from board ends, and carefully center daubs or beads on vertical joints. Do not apply more adhesive to the wall than what will be covered with board in 15 minutes. Approximate coverage for joint compound (powder) used as an adhesive is 30-35 lbs./1,000 sq. ft.

Cut gypsum board to allow for 1/4" (6.4 mm) minimum clearance between board and floor to prevent potential wicking.

Install gypsum board by hand, pressing each board tight to the wall and ensuring that all daubs are in positive contact with the board. Butt boards to each previously positioned board to ensure flush joints.

If necessary to hold boards straight, plumb and in proper alignment, drive masonry nails through small wood blocks and into masonry at high points only.

Fill all holes and treat joints with tape and joint compound.

B. Wood or Steel Furring

Attach steel or wood furring members to masonry walls, either vertically or horizontally, a maximum of 24" (610 mm) o.c. with masonry fasteners spaced a maximum of 24" (610 mm) o.c. Where wood furring is used over solid masonry surfaces, the wood furring shall not be less than 3/4" (19.1 mm) x 1-1/2" (38.1 mm) actual size.

Attach single layer 1/2" (12.7 mm) or 5/8" (15.9 mm) gypsum board, either vertically or horizontally, to steel or wood furring with screws spaced a maximum of 12" (305 mm) o.c. or with nails spaced 8" (203 mm) o.c. for wood furring. Gypsum board joints that are parallel to furring must abut over furring channels. The attachment surface of abutting gypsum board edges or ends shall not be less than 1-1/2" (38.1 mm) wide for wood furring members and 1-1/4" (31.8 mm) wide for steel furring.

Finish all joints between gypsum panel products as described in GA-214, *Levels of Finish for Gypsum Panel Products*.

C. Z-Furring and Rigid Insulation

Application of Z-Furring Channel

Use Z-furring channel to secure rigid insulation and gypsum board to masonry or reinforced concrete walls. The insulation thickness – 1" (25.4 mm), 1-1/2" (38.1 mm) or 2" (50.8 mm) – determines the depth of the Z-furring web. Apply the channel vertically and fasten to the masonry wall through the short, 3/4" (19.1 mm) flange with suitable masonry fasteners a maximum of 24" (610 mm) o.c. Install wood furring strips (nominal 2" [50.8 mm] wide x 1/32" [0.8 mm] greater than the foam thickness) around door and window openings. After fastening each Z-furring channel, fit a 24" (610 mm) wide floor-to-ceiling high insulation board between the wall and the wide, 1-1/4" (31.8 mm) flange.

Application of Foam

Masonry or concrete surface must be dry and clean. It must also be free of dust, dirt, form release agents, oil, grease or water-soluble materials. Treat painted masonry as recommended for laminating to painted surfaces.

Insulation may be urethane foam or extruded polystyrene. Do not use expanded bead polystyrene. Apply adhesive to the foam insulation in 3/8" (9.5 mm) diameter beads continuously around the perimeter and through the field in the long direction with the beads spaced 12" (305 mm) o.c. Contact adhesive manufacturer for compatibility with foam.

Apply the foam boards to the wall with a sliding motion and then hand press the entire board to ensure full contact of adhesive and wall surface.

Application of Gypsum Board

Erect gypsum board either vertically or horizontally to the Z-furring channels. Center the gypsum board edges or ends that run parallel to the channels and abut over the channels. Fasten gypsum board with 1" (25.4 mm) Type S screws and space them 12" (305 mm) o.c. When you have finished erecting the gypsum board, finish all joints and screw heads with joint compound. (Do not use water-based compounds to laminate prefinished boards to foam.)

LIMITATIONS

1. Use regular concrete nails for fastening to unit masonry. If block is old, pre-test nails to determine the optimum size and type to use.
2. Do not apply gypsum board in areas where it will be exposed to excessive moisture or continued high humidity.
3. Since foam plastic insulation is regulated by many building codes, consult with local building authorities before installing.
4. Since unprotected foam insulation may represent a fire hazard, cover it promptly and completely with gypsum board.

Acoustics

Our acoustical laboratory features nine full-scale, fully isolated independent test chambers complete with a sophisticated control room so multiple tests can be completed concurrently. With all these resources, we can provide quick turnarounds at an overall low cost.

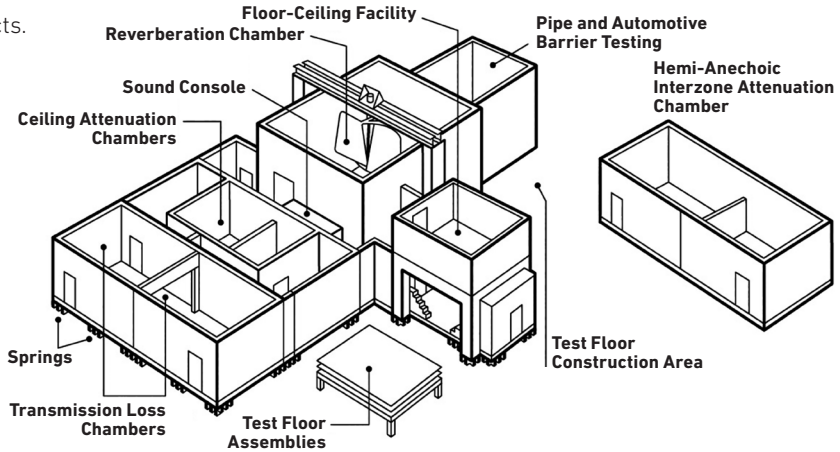
We also have 50+ pre-built, movable, floor-ceiling test assemblies and are continuously adding more custom assemblies. As of now, we do a majority of the industry's floor-ceiling testing, and, of course, we do it fast.

ACOUSTICAL LABORATORY TESTING COMPLEX

Our acoustical laboratory has been engineered to complete full-scale tests on a wide range of products.

The Acoustical Lab Features:

- **Partition Sound Transmission Loss Chambers:** Sound Transmission Class (STC).
- **Ceiling Attenuation Chambers:** Ceiling Attenuation Class (CAC).
- **Sound Absorption Chamber:** Noise Reduction Coefficient (NRC).
- **Sound Transmission Chamber:** Insertion loss of mechanical insulation products and sound transmission of smaller-scale test specimens.
- **Floor-Ceiling Chambers:** Sound Transmission Class (STC), Impact Insulation Class (IIC) and Reduction in Impact Sound Transmission (Delta IIC), with multiple test frames and overhead crane capabilities.
- **Hemi-Anechoic Test Chamber:** Articulation Class (AC) for Open Office Components, Specialty Acoustic Measurements.
- **Miscellaneous:** Additional facilities for developing custom test programs to evaluate acoustical performance of a wide range of products.



Designers and contractors have come under increasing pressure to reduce sound transmission between adjacent spaces in commercial and multifamily residential buildings. The demand for quiet comes from various sources. They include apartment dwellers who do not want to hear their neighbors' music or the noise from the building's community rooms; the business that wants a quiet workspace despite being next to the elevator shaft; and federal laws that mandate patient privacy in medical facilities. The solutions are the same whether it is a condominium, an office building or a hospital.

Sound waves can pass through the materials used in building assemblies and through flanking paths, as well as through hidden air passages. You can reduce sound transmission by acoustically decoupling the spaces, sealing air holes, adding mass and using sound-damping materials. It may require more than one approach.

Traditional sound attenuation strategies have proven themselves over decades of use, but the quest for quiet has also led manufacturers to develop new materials, such as sound-damping gypsum board, that make those strategies more effective than ever.

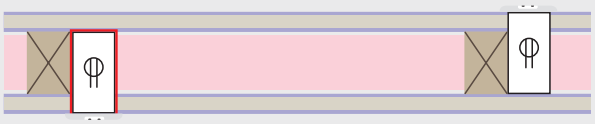
DEFINITIONS

Hertz

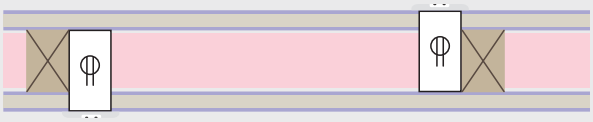
Sound frequency is measured in hertz (Hz), or cycles per second – the number of sound pressure fluctuations that occur at a fixed point within a second. The human ear can hear frequencies between 20 Hz and 20,000 Hz, though the ability to hear higher frequencies degrades with age. People are most sensitive to sound in the 100 to 5,000 Hz range. (The lowest and highest notes on a piano are 27.5 and 4,186 Hz.)

BEST PRACTICES TO REDUCE FLANKING SOUND

- Stagger electrical boxes
- Stagger board joints
- Use putty pads on electrical boxes



Recommended



Not Recommended

Decibels

Sound intensity, or loudness, is measured in decibels (dB). A quiet whisper might register at 20 dB, normal conversation at 60 dB, and loud singing at 75 dB. The scale is logarithmic, which means that sound intensity doubles with every 10 dB increase.

Flanking Sound

This is transmission of sound around building assemblies or through holes in the assembly. Flanking paths include the space above partition walls in office buildings, as well as holes in the floor and around electrical boxes. Failure to address these can derail an otherwise solid attenuation strategy.

ACOUSTIC TEST STANDARDS

ANSI S12.51/ISO 3741: *To Determine Sound Power Levels of Broad-Band Noise Sources in Reverberation Rooms*

ASTM E90: *Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E492: *Test for Impact Sound Transmission through Floor-Ceiling Assemblies using the Tapping Machine*

ASTM E989: *For Determination of Impact Transmission Class (IIC)*

ASTM E1111: *Measurement of the Interzone Attenuation of Open Office Components*

ASTM E1332: *Standard Classification for Determination of Outdoor-Indoor Sound Attenuation (OITC)*

ASTM E2179: *Test for the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission through Concrete Floors*

ASTM E3222: *Standard Classification for Determination of High-Frequency Impact Sound Ratings*

ISO 10140-2: *Laboratory Measurement of Airborne Sound Insulation of Building Elements*

ASTM C423: *Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

ASTM E413: *Classification of Rating Sound Insulation (STC)*

ASTM E795: *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

ASTM E1110: *For Determination of Articulation Class (AC)*

ASTM E1222: *Test for the Insertion Loss of Pipe-Lagging Systems*

ASTM E1414: *Standard Test for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum (CAC)*

ASTM E3133: *Laboratory Measurement of Floor Impact Sound Radiation*

ISO 354: *Acoustics/Measurement of Sound Absorption in a Reverberation Room*

SAE J1400: *Automotive Barriers*

ACOUSTICAL TERMS

STC

Sound Transmission Class, or STC, measures how well a building material or assembly blocks airborne sound. The Sound Transmission Class is a single number rating of the effectiveness of a material or construction assembly to attenuate the transmission of airborne sound. The sound transmission loss between the source and receiving rooms are plotted on a graph by frequency and sound level in decibels. The STC curve is a sliding contour that is fitted to the performance data plotted in a manner that will allow no more than 32-decibel deficiencies below the appropriate contour. The maximum deficiency at any given frequency should not exceed 8 decibels.

Once the laboratory selects the appropriate contour, the STC is determined by the decibel value of the vertical scale at 500 Hz. The STC is expressed as a single STC number (for example, STC 38). The lab measures sound transmission loss values using ASTM E90, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*, to calculate the STC ratings in accordance with ASTM E413, *Classification for Rating Sound Insulation*.

There is usually an optimum STC for a given wall assembly and budget. A wood stud wall with fiberglass batt insulation and 1/2" (12.7 mm) gypsum board on each face will get an STC of about 38, which is fine for most interior partition walls. Party walls between apartments usually require a minimum STC of 50. Area separation walls with STC's of 60 rarely get complaints from residents. For some applications, it may be worth spending more on the assembly to achieve a higher STC rating.

Note that STC is tested at one-third octave frequencies, from 125 to 4,000 Hz. This range includes normal conversation as well as everyday sounds, such as people using pots and pans. Sound-damping gypsum board panels, such as 5/8" Gold Bond® SoundBreak® XP® Gypsum Board, are extremely effective at blocking this range of sound.

Sound-damping gypsum board will somewhat attenuate extremely low frequency sound, such as that generated by stereo subwoofers or MRI machines. These sounds can be as low as 40 Hz. Higher frequencies in the human voice and speech range are where dampened gypsum board performs best. Resilient channels may work better for those lower frequencies.

IIC

The Impact Insulation Class, or IIC, refers to the impact sound transmission performance of floor/ceiling structures. It measures how well the assembly attenuates sounds, such as footsteps and impacts. The higher the rating, the better the IIC.

NRC

Noise Reduction Coefficient, or NRC, measures sound absorption within a room by materials such as carpet, furnishings, sound isolation mats and drop-in ceiling panels. It is expressed as a value between 0 and 1. A NRC of 0.8 is considered very quiet.

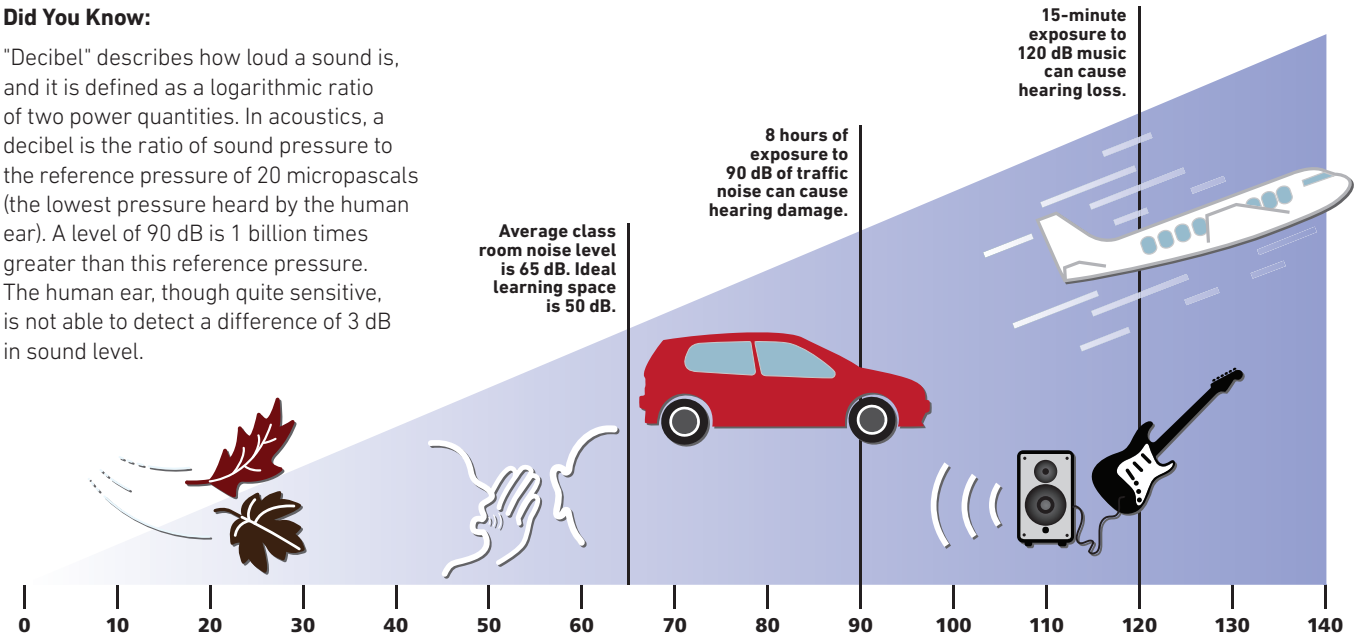
CAC

Ceiling Attenuation Class, or CAC, is a single-number measure of how well ceiling tiles block sound from traveling between rooms through the ceiling plenum above a partition wall. A CAC of more than 35 is considered good, and usually requires the placement of insulation above the ceiling tiles to about 4' (1,219 mm) from the wall. There is a direct relationship between STC and CAC. It is important to design a high CAC ceiling assembly to compliment a high STC wall assembly.

DECIBELS (dB) OF COMMON SOUNDS

Did You Know:

"Decibel" describes how loud a sound is, and it is defined as a logarithmic ratio of two power quantities. In acoustics, a decibel is the ratio of sound pressure to the reference pressure of 20 micropascals (the lowest pressure heard by the human ear). A level of 90 dB is 1 billion times greater than this reference pressure. The human ear, though quite sensitive, is not able to detect a difference of 3 dB in sound level.



SOUND ATTENUATION

When sound hits the face of a wall, the wall will vibrate like a drumhead or speaker cone, transmitting sound waves from one side to another. As mentioned above, sound can also move through airspaces or flanking paths, from one side of the wall to the other.

Ways to attenuate airborne sound include sealing the flanking paths, adding mass to the wall, decoupling the two faces, using sound-damping gypsum board, and adding insulation for cavity absorption.

Air Sealing

This is an essential part of any sound attenuation approach, regardless of the frequencies being targeted. It consists of plugging the holes and gaps that create sound-flanking paths. These include gaps around electrical outlets, recessed lights, fire sprinkler heads, and doors or windows. Sealing is done with gasketing and acoustical sealant.

Not sealing the perimeter of a wall can lower its STC by as much as 10 to 15 points.

Adding Mass

The more massive a wall, the less it will vibrate, and the less sound it will transmit. A common way to add mass is to use thicker gypsum board and/or to add more layers (5/8" [15.9 mm] gypsum board will transmit less sound than 1/2" [12.7 mm]). However, there is a law of diminishing returns when it comes to adding mass.

Remember, also, that a heavy, solid door will transmit less sound than a light, hollow-core door. Thermal, energy-efficient windows will also improve the STC of an exterior wall partition.

Decoupling

Decoupling adjacent spaces is absolutely necessary when trying to muffle with low-frequency sounds.

There are two ways to decouple a wall.

One way is to frame the wall so that each side only contacts one of the gypsum board surfaces. To do this, build two independent walls separated by airspace, or use top and bottom plates that are wider than the studs (2' [610 mm] x 6' [1,829 mm] plates and 2' [610 mm] x 4' [1,219 mm] studs, for example). Stagger the studs so that adjacent studs line up with different sides of the plate. Although staggered studs are not as effective as a double wall, they require less floor space.

Another way is to use resilient channels to separate the gypsum board from the studs. This method was originally developed to decouple the gypsum board from high-density wood studs to improve transmission loss through the wall cavity. Fasten these channels horizontally across the studs to damp the vibrations from the gypsum board. Install them over sound clips that separate the channel from the stud. The drywall screws should penetrate the channels but should not be long enough to reach the studs.

For decades, resilient channels have facilitated low-frequency sound attenuation. They work well when done right, but require near-perfect installation. They can be short-circuited by screws that penetrate the studs during construction or after completion by a tenant attaching something to the wall – a flat screen TV bracket attached to the studs, for example. Even one or two screws that penetrate the stud can undo the intended acoustical performance of the resilient channel.

Reducing Stiffness

The stiffer the wall, the more it will vibrate. (Think of a drumhead: the tighter the tension, the louder the sound when you hit it.) Metal studs work better in a sound assembly than wood studs because they are less stiff. 25-gauge metal studs perform better than 20-gauge studs, and 24" (610 mm) o.c. framing performs better than 16" (406 mm) o.c. framing. Typically, there is a 3 STC reduction when moving to thicker studs and when reducing the framing spacing.

Some structural details, like seismic panels, can make walls more rigid and more likely to transmit sound. Some wood species also transmit more sound than others. For instance, Douglas Fir and Hem Fir transmit more sound than spruce or pine.

Careful Detailing of Insulation

The secret with insulation is not to leave gaps that can create flanking paths. Research has found that leaving just 6% of the wall uninsulated will reduce the insulation's sound attenuation effectiveness by 35%. When designing fire-rated partitions, it is important to follow the insulation guidelines of the rated assembly.

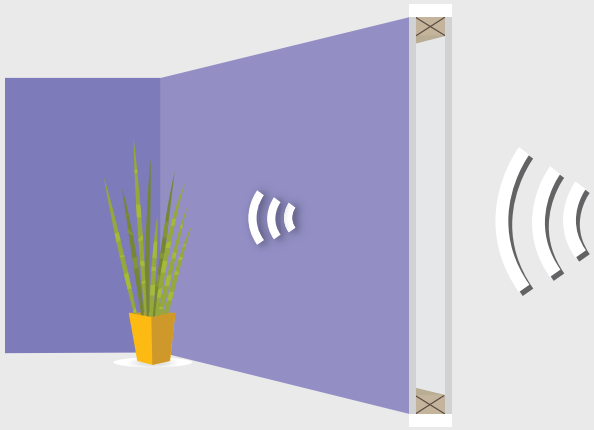
Although it is common to use R-11 fiberglass batts in sound-rated assemblies, mineral wool or sound attenuation batts may offer better performance. Spray foam does a good job at sealing air gaps, but otherwise may not provide good acoustical performance.

Using Sound-Damping Gypsum Board

Sound-damping gypsum board uses Constrained Layer Damping. Constrained Layer Damping is like a shock absorber for sound, with a viscoelastic polymer layer at the center of the panel that absorbs and dissipates sound waves. It can reduce sound transmission by 4 decibels or more. Sound-damping gypsum board handles, installs and finishes just like conventional gypsum board.

CAVITY WALL SOUND REDUCTION

- Reduce sound transmission through the wall with SoundBreak® XP®.



5/8" Gold Bond® SoundBreak® XP® Gypsum Board features a fire-resistant Type X core. It also resists mold growth when tested in accordance with ASTM D3273, earning a score of 10, the best possible score. Heavy, abrasion-resistant paper and a denser core provide greater resistance to surface abuse and indentation than conventional panels, when tested in accordance with ASTM C1629.

With SoundBreak XP, a contractor who has been using double-stud walls with conventional gypsum board can now use standard framing with no loss in acoustical performance. Achieve a STC of 60 with either double-stud walls or a single-stud wall utilizing 5/8" (15.9 mm) SoundBreak XP. Standard, single steel-stud wall framing with 5/8" (15.9 mm) gypsum board on both faces will have an STC of around 47; using 5/8" (15.9 mm) SoundBreak XP will increase that STC to 54. Eliminating the second stud wall also adds several inches of floor area to the living space.

The designer or builder can also substitute two layers of 5/8" (15.9 mm) gypsum board with one layer of SoundBreak XP with no loss of performance. This can translate to big savings in areas with high labor rates.

Also use SoundBreak XP as an additional layer in UL fire-rated assemblies, adding margins to the STC rating without compromising the fire rating.

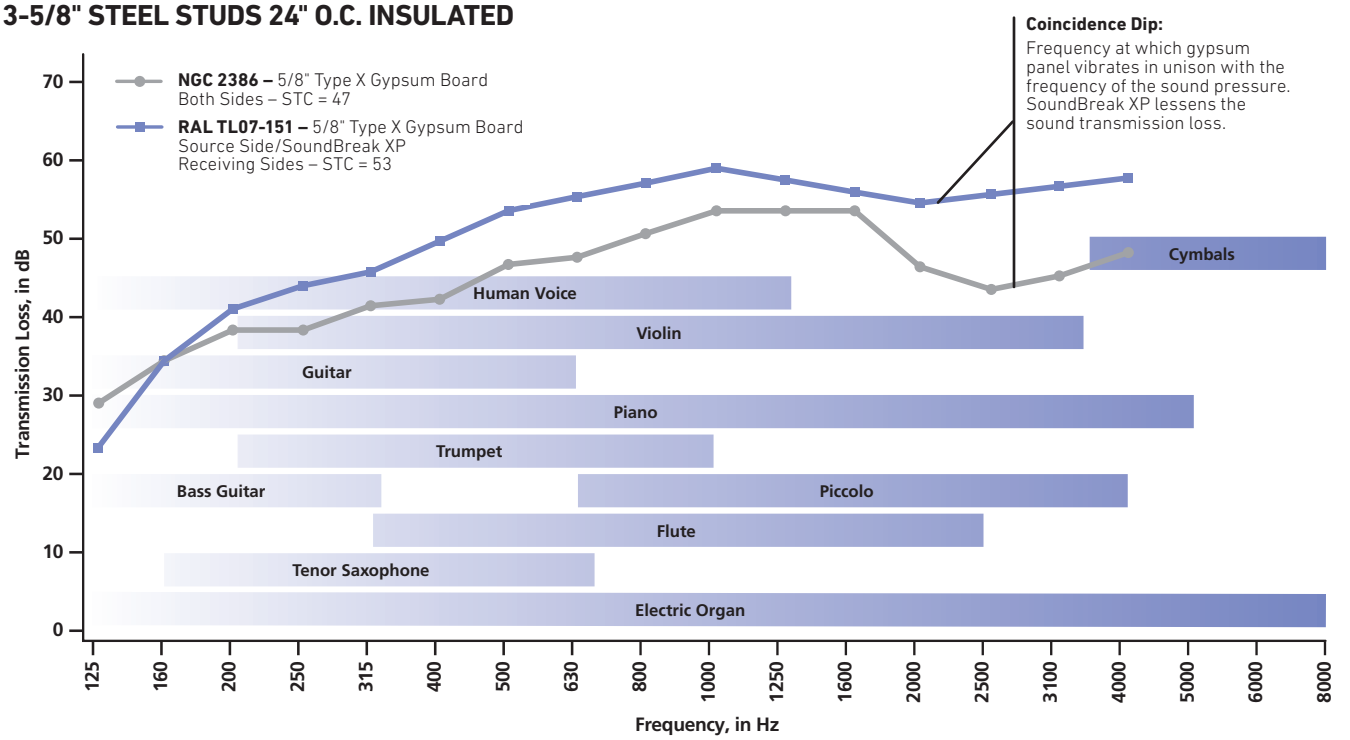
INTERIOR PARTITIONS

Interior partitions in office buildings usually extend from the floor to just above the ceiling tiles. While this creates an uninterrupted mechanical plenum, it also serves as a flanking path for sound to travel from one side of the partition to the other.

Drop-in ceiling panels raise the CAC number rather than block sound transmission. In addition, the ceiling grid usually includes a sizable path for airborne sound.

To solve this challenge, install 4' (102 mm) thick insulation batts above the ceiling next to the partition. The batts need only extend 4' (1,219 mm) from the partition. Additional insulation adds only nominal sound attenuation, according to laboratory tests performed by Gold Bond Building Products, LLC.

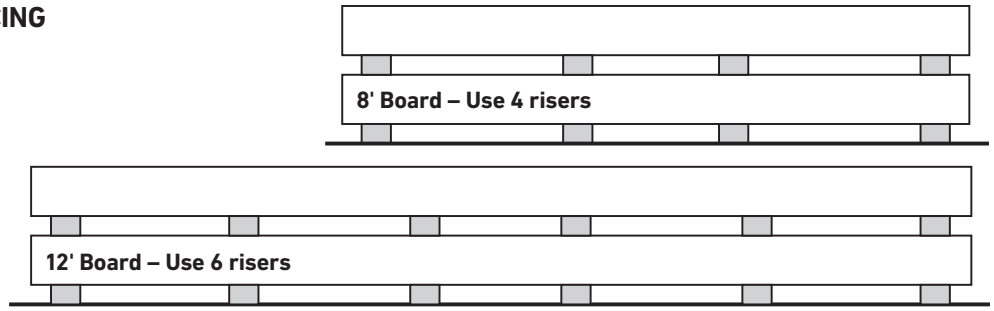
3-5/8" STEEL STUDS 24" O.C. INSULATED



Handling and Storage of Gypsum Board

RECOMMENDED RISER SPACING

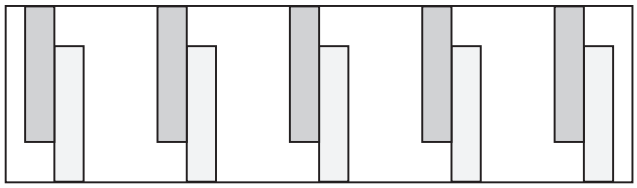
48" Board using 48" Risers
or
54" Board using 54" Risers



OPTIONAL RISER SPACING

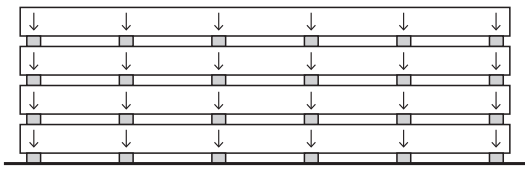
54" Board using 48" Risers

When 54" risers are not available, stagger 48" risers directly adjacent to one another as shown here to result in full coverage of 54" width of board.



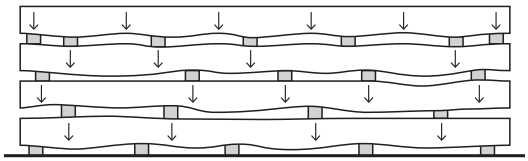
CORRECT METHOD OF PLACING RISERS

Note that all risers are placed in proper vertical alignment so each tier is evenly supported. Arrows indicate pressure.



INCORRECT METHOD OF PLACING RISERS

Cumulative pressure on unsupported lower units causes gypsum board to sag. This can occur when risers are not spaced evenly or in proper vertical alignment.



OTHER STORAGE TIPS

- Units of gypsum board are very heavy and can become unstable if proper stacking and handling procedures are not followed. Limit stacks to a maximum height of 17' (10 units) or less based on conditions.
- Gypsum panel products should always be stored flat and evenly supported on a firm, dry, level and structurally sound floor.
- Risers must be vertically aligned from top to bottom to prevent sagging or bowing.
- Individual gypsum panels should not be stored upright as it could damage the edges and create a danger – store flat and level.
- Protect the board edges, corners and ends during transport or in high-traffic areas.
- Use caution and care when moving drywall; the panels are heavy and must be moved using proper lifting techniques or equipment.
- Routine inspections of warehouse facilities for stability are recommended.
- Refer to the most current issue of GA-801 for complete handling and storage instructions.

PermaBASE: The Best Base for a Great Finish

PermaBASE Building Products, LLC offers the industry's largest variety of cement boards covering the most demanding interior and exterior applications. We have the size you need, and the product quality you expect for all your applications.

The PermaBASE family of products provides performance and peace of mind with valuable features and applications that save you time and money. Ideal for interior wet areas in kitchens and baths, PermaBASE products are increasingly being used in exterior applications. All feature EdgeTech® reinforced edge which allows fasteners to be installed closer to the edge without fracturing like other cement boards.

ADVANTAGES

- Resists moisture
- Stays strong and lasts long
- Installs quickly
- Versatile
- Fire-rated wall assemblies

INDUSTRY ASSOCIATIONS

NCMA MSV MANUFACTURED STONE VENEER

Member of TCNA TILE COUNCIL OF NORTH AMERICA, INC.

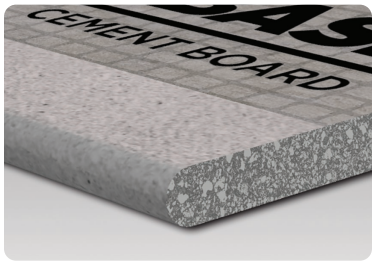
EIMA EIFS INDUSTRY MEMBERS ASSOCIATION

The PermaBASE family of products is offered or manufactured by PermaBASE Building Products, LLC.

PermaBASE®
Building Products

Product Overview

PermaBASE® Cement Board – See page 236.



PermaBASE® Cement Board is a rigid substrate made of Portland cement, aggregate and glass mesh that provides an exceptionally hard, durable surface that withstands prolonged exposure to moisture. Use PermaBASE as an underlayment or backing surface for tub and shower surrounds, floors and a variety of other interior and exterior applications.

Thickness: 3/8" (9.5 mm)*, 1/2" (12.7 mm), 5/8" (15.9 mm), 3/4" (19.0 mm)*, 1" (25.4 mm)*

Width: 32" (813 mm), 36" (914 mm), 48" (1,219 mm)

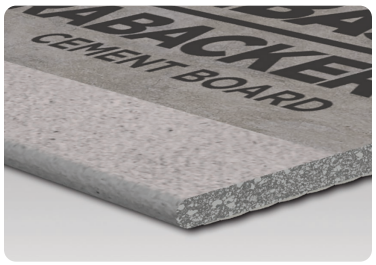
Length: 5' (1,524 mm), 6' (1,829 mm), 8' (2,438 mm)

EdgeTech® Reinforced Edge

ASTM C1325

* Special order

PermaBASE UltraBacker® Cement Board – See page 237.



PermaBASE UltraBacker® Cement Board features a smooth mesh and mat surface that creates a more rigid and easier to handle product and an improved surface providing superior tile bond. Made of Portland cement, aggregate and fiberglass mesh, it provides an exceptionally hard, durable surface that is ideally suited as an underlayment for ceramic tile on floors, countertops, tub decks, and outdoor kitchen counters.

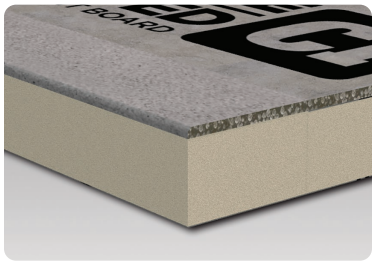
Thickness: 1/4" (6.4 mm)

Width: 36" (914 mm)

Length: 5' (1,524 mm)

EdgeTech® Reinforced Edge

PermaBASE CI™ Insulated Cement Board – See page 238.



PermaBASE CI™ Insulated Cement Board is a composite cement board combining the strength and benefits of PermaBASE® Cement Board with rigid insulation to create an ideal substrate for exterior finishes that meet or exceed most continuous insulation requirements.

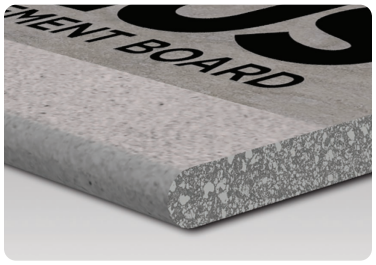
Thickness: 1" (25.4 mm), 2" (50.8 mm), 3" (76.2 mm)

Width: 48" (1,219 mm)

Length: 8' (2,438 mm)

EdgeTech® Reinforced Edge

PermaBASE PLUS® Cement Board – See page 239.



PermaBASE PLUS® Cement Board is a lighter weight, rigid substrate made of Portland cement aggregate and glass mesh that provides an exceptionally hard, durable surface that is able to withstand prolonged exposure to moisture. PermaBASE PLUS Cement Board has the same qualities built into PermaBASE Cement Board but weighs 15% less.

Thickness: 1/2" (12.7 mm)

Width: 36" (914 mm), 48" (1,219 mm)*

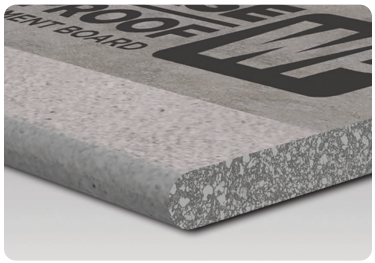
Length: 5' (1,524 mm), 8' (2,438 mm)*

EdgeTech® Reinforced Edge

ASTM C1325

* Limited geographic availability

PermaBASE WP™ Waterproof Cement Board – See page 240.



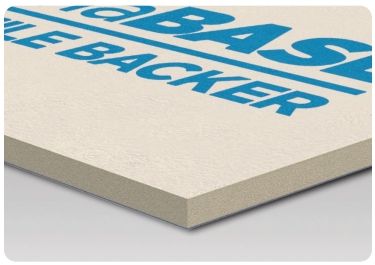
PermaBASE WP™ Waterproof Cement Board combines the strength and benefits of PermaBASE® Cement Board with a proprietary waterproofing formulation. Intended for use in interior wet areas around tubs and showers, PermaBASE WP is perfect for instances where liquid waterproofing has historically been applied over cement boards.

Thickness: 1/2" (12.7 mm)
Width: 36" (914 mm), 48" (1,219 mm)
Length: 5' (1,524 mm), 8' (2,438 mm)

EdgeTech® Reinforced Edge

ASTM C1325

PermaBASE™ Foam Tile Backer – See page 242.



PermaBASE™ Foam Tile Backer is an exceptionally lightweight, durable waterproof tile backer board designed for interior tile and stone applications. It is ideally suited for walls, showers, tub surrounds, backsplashes, floors and countertops.

Thickness: 1/2" (12.7 mm)
Width: 48" (1,219 mm)
Length: 5' (1,524 mm), 8' (2,438 mm)

Square Edge

ASTM C1289

PermaBASE™ Cement Board Tape – See page 248.

Use PermaBASE™ Cement Board Tape to reinforce PermaBASE® Cement Board joints and corners. It is polymer coated and alkali resistant.

Packaging:
Rolls: 2" x 50' (15.2 m), 2" x 250' (76.2 m), 4" x 150' (45.7 m)

Coverage:
Approx. 375 ft per 1,000 sq ft of cement board

For Interior Applications:
Use 2" (50.8 mm) wide polymer-coated (alkali-resistant) mesh tape.

For Inside and Outside Corners and Exterior Applications: Use 4" (50.8 mm) wide polymer-coated (alkali-resistant) mesh tape.

PermaBASE™ Cement Board Screws – See page 248.

Use PermaBASE™ Cement Board Screws with PermaBASE® Cement Boards. Available for both wood and metal framing, they are corrosion resistant and feature a large-diameter, low-profile head for easy and secure installation.

For Wood Framing:
Use 1-1/4" (31.8 mm), 2" (50.8 mm) or 2-1/2" (63.5 mm) long screws.

For 20-Gauge or Heavier Steel Framing:
Use Type S-12 screws or equivalent.
Use 1-1/4" (31.8 mm), 2" (50.8 mm) or 2-1/2" (63.5 mm) long screws.

Galvanized Roofing Nails for Wood Framing:
Use 1-1/2" (38.1 mm) long with hot-dipped galvanized coating. Nails should meet Federal Specification #FF-N105B/type 2 style 20.

The Industry's Largest Variety of Options

The PermaBASE family of products provide performance and peace of mind with valuable features and applications that save the contractor time and money.

We innovated the use of lightweight polystyrene beads within our Portland cement core to provide performance benefits unique to the PermaBASE family of products.

- The use of polystyrene aggregate makes PermaBASE products significantly lighter and easy to cut.
- The beads also contribute to the industry's lowest water absorption, preventing the adhering mortar from drying prematurely.

These products provide the industry's best warranties with a lifetime limited interior warranty and 15-year limited exterior warranty.

We have the size you need, and the product quality you expect for all your applications.

RESISTS MOISTURE

- Stays intact when exposed to water: will not rot, disintegrate or swell – built for the long run.
- Achieves the industry's lowest water-absorption rating (ASTM C473) – offering better installation.
- Helps inhibit mold growth with the highest possible score on mold tests (ASTM D3273 and ASTM G21).

STAYS STRONG AND LASTS LONG

- Resists impact and remains dimensionally stable – extending the life of your project.
- Holds up to the toughest conditions.

EDGETECH® REINFORCED EDGE

- Strong, reinforced edge that reduces damage from handling.
- Allows fasteners to be installed closer to the edge without fracturing like other cement boards.
- More comfortable to handle.

UL GREENGUARD GOLD CERTIFIED

- All PermaBASE products have achieved UL GREENGUARD GOLD Certification for low chemical emissions to help indoor air quality.
- PermaBASE Building Products is committed to supporting sustainable green building policies, standards and practices.

VERSATILE

- One panel, many applications.
- Adhere tile, stone or thin brick directly to PermaBASE products in exterior applications – saving time and money.
- Durable substrate for direct-applied coating systems.

INSTALLS QUICKLY

- Lightweight and easy to cut – speeding up installation.
- Reduces job site waste – easier, cleaner cut.

FIRE-RATED WALL ASSEMBLIES

- UL fire-rated wall assemblies.
- NFPA 285 approvals.
- Approved for non-combustible construction.

BEST-IN-CLASS WARRANTY

- Lifetime limited warranty: Interior applications.
- 15-year limited warranty: Exterior applications.

What Sets PermaBASE Products Apart From the Rest?

Physical Feature Benefits	PermaBASE Cement Boards	Other Cement Boards	Fiber Cement Boards
Low-Weight Glass-Mesh Cement Board	•	—	—
Reinforced Edge	•	•	—
Fastens Near Edge With No Breakout	•	—	—
Highest Damage Resistance From Handling	•	—	—
Cleanest To Score And Snap	•	—	—
Lowest Water Absorption	•	—	—
Meets 40-psf Rating Wind-Load Test Results (Stud spacing 16" o.c.)	•	—	—
Cuts With Utility Knife Vs. Power Tools	•	—	—
Standard Fasteners Countersink Into Board	•	•	—
Can Be Used In Both Residential and Commercial Steam Rooms And Saunas	•	•	—
Inorganic Vs. Organic Core	•	•	—
Lifetime Limited Warranty For Interior Use	•	•	—
15-Year Warranty For Exterior Use	•	—	—

• Standard Feature — Nonstandard Feature

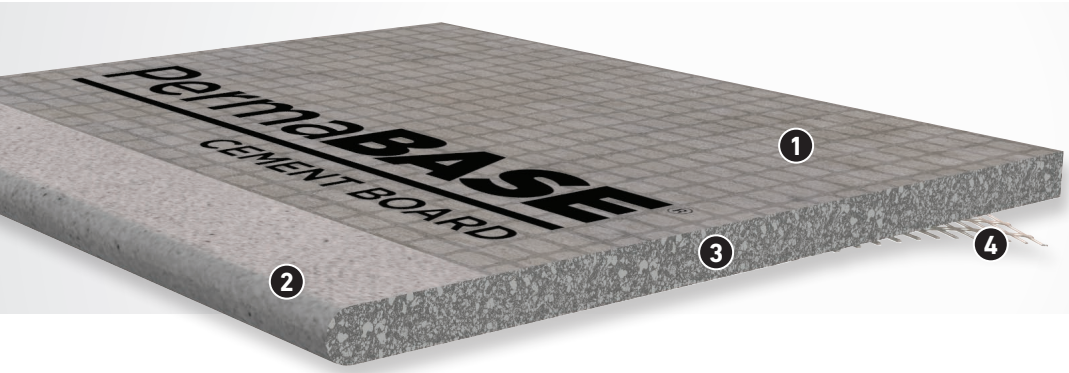
TECHNICAL DATA

Physical Properties	Test Method	1/4" UltraBacker	1/2" PermaBASE PLUS	1/2" PermaBASE	5/8" PermaBASE
Water Absorption % By Weight/24 Hours	ASTM C473	<8	<10	<8	<8
Flexural Strength (psi)	ASTM C947	>1750	>750	>750	>750
Fastener Holding (Wet And Dry, lbs) (0.400" head diameter)	ASTM D037	>85	>90	>90	>90
Weight (psf)	ASTM C473	1.8	2.4	2.9	3.65
Freeze/Thaw (Cycles)	ASTM C666	100	100	100	100
Flame Spread/Smoke Developed	ASTM E84	0/0	0/0	0/0	0/0
Compressive Strength (psi) (Indentation)	ASTM D2394	N/A	N/A	1250	1250
Wind Load	ASTM E330	N/A	30	40	40
Thermal "R"/ k Value	Property of Material	0.2/2.7	0.28/2.7	0.37/2.7	0.47/2.7
Linear Variation (Due to Change in Moisture Content)	ASTM D1037	<0.07%	<0.05%	<0.05%	<0.05%
Fungus Resistance	ASTM G21	(No Growth)	(No Growth)	(No Growth)	(No Growth)
Mold Growth On Surface	ASTM D3273*	10	10	10	10
Shear Bond Strength (7 Days psi) Modified Dry-Set Cement Mortar	ANSI A118.4	>50	>50	>50	>50

* When tested by an independent laboratory per ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*, PermaBASE Cement Board achieved a panel score of 10, the highest score possible, indicating no mold growth under the laboratory test conditions. The use of PermaBASE Cement Board in actual installations may not produce the same results as were achieved in controlled laboratory conditions. No material can be considered "mold proof," nor is it certain that any material will resist mold indefinitely.

PermaBASE® Cement Board

The Professional's Choice



1. Fiberglass Mesh
2. EdgeTech® Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

PermaBASE® Cement Board is a rigid substrate made of Portland cement, aggregate and glass mesh that provides an exceptionally hard, durable surface that withstands prolonged exposure to moisture. Use PermaBASE as an underlayment or backing surface for tub and shower surrounds, floors and a variety of other interior and exterior applications. The EdgeTech® reinforced edges allow for more secure application of fasteners closer to the edge.

BASIC USES

Applications

- Floors
- Countertops
- Walls
- Ceilings
- Exteriors

Advantages

- Stays intact when exposed to water: will not rot, disintegrate or swell – built for the long run.
- Achieves the industry's lowest water-absorption rating (ASTM C473) – offering better installation.
- Helps inhibit mold growth with the highest possible score on mold tests (ASTM D3273 and ASTM G21).
- Resists impact and remains dimensionally stable – extending the life of your project.
- Holds up to the toughest conditions.
- Lightweight and easy to cut – speeding up installation.
- Reduces job site waste – easier, cleaner cut.
- Durable substrate for direct-applied coating systems.
- Meets UL classifications for one- and two-hour fire-rated assemblies.
- Building code approved – one substrate that does the job of many.
- Lifetime limited warranty: Interior applications.
- 15-year limited warranty: Exterior applications.

SIZES AND PACKAGING

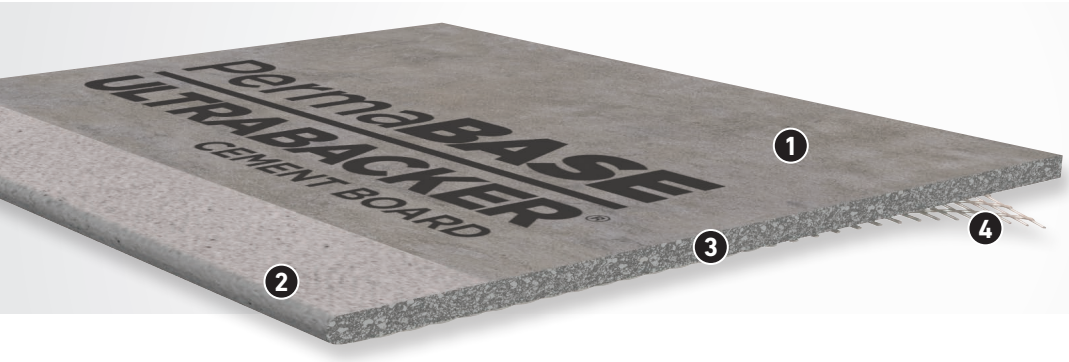
Thickness, Width and Length	Pieces per Unit
1/2" x 32" x 5' (12.7 mm x 813 mm x 1,524 mm)	50*
1/2" x 32" x 8' (12.7 mm x 813 mm x 2,438 mm)	50
1/2" x 36" x 5' (12.7 mm x 914 mm x 1,524 mm)	50
1/2" x 36" x 6' (12.7 mm x 914 mm x 1,829 mm)	50*
1/2" x 48" x 8' (12.7 mm x 1,219 mm x 2,438 mm)	30
5/8" x 48" x 8' (15.9 mm x 1,219 mm x 2,438 mm)	24
5/8" x 36" x 5' (15.9 mm x 914 mm x 1,524 mm)	35
3/8" x 36" x 5' (9.5 mm x 914 mm x 1,524 mm)	50*
3/4" x 48" x 8' (19.0 mm x 1,219 mm x 2,438 mm)	20*
1" x 32" x 8' (25.4 mm x 813 mm x 2,438 mm)	20*

* Special Order

PermaBASE® CEMENT BOARD

PermaBASE UltraBacker®

The Best Rigid 1/4" Underlayment



1. Fiberglass Mesh/Mat
2. EdgeTech® Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

PermaBASE UltraBacker® Cement Board features a smooth mesh and mat surface that creates a more rigid and easier to handle product and an improved surface providing superior tile bond. Made of Portland cement, aggregate and fiberglass mesh, it provides an exceptionally hard, durable surface that is ideally suited as an underlayment for ceramic tile on floors, countertops, tub decks, and outdoor kitchen counters.

BASIC USES

Applications

- Floors
- Countertops

Note: Not recommended for walls, ceilings or exteriors.

Advantages

- Features lowest water-absorption rating of <8% (ASTM C473).
- Stays intact when exposed to water; will not rot, disintegrate or swell.
- Helps inhibit mold growth with the highest possible score on mold tests (ASTM D3273 and ASTM G21).
- Resists impact and remains dimensionally stable.
- Holds up to toughest conditions.
- Can be applied over new or existing countertops or as flooring underlayment.
- Pre-manufactured panels save you time.
- Lifetime limited warranty: Interior application.

SIZES AND PACKAGING

Thickness, Width and Length	Pieces per Unit
1/4" x 36" x 5' (6.4 mm x 914 mm x 1,524 mm)	60

PermaBASE ULTRA BACKER® CEMENT BOARD

PermaBASE CI™

The Best for Continuous Insulation Systems

1. Fiberglass Mesh/Mat
2. EdgeTech® Reinforced Edge
3. Cementitious Core
4. Insulation

PermaBASE CI™ Insulated Cement Board is a composite cement board combining the strength and benefits of PermaBASE® Cement Board with rigid insulation to create an ideal substrate for exterior finishes that meet or exceed most continuous insulation requirements. Manufactured in a convenient 1", 2" and 3" overall thickness, PermaBASE CI utilizes common trims and accessories.

BASIC USES

Applications

Exteriors

Note: Not recommended for floors, countertops, walls, or ceilings.

Advantages

- Made with PermaBASE Cement Board and high-density polyiso insulation to provide durability and highly efficient insulation in one convenient package.
- Saves time and labor compared to installing separate insulation and cement board solutions.
- NFPA 285 approvals for adhered veneer finishes such as manufactured and natural stone, thin brick and tile as well as direct applied coatings of synthetic stucco.
- 15-year limited warranty: Exterior applications.

SIZES AND PACKAGING

Thickness, Width and Length	Pieces per Unit
1" x 48" x 8' (25.4 mm x 1,219 mm x 2,438 mm)	40*
2" x 48" x 8' (50.8 mm x 1,219 mm x 2,438 mm)	20
3" x 48" x 8' (76.2 mm x 1,219 mm x 2,438 mm)	16*

* Special Order

TECHNICAL DATA

Physical Property	Test Method	1"	2"	3"
Dimensional Stability	ASTM D2126	<0.5%	<0.5%	<0.5%
Water Absorption	ASTM C209	<5.0%	<5.0%	<5.0%
Water Vapor Transmission	ASTM E96	<1.5 perm	<1.5 perm	<1.5 perm
Flame Spread	ASTM E84	<25	<25	<25
Smoke Developed	ASTM E84	<450	<450	<450
R-Value	ASTM C518	4	10	16
Dimensions	ASTM C473	1" x 48" x 8'	2" x 48" x 8'	3" x 48" x 8'
Weight (lbs/sq ft)		2.2	2.4	2.6

PermaBASE INSULATED CI CEMENT BOARD

PermaBASE PLUS®

The Lightweight Cement Board Alternative

1. Fiberglass Mesh/Mat
2. EdgeTech® Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

PermaBASE PLUS® Cement Board is a lighter weight, rigid substrate made of Portland cement aggregate and glass mesh that provides an exceptionally hard, durable surface that is able to withstand prolonged exposure to moisture. PermaBASE PLUS Cement Board has the same qualities built into PermaBASE Cement Board but weighs 15% less. EdgeTech® reinforced edge allows for more secure application of fasteners closer to the edge.

BASIC USES

Applications

- Floors
- Countertops
- Walls
- Ceilings
- Exteriors

Advantages

- Stays intact when exposed to water; will not rot, disintegrate or swell – built for the long run.
- Achieves the industry's lowest water-absorption rating (ASTM C473) – offering better installation.
- Helps inhibit mold growth with the highest possible score on mold tests (ASTM D3273 and ASTM G21).
- Resists impact and remains dimensionally stable – extending the life of your project.
- Holds up to toughest conditions.
- Lightweight and easy to cut – speeding up installation.
- Reduces job site waste – easier, cleaner cut.
- Meets UL classifications for one- and two-hour fire-rated assemblies.
- Lifetime limited warranty: Interior applications.
- 15-year limited warranty: Exterior applications.

SIZES AND PACKAGING

Thickness, Width and Length	Pieces per Unit
1/2" x 36" x 5' (12.7 mm x 914 mm x 1,524 mm)	50
1/2" x 48" x 8' (12.7 mm x 1,219 mm x 2,438 mm)	40*

* Limited geographic availability

PermaBASE PLUS® CEMENT BOARD

PermaBASE WP™

Your Solution for Waterproof Applications

1. Fiberglass Mesh/Mat
2. EdgeTech® Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

PermaBASE WP™ Waterproof Cement Board combines the strength and benefits of PermaBASE® Cement Board with a proprietary waterproofing formulation. Intended for use in interior wet areas around tubs and showers, PermaBASE WP is perfect for instances where liquid waterproofing has historically been applied over cement boards.

BASIC USES

Applications

- Floors
- Countertops
- Walls
- Ceilings

Note: Not recommended for exteriors.

Advantages

- Waterproof core prevents water from causing harmful damage.
- Passes ANSI A118.10 for waterproofness.
- Helps inhibit mold growth with the highest possible score on mold tests (ASTM D3273 and ASTM G21).
- Smooth surface; strong bond.
- Lightweight and easy to cut.
- Lifetime limited warranty: Interior applications.

SIZES AND PACKAGING

Thickness, Width and Length	Pieces per Unit
1/2" x 36" x 5' (12.7 mm x 914 mm x 1,524 mm)	50
1/2" x 48" x 8' (12.7 mm x 1,219 mm x 2,438 mm)	40

PermaBASE WATERPROOF CEMENT BOARD WP™

Installation of PermaBASE WP™

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of L/360 (L/720 for stone) under all intended loads. Wall framing members shall be spaced a maximum of 16" o.c. and shall be a minimum of 2"x 4" nominal (wood) or 20 gauge (metal).

For flooring applications with 16" o.c. floor joists, 5/8" tongue-and-groove exterior-grade plywood or 3/4" tongue-and-groove exterior-grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 (L/720 for stone) as well as the appropriate code tables for live and dead loads. Install tile and tile setting materials in accordance with current ANSI specifications and Tile Council of North America (TCNA) guidelines.

Control Joints: Consult TCNA Handbook Installation Method EJ171. Architect, builder or design professional must specify location of all control joints. For interior installations, allow a maximum of 30 linear feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross-furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings, or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

WALLS

Wall Framing: Edges of PermaBASE WP parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper attachment. Do not install PermaBASE WP directly over protrusions from stud plane, such as heavy brackets and fastener heads. Studs above a shower floor should either be notched or furred to accommodate the thickness of the waterproof membrane or pan. The surround opening for a tub or precast shower receptor should not be more than 1/4" longer than unit to be installed. In mortar bed (mud bed) applications, PermaBASE Cement Boards can be embedded into the mud bed per TCNA Handbook method B415-19.

PermaBASE WP: Apply PermaBASE WP with ends and edges closely butted but not forced together. Stagger end joints in successive courses. Drive fasteners into field of board first, working toward ends and edges. Space fasteners maximum 8" o.c. for walls, with perimeter fasteners at least 1/2" and less than 3/4" from ends and edges. Ensure PermaBASE WP is tight to framing. Install screws flush with surface, do not overdrive screws.

Joint Reinforcement: Trowel bonding material to completely fill the board joints and gaps between each panel. Apply a 6" wide, approx. 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow it to cure. For outside corners, 4" wide alkali-resistant mesh tape is recommended. Same bonding material should be applied to corners, control joints, trims and other accessories. Feather bonding material over fasteners to fully conceal. Bonding material to be modified dry set mortar

compliant with ANSI A118.4 standards. In wet-area installations, apply approved fluid applied waterproofing per manufacturer's recommendations over entire surface to receive tile.

Sealant/Waterproofing Application: In areas where waterproof performance is required, apply approved liquid waterproofing/sealant over cement board joints and fastener heads/penetrations, as well as any exposed edges. Waterproofing must extend past treated joint onto PermaBASE WP surface a minimum of 2" on either side of the joint. This includes inside and outside corners. Follow waterproofing manufacturer's instructions on application requirements. Once all board joints have been treated following this procedure, seal all fasteners with approximately a 2" diameter coating of liquid waterproofing or approved sealant.

FLOORS AND COUNTERS

Subfloor or Base: For flooring applications with 16" o.c. floor joists, 5/8" tongue-and-groove exterior-grade plywood or 3/4" tongue-and-groove exterior-grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 as well as the appropriate code tables for live and dead loads.

Underlayment: Using a 1/4" square-notched trowel, apply a setting bed of polymer-modified mortar (or thin-set mortar) to the subfloor or counter base. Immediately laminate PermaBASE WP to subfloor or base with ends and edges closely butted but not forced together. Leave a 1/4" gap along walls. Stagger all joints so that they do not line up with underlying substrate joints. Fasten PermaBASE WP every 8" o.c. throughout board field and around all edges while setting bed mortar is still workable. Around perimeter of each board, locate fasteners 2" from corners and not less than 3/8" from the edges. Fill all joints solid with bonding material. On non-tapered joints such as butt ends, apply a 6" wide, 1/16" thick coat over the entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material; ensure that tape is centered over joint. Apply bonding material over fasteners to fully conceal. Remove all excess bonding material and allow to cure.

PermaBASE™ Foam Tile Backer

Lightest and Easiest Tile Backer to Install

1. Coated Fiberglass Facer
2. Lightweight Foam Core
3. Coated Fiberglass Facer

PermaBASE™ Foam Tile Backer is an exceptionally lightweight, durable waterproof tile backer board designed for interior tile and stone applications. It is ideally suited for walls, showers, tub surrounds, backsplashes, floors and countertops.

BASIC USES

Applications

- Floors
- Countertops
- Walls
- Ceilings

Note: Not recommended for exteriors.

Advantages

- Waterproof tile backer prevents water from causing harmful damage.
- Passes ANSI A118.10 for waterproofness.
- Mold resistant per UL 2824.
- Made from a high-density foam with specially coated facers.
- Ultra-lightweight, yet durable enough for demanding applications.

SIZES AND PACKAGING

Thickness, Width and Length	Pieces per Unit
1/2" x 48" x 5' (12.7 mm x 1,219 mm x 1,524 mm)	60
1/2" x 48" x 8' (12.7 mm x 1,219 mm x 2,438 mm)	60

TECHNICAL DATA

Physical Property	Test Method	Result
Dimensional Stability	ASTM D2126	<0.5%
Compression Strength	ASTM D1621	Grade 1
Water Absorption	ASTM C209	<3.0%
Water Vapor Transmission	ASTM E96	<1.5 perm
Flame Spread	ASTM E84	40
Smoke Developed	ASTM E84	<450
R-Value	ASTM C518	2.5
Mold Resistant	UL 2818	Yes
Weight (lbs/sq ft)		.40

PermaBASE™ FOAM TILE BACKER

Installation of PermaBASE™ Foam Tile Backer

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of L/360 (L/720 for stone) under all intended loads. Wall framing members shall be spaced a maximum of 16" o.c. and shall be a minimum of 2"x 4" nominal (wood) or 20 gauge (metal). Install tile and tile setting materials in accordance with current ANSI specifications and Tile Council of North America (TCNA) guidelines.

Control Joints: Consult TCNA Handbook Installation Method EJ171. Architect, builder or design professional must specify location of all control joints. For interior installations, allow a maximum of 30 linear feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross-furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

WALLS

Wall Framing: Edges of PermaBASE Foam Tile Backer parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper Foam Tile Backer attachment. Do not install PermaBASE Foam Tile Backer directly over protrusions from stud plane, such as heavy brackets and fastener heads. Studs above a shower floor should either be notched or furred to accommodate the thickness of the waterproof membrane or pan. The surround opening for a tub or precast shower receptor should not be more than 1/4" longer than unit to be installed.

Floors and Counters: (Subfloor or Base) For flooring applications with 16" o.c. floor joists, 5/8" tongue-and-groove exterior-grade plywood or 3/4" tongue-and -groove exterior-grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 as well as the appropriate code tables for live and dead loads.

Underlayment: Using a 1/4" square-notched trowel, apply a setting bed of polymer-modified mortar (or thin-set mortar) to the subfloor or counter base. Immediately laminate Foam Tile Backer to subfloor or base with ends and edges closely butted but not forced together. Leave a 1/4" gap along walls. Stagger all joints so that they do not line up with underlying substrate joints. Fasten tile backer every 8" o.c. throughout board field and around all edges while setting bed mortar is still workable. Around perimeter of each board, locate fasteners 2" from corners and not less than 3/8" from the edges. Fill all joints solid with bonding material. On non-tapered joints such as butt ends, apply a 6" wide, 1/16" thick coat over the entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material; ensure that tape is centered over joint. Apply bonding material over fasteners to fully conceal. Remove all excess bonding material and allow to cure.

Ceiling Installation: The deflection of the complete ceiling assembly due to dead load (including insulation, Foam Tile Backer, bonding material and facing material) should not exceed L/360. The dead load applied to the ceiling frame should not exceed 7.5 pounds per square foot. Ceiling joist or furring channel should not exceed 16" o.c. (Edges of foam tile backer parallel to framing should be continuously supported.) Provide additional blocking when necessary to permit proper Foam Tile Backer attachment.

PermaBASE Foam Tile Backer: Cut PermaBASE Foam Tile Backer using a utility knife to score/cut through the entire board. Apply Foam Tile Backer with ends and edges closely butted but not forced together. Stagger ends joints in successive courses. For ceiling applications, an approved metal foam board washer is required to be used with the screws to attach Foam Tile Backer. Drive fasteners into field of board first, working toward ends and edges. Space fasteners maximum 8" o.c. for walls, with perimeter fasteners at least 1/2" and less than 3/4" from ends and edges. Ensure Foam Tile Backer is tight to framing. Install screws flush with surface, do not overdrive screws.

Joint Reinforcement: Trowel bonding material to completely fill the board joints and gaps between each panel. Apply a 6" wide, approx. 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow it to cure. For outside corners, 4" wide alkali-resistant mesh tape is recommended. Same bonding material should be applied to corners, control joints, trims and other accessories. Feather bonding material over fasteners to fully conceal. Bonding material to be modified dry set mortar compliant with ANSI A118.4 standards. In wet-area installations, apply approved fluid applied waterproofing per manufacturer's recommendations over joints and fastener heads.

Mortar and Tile Installation: For best performance, apply thin layer of modified thin-set mortar to Foam Tile Backer with a flat-edged trowel. Press the trowel firmly into and across the surface to ensure mortar is working into the surface and bonding to the substrate. Follow up with an additional coat of modified thin-set mortar applied with a notched trowel per mortar manufacturer's recommendations. Set tile in accordance with tile and mortar manufacturer's recommendations.

Installation Guide

Interior and Exterior Applications

Interior Installation of PermaBASE® and PermaBASE PLUS®Cement Boards

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of L/360 (L/720 for stone) under all intended loads. Framing members should be spaced a maximum of 16" o.c. Cut or score PermaBASE® Cement Board on printed side of panel. Use a straightedge and pencil to mark line. Use utility knife to score/cut the glass mesh. Snap the board and cut through the now visible glass mesh on the other side. Install tile and tile setting materials in accordance with current ANSI specifications and Tile Council of North America (TCNA) guidelines.

Control Joints: Consult TCNA Handbook Installation Method EJ171. Architect, builder or design professional must specify location of all control joints. For interior installations, allow a maximum of 30 linear feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings, or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

WALLS AND CEILINGS

Wall Framing: Edges of PermaBASE parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper attachment. Do not install PermaBASE directly over protrusions from stud plane, such as heavy brackets and fastener heads. Studs above a shower floor should either be notched or furred to accommodate the thickness of the waterproof membrane or pan. The surround opening for a tub or precast shower receptor should not be more than 1/4" longer than unit to be installed. In mortar bed (mud bed) applications, PermaBASE Cement Boards can be embedded into the mud bed per TCNA Handbook method B415-19.

Ceiling Framing: The deflection of the complete ceiling assembly due to dead load (including insulation, PermaBASE, bonding material and facing material) should not exceed L/360. The dead load applied to the ceiling frame should not exceed 10 psf. Ceiling joist or furring channel should not exceed 16" o.c. (Edges of PermaBASE parallel to framing should be continuously supported.) Provide additional blocking when necessary to permit proper PermaBASE attachment.

PermaBASE Cement Board: Apply PermaBASE with ends and edges closely butted but not forced together. Stagger ends joints in successive courses. Drive fasteners into field of cement board first, working toward ends and edges. Space fasteners maximum 8"o.c. for walls, 6"o.c. for ceilings with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Ensure PermaBASE is tight to framing.

Joint Reinforcement: Trowel bonding material to completely fill the tapered recessed board joints and gaps between each panel. On non-tapered joints, apply a 6" wide, approx. 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow it to cure. For outside corners, 4" wide mesh tape is recommended. Same bonding material should be applied to corners, control joints, trims and other accessories. Feather bonding material over fasteners to fully conceal.

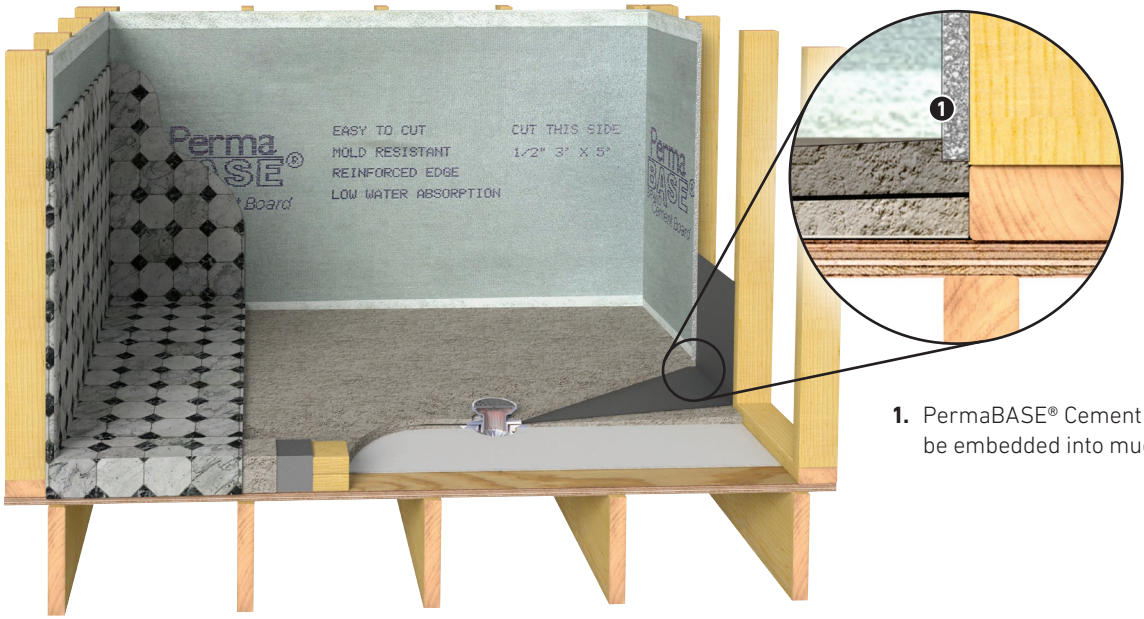
SHOWER INSTALLATION

1. Support Framing 1/4" per foot Slope Toward Drain
2. Plywood, Min. 1/2"
3. PermaBASE® Cement Board
4. Membrane
5. Modified Dry-Set Mortar
6. Alkali-Resistant Mesh Tape
7. Sealant
8. Tile and Grout

DIVIDER WALL INSTALLATION

1. PermaBASE® Cement Board
2. Membrane
3. Modified Dry-Set Mortar
4. Alkali-Resistant Mesh Tape

MUD BED SHOWER BASE



1. PermaBASE® Cement Board can be embedded into mud bed.

FLOORS AND COUNTERS

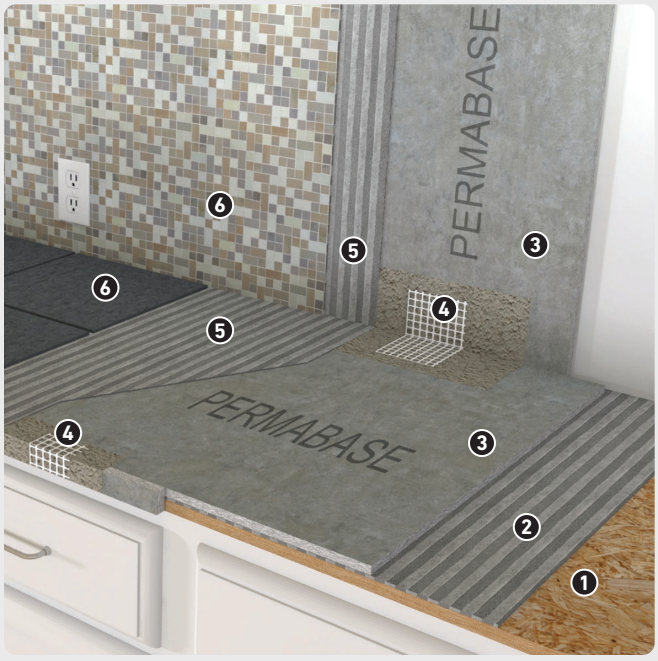
Subfloor or Base: For flooring applications with 16" o.c. floor joists, 5/8" tongue-and-groove exterior-grade plywood or 3/4" tongue-and-groove exterior-grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 as well as the appropriate code tables for live and dead loads.

Underlayment: Using a 1/4" square-notched trowel, apply a setting bed of polymer-modified mortar (or thin-set mortar) to the subfloor or counter base. Immediately laminate PermaBASE® Cement Board to subfloor or base with ends and edges closely butted but not forced together. Leave a 1/4" gap along walls. Stagger all joints so that they do not line up with underlying substrate joints. Fasten PermaBASE Cement Board every 8" o.c. throughout board field and around all edges while setting bed mortar is still workable. Around perimeter of each board, locate fasteners 2" from corners and not less than 3/8" from the edges. Fill all joints solid with bonding material. On non-tapered joints such as butt ends, apply a 6" wide, 1/16" thick coat over the entire joint. For all joints, immediately embed 2" fiberglass mesh tape fully into applied bonding material; ensure that tape is centered over joint. Apply bonding material over fasteners to fully conceal. Remove all excess bonding material and allow to cure.

LIMITATIONS

- Joints should be treated with alkali-resistant fiberglass mesh tape set in a polymer-modified mortar.
- Conventional paper drywall tape, joint compound and drywall nails or screws should not be used.
- Maximum wall framing spacing should not exceed 16" o.c. and must be designed to limit deflection to L/360 under all live and dead loads.
- Steel framing must be 20 gauge (galvanized) or heavier – 16" o.c.
- 1/4" UltraBacker should not be used on walls or ceilings.
- PermaBASE Cement Board is not a water barrier; consult local building code for moisture barrier requirements.
- Not recommended for use under vinyl flooring.
- PermaBASE Cement Board should not be exposed to temperatures over 220°F (105°C).
- PermaBASE Cement Board is not a nailing base for other finishes.

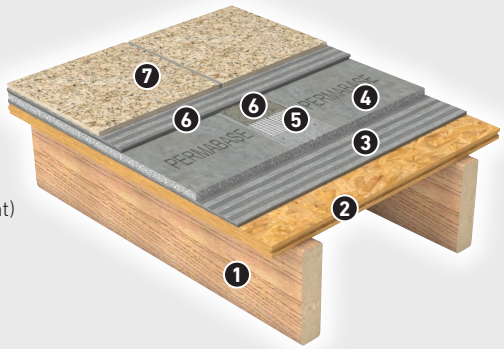
COUNTERTOP INSTALLATION



1. OSB/Plywood
2. Dry-Set Mortar
3. PermaBASE® Cement Board
4. Fiberglass Mesh Tape (Alkali-Resistant) Embedded in Mortar
5. Dry-Set Mortar
6. Tile

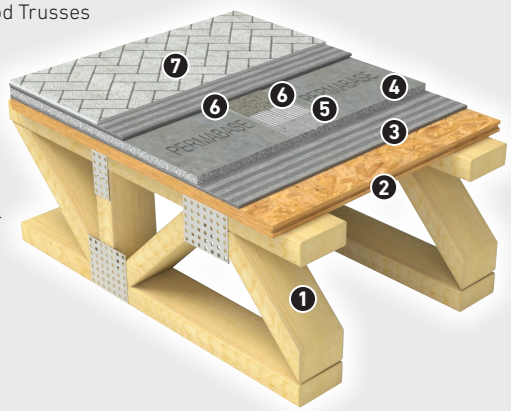
FLOOR UNDERLAYMENT – JOISTS

1. Joists
2. Subfloor
3. Dry-Set Mortar
4. PermaBASE® Cement Board
5. Fiberglass Mesh Tape (Alkali Resistant)
6. Dry-Set Mortar
7. Tile



FLOOR UNDERLAYMENT – TRUSSES

1. Open-Web Wood Trusses
2. Subfloor
3. Dry-Set Mortar
4. PermaBASE® Cement Board
5. Mesh Tape
6. Dry-Set Mortar
7. Tile



Wall Protector/Heat Shield

1/2" PermaBASE and 1/2" PermaBASE PLUS are listed by Underwriters Laboratories, Inc., for use with UL-listed solid-fuel room heaters and fireplace stoves. Used as a wall protector/ heat shield, PermaBASE Cement Board reduces by 40% the manufacturer-specified clearance (minimum 12" [305 mm]) between the room heater or stove and a combustible wall surface.

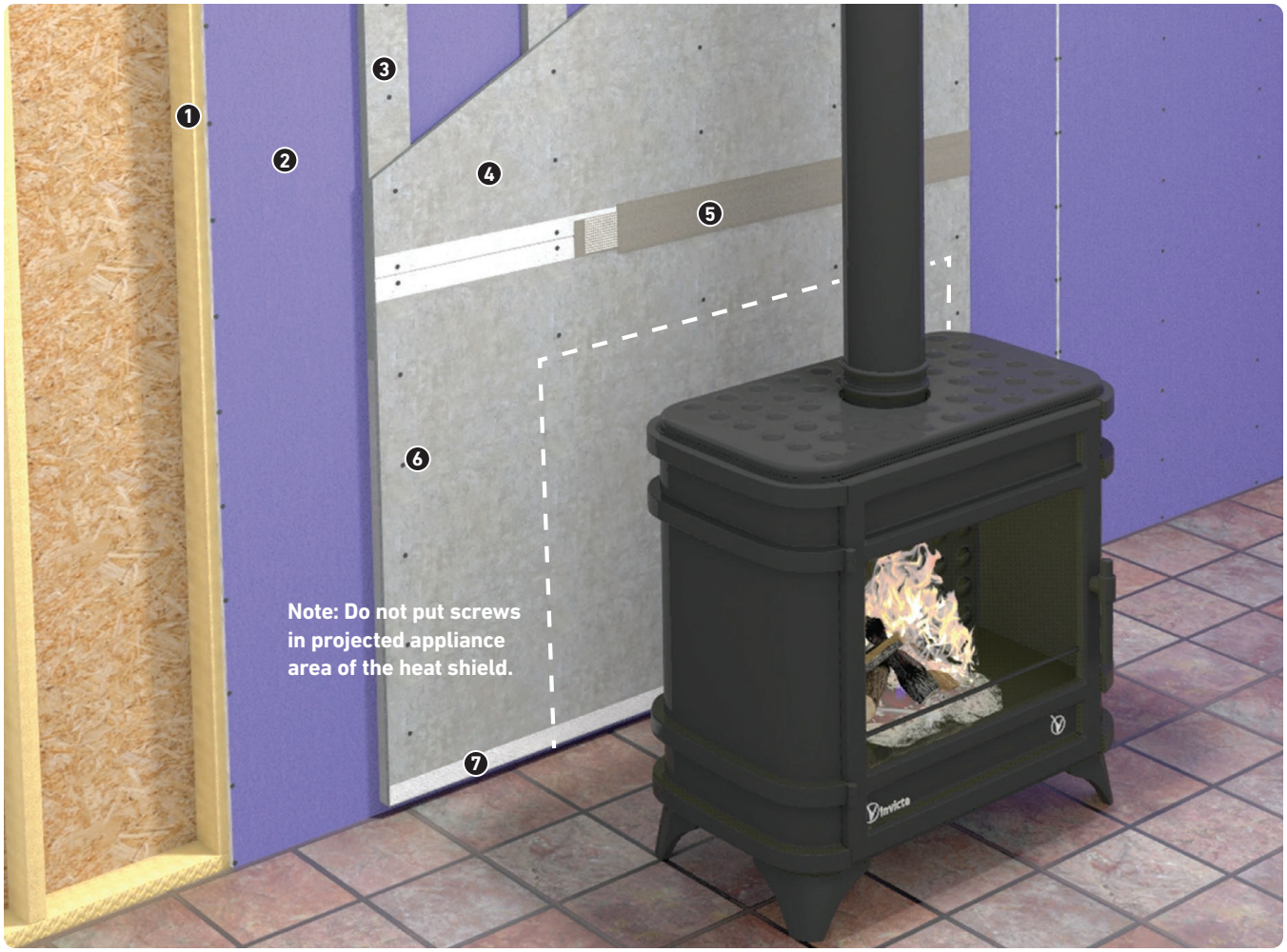
Installation: Furring is made by cutting a full PermaBASE panel into 4" (102 mm) wide strips with a carbide-tipped saw or utility knife. Attach a double layer of furring strips to the wall studs using cement board screws, which provide a minimum penetration of 3/4" (19.1 mm) into the framing.

When installing panels, leave a 3" (76.2 mm) gap at the ceiling and 1" (25.4 mm) to 2" (50.8 mm) gap at the floor. This air space is required for the proper functioning of the heat shield. Do not close or block these openings.

Heat shield panels may be cut to required size using a standard utility knife or power saw. Fasten the PermaBASE panels to the studs with galvanized roofing nails or cement board screws spaced 8" (203 mm) o.c. Cement board screws must be long enough to penetrate into framing a minimum of 3/4" (19.1 mm). Do not install any nails or screws into the wall area directly behind the proposed location of the appliance.

Finishing: Prefill joints with dry-set mortar, then immediately embed PermaBASE™ Cement Board Tape and level joints. As an alternative, apply PermaBASE Tape over the joints, then apply dry-set mortar, forcing it through the tape to completely fill and level the joints. All non-combustible finishes, such as ceramic tile, thin brick or stone, can be applied over wall-shield.

NOTE: Do not apply combustible finishes, such as wallpaper, to cement board surface.

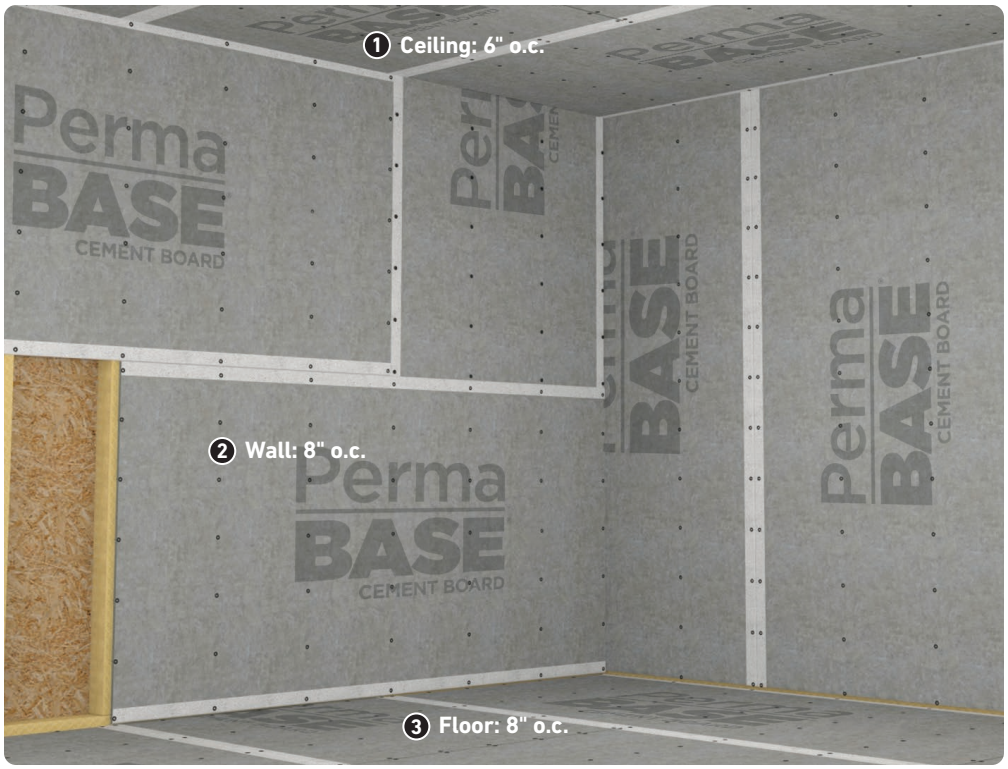


1. Studs Spaced 16" o.c.
2. Existing Gypsum Board
3. Two Layers 4" Wide Furring Strips
4. PermaBASE Heat Shield
5. Joint Treatment
6. Fasteners Spaced 8" o.c. Maximum
7. 1/2" Minimum Clearance from the Floor

PermaBASE Cement Board heat shielding permits clearance reduction up to 40% of the manufacturer's suggested clearance.

Fastener Spacing

1. **Ceilings:** Fasten PermaBASE a maximum of every 6" o.c. into existing ceiling framing.
2. **Walls:** Fasten PermaBASE a maximum of every 8" o.c. into existing wall framing.
3. **Floors:** Fasten PermaBASE a maximum of every 8" o.c. throughout board field and around all edges.



Screws Needed

Usage	Screws per Board	Screws per Sq Ft
4' x 8' PermaBASE		
Wall	52	1.65
Ceiling	63	2.00
Floor	91	2.85
3' x 5' PermaBASE		
Wall	36	2.40
Ceiling	35	2.35
Floor	54	3.60

Estimated Mesh Tape Needed – Length

Tape Size	Linear Ft per Board	Linear Ft per Sq Ft
4' x 8' PermaBASE		
2" x 4"	12	0.375
3' x 5' PermaBASE		
2" x 4"	6	0.533

Estimated Mesh Tape Needed – Rolls

Tape Size	# Rolls per 1,000 Sq Ft of Board	# Boards per Roll of Tape
4' x 8' PermaBASE		
2" x 50'	.75	4.167
4" x 150'	2.5	12.500
3' x 5' PermaBASE		
2" x 50'	10.7	6.250
4" x 150'	3.6	18.750

Installation Accessories

For a seamless installation, we recommend PermaBASE™ Cement Board Tape and PermaBASE™ Cement Board Screws.

Fasteners: PermaBASE corrosion-resistant screws or equivalent, 1-1/4", 2" or 2-1/2" long, for use with wood framing. Type S-12 screws or equivalent, 1-1/4", 2" or 2-1/2" long, for use with 20-gauge or heavier steel framing. Galvanized roofing nails, 1-1/2" long with hot-dipped galvanized coating for use with wood framing. Nails should meet Federal Specification #FF-N105B/type 2 style 20.

Joint Reinforcement: PermaBASE Cement Board Tape must be used on all edges and cuts made to size. Use 2" wide polymer-coated (alkali-resistant) mesh tape for interior applications and 4" wide polymer-coated (alkali-resistant) mesh tape is recommended for inside and outside corners and all exterior applications.

Exterior Installation of PermaBASE® Cement Board

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of L/360 under all intended live (including wind) and dead loads.

Note: Cut or score PermaBASE on rough side of panel.

Control Joints: For exterior installations, consult finish manufacturer's instructions for spacing requirements. For exterior tile applications, control joints should be spaced a maximum of every 12'. If no recommendation is available, allow a maximum of 16 linear feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

WALLS AND CEILINGS

Wall Framing: Studs should be spaced a maximum of 16" o.c. Edges/ends of PermaBASE parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper PermaBASE attachment. Do not install PermaBASE directly over protrusions from stud plane such as heavy brackets or fastener heads.

Ceiling Framing: The deflection of the complete ceiling assembly due to dead load (including insulation, PermaBASE, bonding material and facing material) should not exceed L/360. The dead load applied to the ceiling frame should not exceed 10 psf. Ceiling joist or furring channel should not exceed 16" o.c. (Edges of PermaBASE parallel to framing should be continuously supported.) Provide additional blocking when necessary to permit proper PermaBASE attachment.

Water Barrier: While PermaBASE is unaffected by moisture, a water/air resistive barrier (WRB) must be installed to protect the cavity. The type and specific placement or location of the water barrier will vary based on local building codes and/or manufacturers' warranties. Consult the WRB manufacturer's recommendations for specific installation guidelines.

PermaBASE Cement Board: Apply PermaBASE with ends and edges closely butted but not forced together. Stagger end joints in successive courses. Drive fasteners into field of cement board first, working toward ends and edges. Space fasteners maximum 8" o.c. for walls, 6" o.c. for ceilings with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges.

Joint Reinforcement: Trowel bonding material to completely fill the tapered recessed board joints and gaps between each panel. On non-tapered joints, apply a 6" wide, approximately 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 4" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow to cure. Same bonding material should be applied to corners, control joints, trims or other accessories. Feather bonding material over fasteners to fully conceal.

Perma BASE® CEMENT BOARD

DECKS

Subfloor: Plywood should be securely glued and fastened to floor joists spaced a maximum of 16"o.c. Subfloor should be sloped at a minimum pitch of 1/4" per foot. The floor surface should be true to plane within 1/8" in 10'.

Underlayment: Using a 1/4" square-notched trowel, apply a setting bed of dry-set mortar to the subfloor. Immediately laminate PermaBASE to subfloor, leaving a 1/8" space between boards at all joints and corners. Leave a 1/4" gap along walls. Stagger joints so they do not line up with underlying substrate joints. Fasten PermaBASE every 8" o.c. throughout board field and around all edges while setting bed mortar is still workable. Around perimeter of each board, locate fasteners 2" from the corners and not less than 3/8" from the edges. Fill all joints solid with bonding material. On non-tapered joints such as butt ends, apply a 6" wide, 1/16" thick coat over the entire joint. For all joints, embed alkali-resistant fiberglass mesh tape fully into applied bonding material; ensure that tape is centered over joint. Apply bonding material over fasteners to fully conceal. Remove all excess bonding material and allow it to cure.

Waterproof Membrane: Trowel apply waterproof membrane to the entire surface of the cement board, following membrane manufacturer's installation instructions in detail.

Cement Board Stucco Wall Systems (CBSS)

For use in residential and low-rise commercial applications, CBSS provides a drainage system to help prevent water from penetrating behind cladding in framed construction. It complies with ASTM D226, protecting approved sheathings/structural components and helping to evacuate incidental water.

BENEFITS

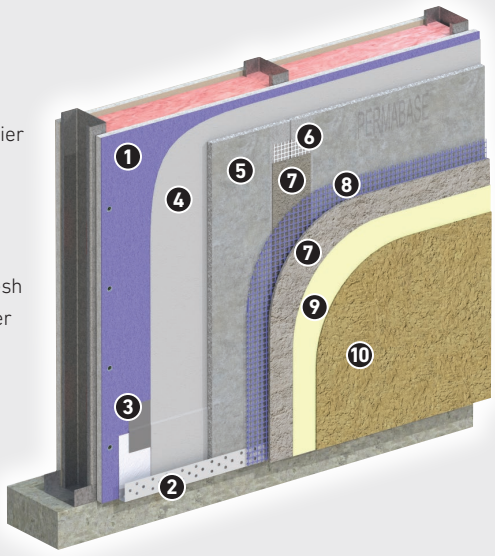
- Appropriate for all climates and resists the growth of mold and mildew.
- Extremely durable with increased resistance to impact and inclement weather.
- Acrylic polymers provide more resistance to fading, cracking and peeling.
- Engineered system that allows a faster installation while providing superior quality control (manufactured product that must comply with ASTM product specifications).
- Speed up your schedule – easier, cleaner installation than traditional stucco.
- Provide drainage system to help prevent water from penetrating behind cladding in framed construction.
- Choose from a variety of textures and color options.
- Provides a 15-year exterior warranty.

LIMITATIONS

- Follow finish material manufacturer's instructions for proper installation.
- Treat joints in PermaBASE Cement Board with mesh tape and base coat.
- Thin veneer construction can reveal planar irregularities in framing.
- Minor cracking at joints may become visible in finished exterior surface.
- Exterior finishes applied directly to PermaBASE Cement Board: Reinforcing mesh must be embedded in base coat (consult exterior finish manufacturer for additional installation requirements).
- Conventional Portland cement plaster systems: Self-furring metal lath must be used over PermaBASE Cement Board and fastened to studs.
- Code-approved water/air resistive barrier (WRB) must first be installed to protect the cavity (type and placement will vary per local building codes and/or manufacturer's specifications, installation guidelines and warranties).

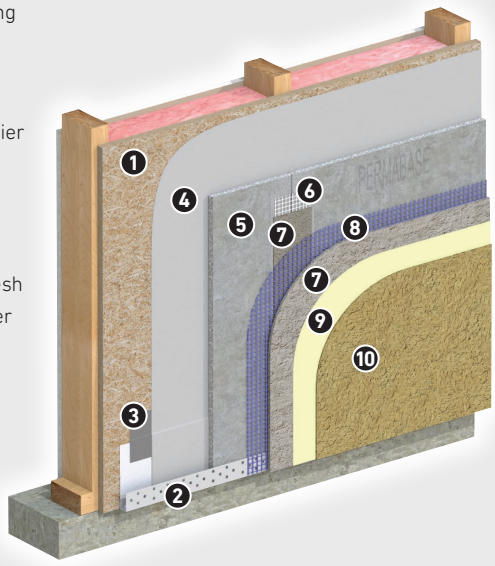
CEMENT BOARD STUCCO – COMMERCIAL

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. PermaBASE® Cement Board
6. Mesh Tape
7. Base Coat
8. Reinforcing Mesh
9. Optional Primer Coat
10. Finish Coat



CEMENT BOARD STUCCO – RESIDENTIAL

1. Wood Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. PermaBASE® Cement Board
6. Mesh Tape
7. Base Coat
8. Reinforcing Mesh
9. Optional Primer Coat
10. Finish Coat



Cement Board Masonry Veneer Wall Systems (CBMV)

For use in residential and low-rise commercial applications, CBMV offers a complete, engineered solution for installation of adhered veneers. It provides the ability to incorporate an effective water-management system for a variety of building exteriors with manufactured or natural stone, tile and thin brick veneers.

BENEFITS

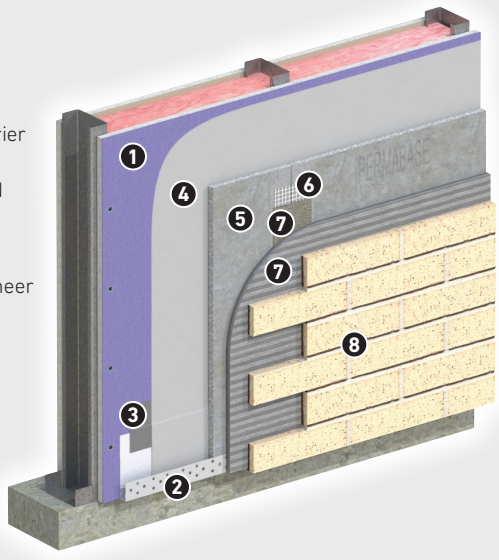
- Engineered system that allows a faster installation while providing superior quality control (manufactured product that must comply with ASTM product specifications).
- Increased performance by utilizing modified adhesive mortars (designed for hanging materials) rather than type S&N mortars (developed for stacking materials).
- Extremely durable with increased resistance to impact and inclement weather.
- Approved for use in ASTM 1780, and cement board is cited as an approved substrate for this system by the Masonry Veneer Manufacturers Association (MVMA): Installation Guide and Detailing Options for Compliance with ASTM C1780.
- Easily allows for the inclusion of continuous installation into the assembly.
- Appropriate for all climates, and resists the growth of mold and mildew.
- Speed up your schedule – faster, easier and cleaner than traditional metal lath/scratch-coat method.
- IBC/IRC compliant; meets ASTM C1325.
- PermaBASE products are approved as a substrate for direct applied finishes, tile, stone and thin brick in exterior applications, as outlined in *UL Evaluation Report ER-22158*.
- PermaBASE products are suitable for use in combustible and noncombustible construction under the IBC and IRC, as outlined in *UL Evaluation Report ER-22158*.

LIMITATIONS

- Sheathing selection and installation varies according to type of wall construction.
- Code-approved water/air resistive barrier (WRB) must be installed to protect the cavity (type and placement will vary per local building codes and/or manufacturer's specifications, installation guidelines and warranties).

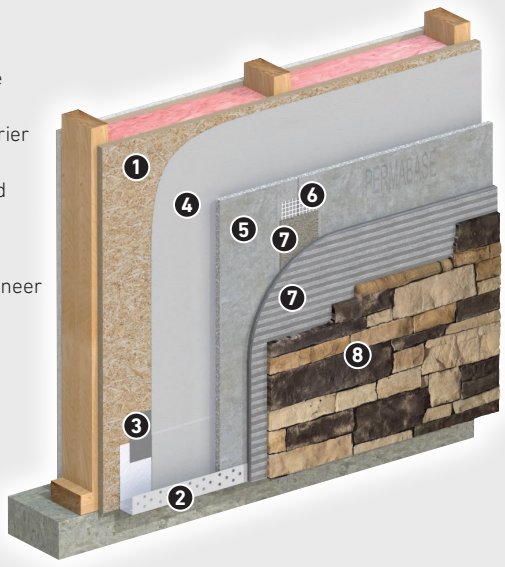
CEMENT BOARD MASONRY VENEER – THIN BRICK

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. PermaBASE® Cement Board
6. Mesh Tape
7. Mortar
8. Thin Brick Veneer



CEMENT BOARD MASONRY VENEER – STONE

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. PermaBASE® Cement Board
6. Mesh Tape
7. Mortar
8. Thin Stone Veneer



Exterior Installation of PermaBASE CI™

WALLS

Wall Framing: Framing members should be spaced a maximum of 16" o.c. and shall be a minimum of 2"x 4" nominal (wood) or 20 gauge (metal). Edges of PermaBASE CI™ Insulated Cement Board parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper attachment.

Water Barrier: While PermaBASE CI Insulated Cement Board is unaffected by moisture, a water/air resistive barrier (WRB) must be installed to protect the cavity. The type and specific placement or location of the water barrier will vary based on local building codes and/or manufacturers' specifications, installation guidelines and warranties. Consult the WRB manufacturer's recommendations for specific installation guidelines.

PermaBASE CI Insulated Cement Board:

Note: PermaBASE CI can be cut using three methods:

1. Score PermaBASE CI from the foam side using a utility knife to score/cut completely through the insulation and into the back of the cement board. The board can then be snapped. Cut through the mesh on the front of board to complete the cut.
2. PermaBASE CI can be cut to length effectively with a hand saw.
3. While wearing the proper protective equipment such as safety glasses and approved respirator, use a power saw with the appropriate blade to cut through the entire panel. Penetrations can be created in the panel with a drywall saw.

Apply PermaBASE CI with ends and edges closely butted, but not forced, together. Stagger end joints in successive courses. Drive fasteners into field of cement board first, working toward ends and edges. Space fasteners maximum 8" o.c. with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Ensure PermaBASE CI Insulated Cement Board is tight to framing. Do not overdrive screws to the point they penetrate the fiberglass mesh in PermaBASE CI.

Joint Reinforcement: Trowel bonding material to completely fill the tapered recessed board joints and gaps between each panel. On non-tapered joints, apply a 6" wide, approx. 1/16" thick, coat of bonding material over entire joint. For all joints, immediately embed 4" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow to cure. Same bonding material should be applied to corners, control joints, trims or other accessories. Feather bonding material over fasteners to fully conceal.

Control Joints: For exterior installations, consult finish manufacturer for spacing requirements. For exterior tile applications, control joints should be spaced a maximum of every 12'. If no recommendation is available, allow a maximum of 16 linear feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross-furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

PermaBASE INSULATED CI™ CEMENT BOARD

LIMITATIONS

- Treat joints with 4" wide alkali-resistant fiberglass mesh tape set in a modified mortar or stucco basecoat.
- Steel framing must be minimum 20-gauge (galvanized) (.0312" design thickness) or heavier.
- Do not expose PermaBASE CI to temperatures over 220˚F (105˚C).
- Do not use PermaBASE CI as a nailing base for other finishes.
- Thin veneer construction can reveal planar irregularities in framing.
- Minor cracking at joints may become visible in finished exterior surface.
- For exterior finishes applied directly to PermaBASE CI, reinforcing mesh must be embedded in basecoat (consult exterior finish manufacturer for additional installation requirements).
- Sheathing selection and installation varies according to type of wall construction.

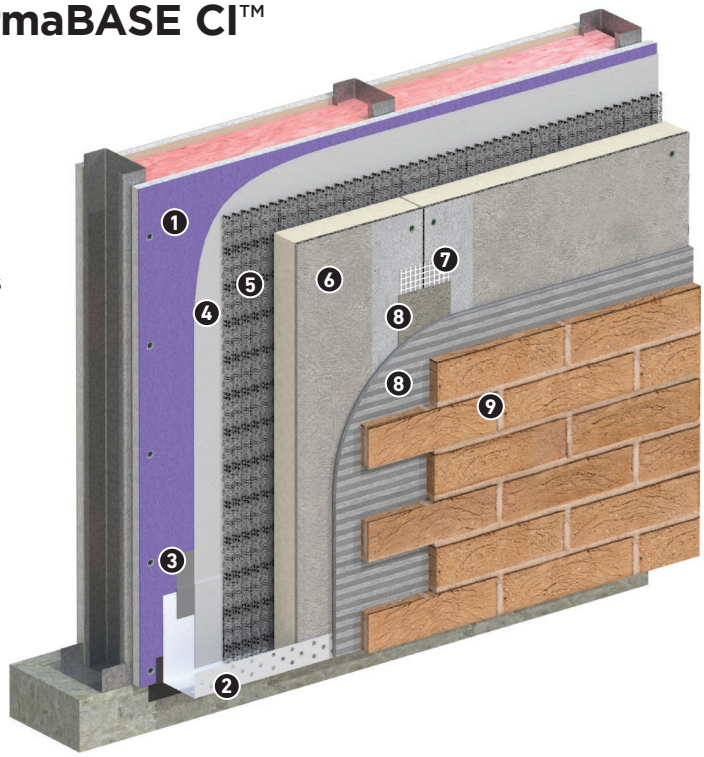
Advantages of Creating Continuous Insulation with PermaBASE:

- Provides better thermal comfort, lowers heating and cooling costs, reduces likelihood of trapped moisture.
- Helps mitigate the loss of heat/air conditioning by insulating the studs.
- Allows multiple finishes on one substrate.
- Works in all climates – adaptable to varying regional system requirements.
- 15-year exterior warranty.
- Speeds up your schedule – faster to install than traditional method.

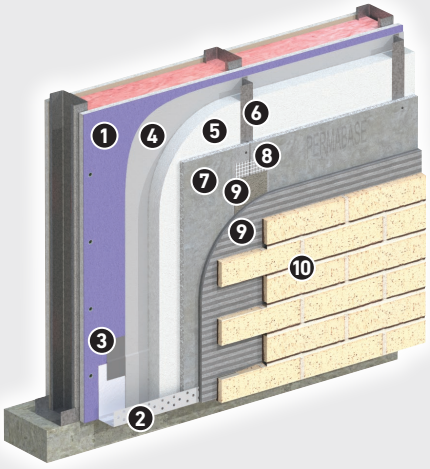
Continuous Insulation with PermaBASE CI™

As building codes and building insulation requirements become increasingly stringent, you can count on PermaBASE products to help meet your substrate needs for Continuous Insulation (CI). CI on the exterior envelope helps to eliminate air and moisture leakage as well as reduce thermal bridging, or the heating/cooling loss transmitted through steel studs. With PermaBASE CI, designers and contractors have a simpler, faster method of achieving continuous insulation. PermaBASE® Cement Board has also been used for years to install the final exterior finish over the exterior insulation in applications including Z-furring channels, batten strips and direct fastener applications. PermaBASE CI and PermaBASE Cement Board can be used in all types of construction, including commercial, residential and multifamily.

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. Drainage
6. PermaBASE CI™ Insulated Cement Board
7. Mesh Tape
8. Mortar
9. Thin Brick

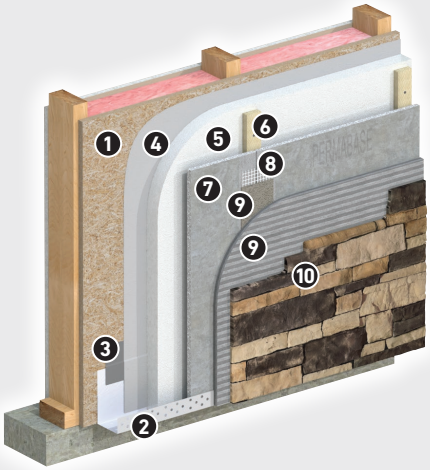


Alternative Methods to Achieve Continuous Insulation with PermaBASE



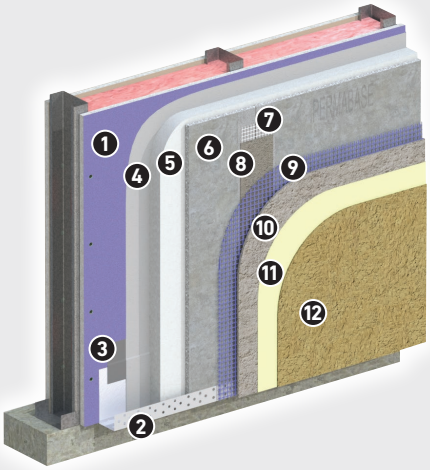
Z FURRING-INSTALLATION

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. Insulation
6. Z-Furring
7. PermaBASE® Cement Board
8. Mesh Tape
9. Mortar
10. Thin Brick Veneer



BATTEN STRIP

1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. Insulation
6. Wood Batten
7. PermaBASE® Cement Board
8. Mesh Tape
9. Mortar
10. Thin Brick Veneer



SPECIALTY FASTENER

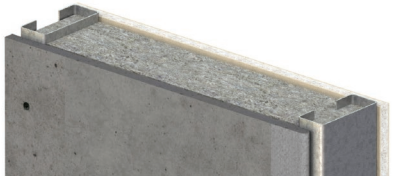
1. Sheathing
2. Weep Screed
3. Flashing Tape
4. Weather Resistant Barrier
5. Insulation
6. PermaBASE® Cement Board
7. Mesh Tape
8. Base Coat
9. Mesh
10. Base Coat
11. Primer
12. Finish Coat

Fire-Rated Wall Assemblies

PermaBASE® Cement Board has been tested and/or approved for use in a variety of fire-rated wall systems.

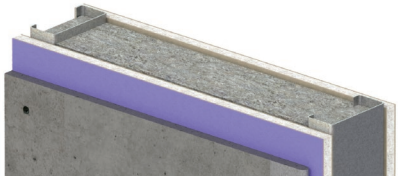
UL LISTED PERMABASE® CEMENT BOARD PARTITIONS – STEEL FRAMING

1-Hour Fire Rating
UL Designs: V452
W472



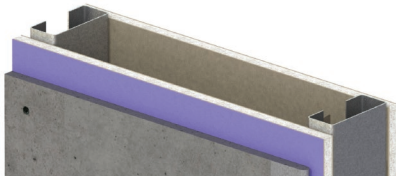
1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally to one side of 3-5/8" steel studs 16" o.c. 5/8" Gold Bond® Fire-Shield® Gypsum Board applied vertically to opposite side. 3" mineral wool insulation in stud cavities.

1-Hour Fire Rating
UL Design: V425



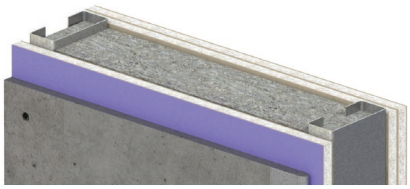
1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally over 5/8" Gold Bond® Fire-Shield® Gypsum Board or similar 5/8" fire-resistant gypsum board applied vertically to each side of 3-1/2", 20-gauge steel studs 16" o.c. PermaBASE secured to studs with cement board screws of adequate length to penetrate studs 3/8" spaced 8" o.c.

1-Hour Fire Rating
UL Design: V438



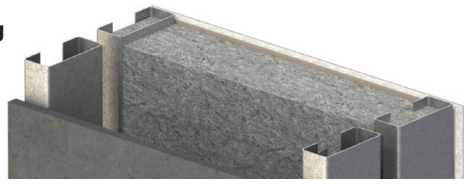
1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally over 5/8" Gold Bond® Fire-Shield® Gypsum Board applied vertically to each side of 3-5/8" steel studs 16" o.c. PermaBASE secured to studs with cement board screws of adequate length to penetrate studs 3/8" spaced 8" o.c.

2-Hour Fire Rating
UL Designs: V452
W472



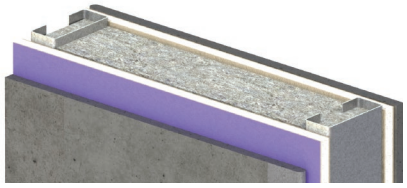
1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically over 1/2" Gold Bond® Fire-Shield C™ Gypsum Board or 5/8" Gold Bond® Fire-Shield® Gypsum Board, applied vertically to one side of 3-5/8" steel studs 16" o.c. Two layers 1/2" Gold Bond® Fire-Shield C™ Gypsum Board or 5/8" Gold Bond® Fire-Shield® Gypsum Board applied vertically to opposite side. 3" mineral wool insulation in stud cavities.

1-Hour Fire Rating
UL Designs: V452
W472



1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally to one side of double row of 3-5/8" steel studs 16" o.c. 5/8" Gold Bond® Fire-Shield® Gypsum Board applied vertically to opposite side. 3" mineral wool insulation in stud cavities.

2-Hour Fire Rating
UL Design: V438



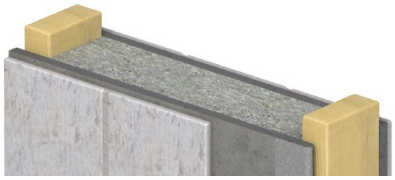
1/2" PermaBASE® PLUS or 1/2" PermaBASE applied horizontally or vertically over 1/2" Gold Bond® Fire-Shield C™ Gypsum Board or 5/8" Gold Bond® Fire-Shield® Gypsum Board, applied vertically to each side of 3-5/8" steel studs 16" o.c. 3" mineral wool insulation in stud cavities.

UL LISTED PERMABASE® CEMENT BOARD PARTITIONS – WOOD FRAMING

1-Hour Fire Rating
UL Design: U392

1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally to one side of 2x4 wood studs 16" o.c. with 1-1/4" cement board screws spaced 8" o.c. ceramic tile installed over PermaBASE. 5/8" Gold Bond® Fire-Shield® Gypsum Board applied vertically or horizontally to opposite side with 6d nails spaced 7" o.c. 3-1/2" mineral wool insulation in stud cavities.

1-Hour Fire Rating
UL Design: U392



1/2" PermaBASE® PLUS or 1/2" PermaBASE applied vertically or horizontally to each side of 2x4 wood studs 16" o.c. with 1-1/4" cement board screws spaced 8" o.c. ceramic tile installed over PermaBASE. 3-1/2" mineral wool insulation in stud cavities.

Notes

Finish Strong with the Right Products

ProForm Finishing Products, LLC delivers industry-leading performance to complete your next interior project. From ready mix and setting joint compounds to joint tape and texture products, the ProForm family of products offers high-quality, consistent formulas that are easy to apply, and the full line is mold resistant.

ProForm offers a wide range of finishing products with packaging options to meet all of your finishing needs and preferences. Benefits found in our specialty products include:

- Reducing airborne dust up to 60%
- Resistant to mold and mildew growth
- Patented lightweight formulas
- Consistent set times

All of these product benefits, combined with best-in-class customer service, help you minimize project costs and maximize jobsite performance.

MOLD RESISTANT
RESISTENTE AL MOHO

UL GREENGUARD
PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

The ProForm family of products is manufactured by ProForm Finishing Products, LLC.

PROFORM®
Finishing Products

Product Overview

ProForm® Ready Mix Joint Compound Products

ProForm® Ultra Lite® All Purpose Joint Compound - See page 266.

ProForm® Ultra Lite® All Purpose Joint Compound is approximately 40% lighter than standard ready mix products and is the lightest formula available. Designed for all phases of finishing, including taping, topping, filling, patching, skimming, and laminating.

Packaging:
Pail: 4.5 gal (17 L)
Carton: 3.5 gal (13.2 L)
4.5 gal (17 L) Midwest only

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Lite Blue™ Joint Compound - See page 266.

Approximately 30% lighter than a standard ready mix, ProForm® Lite Blue™ Joint Compound pulls and sands easier and reduces shrinkage by up to 33%. Designed for use in finishing gypsum board joints, spotting fasteners and finishing corner bead.

Packaging:
Pail: 4.5 gal (17 L)
Carton: 3.5 gal (13.2 L)
4.5 gal (17 L) Midwest only

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Lite Blue™ with Dust-Tech® Joint Compound - See page 267.

A vinyl base ready mix joint compound specifically formulated to reduce airborne dust while sanding and is 30% lighter than standard joint compound. ProForm® Lite Blue™ with Dust-Tech® Joint Compound is excellent for all phases of drywall finishing, patch work and renovations.

Packaging:
Pail: 4.5 gal (17 L)
Carton: 3.5 gal (13.2 L)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Lite Joint Compound - See page 267.

ProForm® Lite Joint Compound is a vinyl base ready mix lightweight joint compound. Approximately 30% lighter than standard ready mix, Lite Joint Compound pulls and sands easier and reduces shrinkage by up to 33%. Designed for use in finishing gypsum board joints, spotting fasteners and finishing corner bead.

Packaging:
Carton: 3.5 gal (13.2 L) Southwest only

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Taping Lite Joint Compound - See page 267.

ProForm® Taping Lite Joint Compound is a lightweight vinyl base ready mix joint compound that may be used directly from the container. It offers the same benefits of a taping compound but is 40% lighter.

Packaging:
Carton: 4.5 gal (17 L)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Multi-Use Joint Compound - See page 268.

ProForm® Multi-Use Joint Compound is a vinyl base ready mix joint compound formulated for professional drywall contractors and finishers. It is ideal for all phases of finishing and spreads easier for quick application.

Packaging:
Pail: 4.5 gal (17 L)
Carton: 3.5 gal (13.2 L)
4.5 gal (17 L)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® All Purpose Joint Compound - See page 268.

ProForm® All Purpose Joint Compound is designed for tape application, fastener spotting, and complete joint finishing of gypsum board. It can also be used to repair cracks in plastered walls, to texture surfaces, and to laminate gypsum board to other surfaces such as masonry or other gypsum board.

Packaging:
Pail: 61.7 lbs (28 kg),
12 lbs/1 gal (5.4 kg)
Carton: 48 lbs (21.8 kg)
50 lbs (22.7 kg)
61.7 lbs (28 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® All Purpose with Dust-Tech® Joint Compound - See page 269.

ProForm® All-Purpose with Dust-Tech® Joint Compound is an all-purpose vinyl base ready mix joint compound specifically formulated to reduce airborne dust while sanding and saves time with quick and easy clean-up. Reduces airborne dust by 60% thereby reducing its impact on indoor air quality.

Packaging:
Pail: 61.7 lbs (28 kg)
Carton: 50 lbs (22.7 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Taping Joint Compound – See page 269.

ProForm® Taping Joint Compound is designed to enhance bond when embedding joint tape or when applying corner beads and accessories. Taping compound is also an excellent product to enhance bond when laminating gypsum board.

Packaging:
Carton: 46 lbs (20.8 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® All Purpose Machine Grade Joint Compound – See page 269.

ProForm® All Purpose Machine Grade Joint Compound applies easily and provides excellent bond. It is designed for tape application, fastener spotting, and complete joint finishing of gypsum board. It can also be used to repair cracks in plastered walls, to texture surfaces, and to laminate gypsum board to other surfaces such as masonry or other gypsum board.

Packaging:
Pail: 61.7 lbs (28 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® All Purpose Heavy Viscosity Joint Compound – See page 270.

ProForm® All Purpose Heavy Viscosity Joint Compound is designed for tape application, fastener spotting, and complete joint finishing of gypsum board. It can also be used to repair cracks in plastered walls, to texture surfaces, and to laminate gypsum board to other surfaces such as masonry or other gypsum board.

Packaging:
Carton: 61.7 lbs (28 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Topping Joint Compound – See page 270.

ProForm® Topping Joint Compound exhibits easy working and spreading characteristics and is suitable for "floating" or finishing taped joints, spotting nail or screw heads, and the finish coats over corner bead. Its sanding characteristics make it preferable as a finishing compound.

Packaging:
Pail: 61.7 lbs (28 kg)
Carton: 50 lbs (22.7 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Concrete Cover Joint Compound – See page 270.

ProForm® Concrete Cover Joint Compound is specifically formulated for smoothing or texturing above-grade monolithic interior concrete ceilings and columns. It may be used for texturing drywall, embedding drywall tape, and as the first coat over drywall beads and trims.

Packaging:
Pail: 61.7 lbs (28 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® All Purpose Texture Grade Joint Compound – See page 271.

ProForm® All Purpose Texture Grade Joint Compound is a ready to use material specially formulated for texturing walls and ceilings. It bonds well with multiple surfaces, including gypsum panels, properly prepared concrete, primed plaster, interior masonry and non-staining wood surfaces.

Packaging:
Carton: 50 lbs (22.7 kg)

Coverage:
Approx. 123-140 lbs/9 gal per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Setting Compound Products

ProForm® Quick Set Lite™ Setting Compound – See page 271.

ProForm® Quick Set Lite™ Setting Compound is a quick setting/hardening type joint compound that is 30% lighter than standard setting compound, can be easily sanded, and requires less time and effort to work. Available in 5, 20, 45, 90 and 210 minute set times.

Packaging:
Bag: 18 lbs (8.2 kg)

Coverage:
Approx. 45-55 lbs per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Quick Set™ Setting Compound – See page 272.

ProForm® Quick Set™ Setting Compound is a quick setting/hardening type compound that is not affected by humidity once it has set and dried. It provides excellent bond and streamlines scheduling – recoat immediately once previous coat sets. Available in 90 and 210 minute set times.

Packaging:
Bag: 25 lbs (11.3 kg)

Coverage:
Approx. 45-55 lbs per 1,000 sq ft

ASTM C475

Fed. Spec. #: SS-J-570B

ProForm® Quick Set™ Fire and Smoke Stop 90 Setting Compound – See page 272.

ProForm® Quick Set™ Fire and Smoke Stop 90 Setting Compound is a setting/hardening type compound designed to provide protection in fire-stopping penetrations through fire-rated partitions or assemblies in both new and retrofit construction. It seals out smoke, toxic gas, and water and provides a seal to stop sound and dust infiltration.

Packaging:
Bag: 25 lbs (11.3 kg)

Coverage:
Approx. 850 cu in

ProForm® Paper Joint Tape Products

ProForm® Paper Joint Tape – See page 273.

ProForm® Paper Joint Tape conceals and reinforces gypsum board joints. The tape is buffed on both sides to ensure the best working qualities and bond. A center creasing process allows easy folding for use at corners.

Packaging:
Rolls: 75' (22.9 m), 20 rolls/carton
250' (76.2 m), 20 rolls/carton
500' (152.4 m), 10 rolls/carton

Coverage:
Approx. 375 ft/1,000 sq ft (114 m/93 sq m) of gypsum board

ProForm® Texture Products

ProForm® Perfect Spray® EM – See page 274.

ProForm® Perfect Spray® EM is a non-aggregated texture used to create a wide range of wall surfaces. It provides an innovative time and money-saving option to ordinary painting.

Packaging:
Bag: 50 lbs (22.7 kg)

Coverage:
500-1,500 sq ft (46-139 sq m) per bag

ProForm® Wall & Ceiling Spray – See page 274.

A non-aggregated texture, ProForm® Wall & Ceiling Spray is used to create a wide range of wall surfaces. It creates a variety of textures, including spray spatter, spatter knockdown, and orange peel.

Packaging:
Bag: 50 lbs (22.7 kg)

Coverage:
500-1,500 sq ft (46-139 sq m) per bag

ASTM C475

Fed. Spec. #: SS-J-570B

Notes

Experience the ProForm Difference

Consistency

You can expect the same product, performance and feel every time.

Diversified Plant Network

While ProForm products are preferred worldwide, they are developed to fit regional preferences. We understand each region and market has different needs. Our team members are committed to delivering best-in-class quality, all driven by feedback and formula development from the professional finishers in markets each plant serves. The team at ProForm Finishing Products doesn't assume what the user wants, we work with you to create products that reduce your jobsite issues.

Enhanced Moisture Protection

ProForm Finishing Products offers the only full line of mold and mildew resistant products for ready mix, setting compounds and textures.

Versatile Product Range for any Project

We offer products specific to your project needs and preferences. Products range from having superior bonding characteristics to excellent sanding performance. From heavyweight products ideal for taping to patented lightweight products for an easy finish. Plus, specialty products to fit specific application needs such as low dust, and products designed to flow through automated tools more easily.

Wide Packaging Selection

From one quart and one gallon pails for home improvement and repair projects, to standard-sized pails, cartons and bags, ProForm Finishing Products offers a wide arrangement of packaging so you have exactly what you need for your project.

UL GREENGUARD Certified

ProForm Finishing Products have achieved UL GREENGUARD Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

Select ProForm products have achieved UL GREENGUARD Gold Certification. These products qualify as low-emitting per California Specification Section 01350 in accordance with CDPH Standard Method, v1.2. For more information, visit: **calrecycle.ca.gov**.

Open, Mix and Apply

So fast and easy, you'll save hours with ProForm Ready Mix Joint Compound. These premixed formulas are mold resistant and have all achieved UL GREENGUARD Certification. They are ready to use right out of the container, wherever your job takes you.

ULTRA LIGHTWEIGHT READY MIX

Weighs up to 40% less than standard weight ready mix, sands easily and is an excellent choice for use in all taping and finishing tools and for all phases of finishing.

LIGHTWEIGHT READY MIX

Weighs up to 30% less than standard weight ready mix, shrinks less, provides a superior finish and sands easily.

MID-WEIGHT READY MIX

Weighs up to 20% less than standard weight ready mix, shrinks less, works well for all phases of finishing and sands easily.

STANDARD WEIGHT READY MIX

Provides excellent bond, works great for texturing and for first phases of finishing.

Choose The Best Products For Your Project

From ready mix and setting joint compounds to joint tape and texture products, ProForm Finishing Products has everything you need to complete your complex projects. The ProForm family of products offers high-quality, consistent formulas that are easy to apply and mold resistant, saving you time and effort. Do you need superior bonding, excellent sanding characteristics, lightweight formulas and quick set times? You can depend on ProForm Finishing Products. Interested in low dust products that are easy to clean up? Our All Purpose and Lite Blue formulas are also available with our Dust-Tech technology.

Product	Embed Tape	Fill or Trim Corner Beads	Finish Joints	Spot Nails and Screws	Texture	Skim Coat	Sanding	In Mechanical Taping Tools
ProForm® All Purpose with Dust-Tech®	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® All Purpose	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® Lite Blue™	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® Lite Blue™ with Dust-Tech®	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® Multi-Use	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® Taping	✓	—	—	—	—	—	—	✓
ProForm® Texture Grade	—	—	—	—	✓	—	—	—
ProForm® Topping	—	✓	✓	✓	✓	✓	✓	✓
ProForm® Ultra Lite®	✓	✓	✓	✓	✓	✓	✓	✓
ProForm® Quick Set Lite™	✓	✓	✓	✓	—	—	✓	—

✓ Best ✓ Better ✓ Good — Not Recommended

ProForm® Ready Mix Joint Compounds

Ultra Lightweight Ready Mix

Our ultra lightweight formula weighs up to 40% less than standard weight ready mix. This product has its own special features and a nine-month shelf life under good storing and application conditions. For product availability, call your local sales representative.

ProForm® Ultra Lite® All Purpose Joint Compound

Applications

Works well for all phases of finishing, from embedding joint tape to final coats.

Advantages

- Weighs up to 40% less than standard ready mix – the lightest formula available.
- Allows more open time.
- Provides excellent bond.
- Pulls and sands easily.
- Excellent for use in all taping and finishing tools.
- Mold resistant.

Packaging

Pail: 4.5 gal (17 L)

Carton: 3.5 gal (13.2 L)
4.5 gal (17 L) Midwest only

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm Ultra Lite Joint Compound has achieved UL GREENGUARD Gold Certification.

Lightweight Ready Mix

Our lightweight formulas weigh up to 30% less than standard weight ready mix. Each formula has its own special features and a nine-month shelf life under good storing and application conditions. For product availability, call your local sales representative.

ProForm® Lite Blue™ Joint Compound

Applications

- Finishes joints and corner bead.
- Spots fasteners.
- Textures.

Advantages

- Reduces shrinkage by up to 33%.
- Lessens pocking and pinholing.
- Pulls and sands easily.
- Provides superior finish.
- Covers metal beads in two coats.

Packaging

Pail: 4.5 gal (17 L)

Carton: 3.5 gal (13.2 L)
4.5 gal (17 L) Midwest only

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® Lite Blue™ with Dust-Tech® Joint Compound

Applications

- Finishes joints and corner bead.
- Spots fasteners.
- Skims and textures.
- Repairs cracks in plaster walls.

Advantages

- Reduces airborne dust by 60% – quick and easy clean-up.
- Reduces shrinkage by up to 33%.
- Mold resistant.
- Provides superior finish.
- Sands without clogging sanding tool.
- Same formula as ProForm Lite Blue.

Packaging

Pail: 4.5 gal (17 L)

Carton: 3.5 gal (13.2 L)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm Lite Blue with Dust-Tech Joint Compound has achieved UL GREENGUARD Gold Certification.

ProForm® Lite Joint Compound

Applications

- Finishes joints and corner bead.
- Spots fasteners.
- Textures.

Advantages

- Reduces shrinkage by up to 33%.
- Lessens pocking and pinholing.
- Pulls and sands easily.
- Provides superior finish.
- Covers metal beads in two coats.
- Mold resistant.

Packaging

Carton: 3.5 gal (13.2 L) Southwest only

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® Taping Lite Joint Compound

Applications

- Taping.
- Adheres corner bead.
- Laminates gypsum board.

Advantages

- Excellent adhesion/bond.
- 40% lighter than standard taping compound.
- Mold and moisture resistant.
- Great for use in taping tools.
- Low VOC content – less than 2 grams/liter.

Packaging

Carton: 4.5 gal (17 L)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

Mid-Weight Ready Mix

A happy medium, ProForm Multi-Use weighs up to 20% less than standard weight ready mix. This formula has its own special features and a nine-month shelf life under good storage and application conditions. For product availability, call your local sales representative.

ProForm® Multi-Use Joint Compound

Applications

Works well for all phases of finishing, from embedding joint tape to final coats.

Advantages

- Weighs up to 20% less than standard ready mix.
- Shrinks less than all purpose formula.
- Provides excellent bond.
- Lessens pocking and pinholing.
- Mold resistant.

Packaging

Pail: 4.5 gal (17 L)

Carton: 3.5 gal (13.2 L)
4.5 gal (17 L)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

Standard Weight Ready Mix

All standard formulas are consistent and easy to apply, with many excellent qualities built in. Each formula has its own special features and a nine-month shelf life under good storage and application conditions. For product availability, call your local sales representative.

ProForm® All Purpose Joint Compound

Applications

- Taping.
- Finishes joints and corner bead.
- Spots fasteners.
- Skims and textures.
- Repairs cracks in plaster walls.

Advantages

- Applies easily and provides excellent bond.
- Stays strong – highly durable surface.
- Lessens pocking and pinholing.
- Works great for first phases of finishing.
- Mold resistant.

Packaging

Pail: 61.7 lbs (28 kg)
12 lbs/1 gal (5.4 kg)

Carton: 48 lbs (21.8 kg)
50 lbs (22.7 kg)
61.7 lbs (28 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® All Purpose with Dust-Tech® Joint Compound

Applications

- Taping.
- Finishes joints and corner bead.
- Spots fasteners.
- Skims and textures.
- Repairs cracks in plaster walls.

Advantages

- Reduces airborne dust by 60% – quick and easy clean-up.
- Mold resistant.
- Applies easily and provides excellent bond.
- Same formula as ProForm All Purpose.
- Lessens pocking and pinholing.
- Great for first phases of finishing.

Packaging

Pail: 61.7 lbs (28 kg)

Carton: 50 lbs (22.7 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm All Purpose with Dust-Tech Joint Compound has achieved UL GREENGUARD Gold Certification.

ProForm® Taping Joint Compound

Applications

- Taping.
- Adheres corner bead.
- Laminates gypsum board.

Advantages

- Enhances bond when embedding tape – first coating corner bead and laminating gypsum board.
- Works well with automatic taping tools.
- Mold resistant.

Packaging

Carton: 46 lbs (20.8 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® All Purpose Machine Grade Joint Compound

Applications

- Taping.
- Finishes joints.
- Spots fasteners.
- Skims and textures.
- Repairs cracks in plaster walls.

Advantages

- Applies easily and provides excellent bond.
- Stays strong – highly durable surface.
- Lessens pocking and pinholing.
- Works great for first phases of finishing as well as for automatic taping and finishing tools.
- Mold resistant.

Packaging

Pail: 61.7 lbs (28 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® All Purpose Heavy Viscosity Joint Compound

Applications

- Taping.
- Finishes joints.
- Spots fasteners.
- Texturing.
- Repairs cracks in plaster walls.

Advantages

- Excellent adhesion/bond.
- Designed for use in mechanical taping and finishing tools.
- Mold resistant.
- Ready to use right from the container.

Packaging

Carton: 61.7 lbs (28 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® Topping Joint Compound

Applications

- Finishes joints and corner bead.
- Spots fasteners.
- Textures.

Advantages

- Spreads easily.
- Lessens pocking and pinholing.
- Sands easily.
- Mold resistant.

Packaging

Pail: 61.7 lbs (28 kg)

Carton: 50 lbs (22.7 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® Concrete Cover Joint Compound

Applications

- Smooths and textures monolithic concrete ceilings or columns.
- Sprays, brushes, rolls and applies by trowel, drywall finishing boxes or taping tools.
- Laminates.
- Provides first-fill coat on fastener beads or trim.

Advantages

- Enhances bond when skimming to interior above-grade monolithic concrete walls, ceilings and columns.
- Stays strong – highly durable surface.
- Creates a variety of textures.
- Dries white.
- Mold resistant.

Packaging

Pail: 61.7 lbs (28 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm Concrete Cover Joint Compound has achieved UL GREENGUARD Gold Certification.

ProForm® All Purpose Texture Grade Joint Compound

Applications

- Works well for any non-aggregated texture.
- Works for a variety of textures, including stipple, knockdown, skip trowel and orange peel.

Advantages

- Allows great pattern versatility.
- Conceals minor cracks and other imperfections.
- Applies easily and provides excellent bond.
- Mold resistant.

Packaging

Carton: 50 lbs (22.7 kg)

Coverage

Approx. 123-140 lbs/9 gal per 1,000 sq ft

ProForm® Setting Compounds

Sets Fast for Same-Day Finishing

Easy to mix and apply, ProForm setting compound sets fast, allowing for same-day finishing and next-day decorating. Once the compound has set, even humidity will not slow down your tight schedule. When minutes count, you can set your clock by our consistent setting and working times. Available nationwide.

ProForm® Quick Set Lite™ Setting Compound

Applications

Works well for heavy fills, beads, trims, joint finishing and laminating gypsum panels.

Advantages

- 30% lighter than Quick Set Compound.
- Streamlines scheduling – recoat immediately once previous coat sets.
- Provides excellent bond.
- Stays strong/highly durable surface.
- Shrinks less and dries white.
- Allows easy mixing and sanding.
- Added protection against mold.
- Available in 5, 20, 45, 90 and 210 minute set times for flexibility.

Packaging

Bag: 18 lbs (8.2 kg)

Coverage

Approx. 45-55 lbs/1,000 sq ft

Mixing

Mix 11-12 pts (5.2-5.7 L) clean, room temperature, drinkable water per bag.

ProForm Quick Set Lite Setting Compound has achieved UL GREENGUARD Gold Certification.

ProForm® Quick Set™ Setting Compound

Applications

Works well for heavy fills, beads, trims, joint finishing and laminating gypsum panels.

Advantages

- Streamlines scheduling – recoat immediately once previous coat sets.
- Provides excellent bond.
- Stays strong/highly durable surface.
- Shrinks less and dries white.
- Allows easy mixing.
- Added protection against mold.
- Available in 90 and 210 minute set times for flexibility.

Packaging

Bag: 25 lbs (11.3 kg)

Coverage

Approx. 45-55 lbs/1,000 sq ft

Mixing

Mix 13-14 pts (6.2-6.6 L) clean, room temperature, drinkable water per bag.

ProForm Quick Set Setting Compound has achieved UL GREENGUARD Gold Certification.

ProForm® Quick Set™ Fire and Smoke Stop 90 Setting Compound

Applications

Meets multiple standards to qualify as UL Listed for:

- Use in fire and smoke stop.
- Use for through-wall and floor penetrations.
- Use for head of wall.

Advantages

- Blocks fire and smoke – dries red for easy identification.
- Saves money – more economical and less waste than caulking tube products.
- Reduces waste – mix only what you need for the job.

Packaging

Bag: 25 lbs (11.3 kg)

Coverage

Approx. 25 lbs/850 cu in

Mixing

Mix 12-13 pts (5.7-6.2 L) clean, room temperature, drinkable water per bag. If less than a full bag will be needed, then plan on a ratio of 2 parts dry powder to 1 part water.

ProForm® Paper Joint Tape

Stick to Quality

Reinforce and conceal your interior wall and ceiling joints with high-quality ProForm® Paper Joint Tape. Available in 3 different sizes to fit your needs. For product availability, contact your local sales representative.

ProForm® Paper Joint Tape

Applications

- Use on gypsum panel joints and interior angles – apply crease side in.
- Use with ready mix joint compounds.
- Embed in ProForm joint compound, removing excess compound.

Advantages

- Creates added strength in joints.
- Provides superior bond – buffed on both sides.
- Folds at corners easily due to center crease.
- Resists distortions, such as stretching, wrinkling and tearing.

Packaging

Rolls: 75' (22.9 m), 20 rolls/carton
250' (76.2 m), 20 rolls/carton
500' (152.4 m), 10 rolls/carton

Coverage

Approx. 375 ft/1,000 sq ft (114 m/93 sq m) of gypsum board

Notes

ProForm® Texture Products

Create Textured Surfaces

Whether you want to cover, conceal, or create interesting design effects, texture products from ProForm offer a complete line of interior ceiling and wall textures. These work on well-primed surfaces, including drywall, concrete, plaster, wood and metal. Saves time and money over conventional painting. Each texture product has its own special features. For product availability, contact your local sales representative.

ProForm® Perfect Spray® EM

Non-Aggregated Texture Spray

Applications

- Use on walls and ceilings.
- Works with standard spray equipment.

Advantages

- Provides an innovative time and money-saving option to ordinary painting.
- Decorative texturing product for fast spray applications to interior surfaces.
- Bright white finish.
- Mold resistant.

Packaging

Bag: 50 lbs (22.7 kg)

Coverage

Approx. 500-1,500 sq ft (46-139 sq m) per bag

Mixing

Mix 4-5 gal (15-19 L) water per bag.

ProForm® Wall & Ceiling Spray

Non-Aggregated Texture Spray

Applications

- Use on walls and ceilings.
- Applies without overspray impacting ceiling.
- Use on wall surface finished with a coat of paint or concrete coated with an alkali-resistant primer/sealer.

Advantages

- Mixes and pumps easily.
- Creates a variety of textures, including spray spatter, spatter knockdown and orange peel.
- Offers textures in several light-reflecting finishes.

Packaging

Bag: 50 lbs (22.7 kg)

Coverage

Approx. 500-1,500 sq ft (46-139 sq m) per bag

Mixing

Mix 4-5 gal (15-19 L) water per bag.

Installation Guide

Ready Mix Compounds

ENVIRONMENTAL CONDITIONS

Varying weather conditions can impact both the quality and appearance of taped drywall joints. Relative humidity, plus temperature, will affect the working characteristics of all joint compounds.

The potential for finishing and decorating problems are minimized when temperature, humidity and airflow remain constant and as close to occupancy environmental conditions as possible. A minimum temperature of 50˚F (10˚C) should be maintained continuously for 48 hours prior to and throughout the finishing process until applied materials are thoroughly dry.

For example, cool wet weather will slow down the drying process while hot, dry weather hastens the drying process. Exposure to winds, breezes or drafts while drying can also affect the performance of joint compounds. Typical problems from improper drying can be cracking, excessive shrinkage, ridging and beading, banding or bond failure. A further explanation of these conditions is outlined in the "Problems and Solutions" section of this guide.

Proper precautions at the jobsite should always be taken to minimize the adverse effects of weather on drying. These precautions will ultimately reduce the application time and expense from call backs and rework.

JOINT COMPOUND DRYING TIMES

Approximate Drying Times for Ready Mix Joint Compound

	Temperature						
Relative Humidity	**32°**	**40°**	**50°**	**60°**	**70°**	**80°**	**100°**
0%	38/H	28/H	19/H	13/H	9/H	6/H	3/H
20%	2/D	34/H	23/H	16/H	11/H	8/H	4/H
40%	2.5/D	44/H	29/H	20/H	14/H	10/H	5/H
50%	3/D	2/D	36/H	24/H	17/H	12/H	6/H
60%	3.5/D	2.5/D	42/H	29/H	20/H	13.5/H	8/H
70%	4.5/D	3.5/D	2.25/D	38/H	26/H	19.5/H	10/H
80%	7/D	4.5/D	3.25/D	2.25/D	38/H	27/H	14/H
90%	13/D	9/D	6/D	4.5/D	3/D	49/H	26/H
98%	53/D	37/D	26/D	18/D	12/D	9/D	5/D

Note: D = Days (24 hour period) H = Hours

The chart above is a helpful guide in determining approximate drying times for joint compounds under a variety of humidity/temperature conditions. Shaded area is below the minimum application temperature requirement of 50°F and is not recommended for the application of joint compound.

Note: To ensure best results, all ProForm Joint Compounds should be used together in construction systems.

All ProForm Joint Compounds are formulated without asbestos and therefore comply with Consumer Product Safety Standards.

STORAGE

Shelf-life up to 9 months under good storage conditions. See production date code on product packaging. To prevent spoilage and freezing, maintain temperature at a minimum 50˚F (10˚C) and protect container from exposure to extreme heat and sunlight.

Frozen Ready Mix

Allow material to thaw at room temperature for at least 24 hours. When thawed, turn the container upside-down for at least 15 minutes. Turn pail right side up, remove lid and immediately remix with an electric drill. Ready Mix should be lump-free and ready to use within 1 minute. Discard all Ready Mix that does not remix to a lump-free consistency.

Stacking

Ready Mix pails or cartons should not be stacked more than two pallets in height.

MOLD AND MILDEW GROWTH PROTECTION

ProForm® All Purpose with Dust-Tech® Joint Compound and ProForm® Lite Blue™ with Dust-Tech® Joint Compound

All ProForm products are mold and mildew resistant but the ProForm Dust-Tech products meet achieve the highest test score. ProForm All Purpose with Dust-Tech and Lite Blue with Dust-Tech were designed to provide extra protection against mold and mildew compared to standard ready mix compound. When tested by an independent lab per ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*, ProForm Ready Mix with Dust-Tech achieved a score of 10, the best possible score for this test.

These products also resist the growth of mold per ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi* with a score of 0, the best possible score.

When tested in a system with ProForm® Paper Joint Tape, Gold Bond® XP® Gypsum Board or Gold Bond® eXP® Interior Extreme® Gypsum Panels, this system achieves a score of "10" for ASTM D3273 and a score of "0" for ASTM G21. These are the best possible mold-resistant scores for these tests.

MOLD AND MILDEW RESISTANCE

Planning and Prevention

Planning and prevention is the most effective way to avert the growth of mold or mildew. Gypsum wallboard and finishing products should be delivered to projects as near to the time it will be used as possible. Wallboard delivered to a jobsite must be placed under cover immediately, properly protected and not exposed to outside elements such as rain, snow or other high moisture conditions.

If building materials get wet from any moisture source, that source must first be identified and corrected. If mold or mildew growth occurs, or if you suspect it might occur due to environmental conditions and moisture, a determination must be made to either attempt to dry and clean the affected areas or to replace the affected materials. Care must be taken in this evaluation, and if you do not have the training or experience to recognize and to make proper decisions about repair or removal, you should consult a professional.

No material can be considered "mold proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, Ready Mix with Dust-Tech can provide increased mold resistance versus standard ready-mixed compounds. As with any building material, avoiding water exposure during handling, storage and installation and after installation is complete is the best way to avoid the formation of mold or mildew.

Setting Compounds

MIXING

Mix no more compound than can be applied in the designated set time. Place the amount of water recommended, (see mixing ratio) on compound packaging in a clean mixing container. Add the compound gradually to clean, drinkable water while stirring. Mix the compound free of lumps with a mechanical mixer or by hand. Allow standing (soak) for 1 minute, and then remix until consistency is smooth and creamy. If a thinner or thicker mix is desired, add water or powder sparingly. Careful not to overmix as it could lead to shortened working times. DO NOT mix with any other joint compounds (wet or dry) and not recommended for use in automatic tools. Prior to application, surface areas should be clean and free of dust and debris.

ESTIMATED WORKING AND SETTING TIMES

One of the most crucial things for selecting the proper ProForm Quick Set Setting Compound is matching its working time and setting time ranges to the project.

It should be noted that working time and setting time are not the same.

Working Time

Working time refers to the period during which the ProForm Quick Set is usable for application. At the end of this time, the material begins to stiffen and can no longer be spread easily. Working time should correspond to the required time for actual application.

Setting Time

Setting time refers to the time after which the applied ProForm Quick Set will become adequately hardened so that another layer can be applied. For manufactured or modular builders, the setting time should match your timetable for moving a floor along the line.

Approximate Working Times Versus Set/Hardening Times

Quick Set/ Quick Set Lite	Working Time (Minutes)	Set/Hardening Time (Minutes)
5	3–5	10–20
20	15–20	20–40
45	35–45	45–70
90	70–90	90–125
210	180–210	210–280

LIMITATIONS

- Do not apply over moist surfaces or surfaces subject to direct moisture.
- Do not mix with any other material. Use only clean, room temperature, drinkable water.
- Mixing equipment and tools must be thoroughly cleaned between batches.
- Each fresh batch of compound must be kept free of previous batches; otherwise the working time will be shortened.
- High-speed mixing or excessive mixing will shorten the working time of the ProForm Quick Set setting compounds.
- Do not add water or remix after compound begins to thicken and harden.
- Not recommended for use in automatic taping tools.
- Close opened bag as tight as possible for storage or setting time may be affected.
- Shelf life up to 6 months in high humidity areas and 12 months under good storage conditions. See production date code. To prevent spoilage and freezing, maintain temperature at a minimum 50˚F (10˚C) and protect container from exposure to extreme heat, sunlight and water.
- The potential for finishing and decorating problems are minimized when temperature, humidity and airflow remain constant and as close to occupancy environmental conditions as possible. A minimum temperature of 50˚F (10˚C) should be maintained continuously for 48 hours prior to and throughout the finishing process until applied materials are thoroughly dry.

FREQUENTLY ASKED QUESTIONS

1. Why is the product lumpy after mixing?

- Water was added to the ProForm Quick Set, rather than the compound being added to the water.
- ProForm Quick Set was not allowed to soak (for approximately 1 minute) after initial mix before remixing was initiated.

2. Why is the product setting much faster than the advertised range?

- Dirty mixing water and/or application tools.
- Excessive mixing of the compound.
- Foreign material (accidentally or deliberately) added to the mixture.
- Mixing water too hot.

3. Why is the product setting much slower than the advertised range?

- Too much water was used.
- Impure water source (dissolved organics in the water generally retard the set time).
- Foreign material (accidentally or deliberately) added to the mixture.
- Water too cold.
- Product was remixed after initial stiffening began.

4. Why does the product display weak strength?

- Too much water was used.
- Foreign material (accidentally or deliberately) added to the mixture.

JOINT AND CORNER FINISHING APPLICATION

1. ProForm Quick Set setting compounds should be mixed in accordance with the printed instructions on the package.
2. A uniformly thin layer of joint compound should be applied over the joint approximately 4" wide. Tape should be centered over the joint and embedded into the compound leaving sufficient joint compound under the tape for proper bond. Ceiling and wall angles plus all inside corner angles should be reinforced with tape folded to conform to angles and embedded into the compound.
3. After compound is thoroughly dry or hard (approximately 24 hours for Regular compound or 2 hours for Quick Set), joint tape should be covered with a coat of joint or topping compound. The compound should be spread over the tape approximately 3" on each side and feathered out at edges. After thoroughly dry, another coat of joint or topping compound should be applied with a slight uniform crown over the joint. This coat should be smoothed and feathered approximately 3" beyond the preceding coat.
4. All inside corners should be coated with at least one coat of joint or topping compound and the edges feathered out.
5. All nail or screw head dimples should receive three coats. This may be applied along with each joint coat.
6. Flanges of wallboard corner bead should be concealed by at least two coats of compound. The second coat should be feathered out approximately 9" on both sides of the exposed metal nose.
7. For joint and corner treatment with Quick Set, fill joint and bed tape simultaneously. After Quick Set has hardened, apply any ProForm joint compound.
8. For wet sanding, allow each application of compound to dry or harden. If dry sanding is performed, ventilate work area and/or use a NIOSH/MSHA-approved respirator. Safety glasses are also recommended. Caution should be used to avoid roughing the wallboard paper. All wallboard and treated areas should be smooth and ready for decoration.

Spray Textures

RECOMMENDED APPLICATION PRACTICES

Gypsum Wallboard

Surfaces, including joint-treated areas, must be smooth, clean and dry. First apply a coat of sealing primer. Allow primer to dry thoroughly, and maintain adequate drying conditions after application. Primer is to minimize sagging of gypsum wallboard and discoloration or difference in sheen on ceiling surface. Add dry texture to water. Use a piston pump or Mono-type pump with a texture gun. Minimum 3/4" I.D. material hose. A hopper-type gun with adequate air supply is also suitable. Typical coverage is 8-10 sq. ft. per lb. for aggregated and 10-30 sq. ft. per lb. for nonaggregated textures. Mask appropriate areas before spraying and promptly remove overspray from unprotected surfaces afterward. Follow the instructions of the spray equipment manufacturer for adjusting controls and cleaning. If a second coat is desired, allow the first coat to dry thoroughly.

Note: For ceilings to receive water-based texture, apply minimum 1/2" gypsum board perpendicular to framing members spaced 16" o.c. Apply minimum 1/2" sag-resistant or 5/8" gypsum board to framing members spaced 16" o.c.

Concrete

Allow concrete to cure for at least 28 days. Clip protruding wire ends and spot with rust-inhibitive primer. Remove all form oil, grease and dirt, or any loose or water-soluble material. Grind down any form ridges, and level any remaining unevenness with ProForm® Quick Set. Apply a coat of alkali-resistant sealing primer over the entire surface to be textured.

Materials Estimating and Coverage

INSTALLATION MATERIALS

Sq Ft of Wall/ Ceiling	Gypsum Board Size			All Purpose	Lite Blue	Joint Tape	Quick Set	Nails/ct	Screws/ct
	4'x8'	4'x10'	4'x12'						
100	4	3	3	12-14 lbs	1.0 gal	35 ft	6 lbs	168	90
200	7	5	5	25-28 lbs	1.8 gal	70 ft	11 lbs	294	150
300	10	8	7	37-42 lbs	2.7 gal	105 ft	17 lbs	420	240
400	13	10	9	49-56 lbs	3.6 gal	140 ft	22 lbs	546	300
500	16	13	11	62-70 lbs	4.5 gal	175 ft	28 lbs	672	390
600	19	15	13	73-84 lbs	5.4 gal	210 ft	33 lbs	798	456
700	22	18	15	86-98 lbs	6.3 gal	245 ft	39 lbs	924	528
800	25	20	17	98-112 lbs	7.2 gal	280 ft	44 lbs	1050	600
900	29	23	19	110-126 lbs	8.1 gal	315 ft	50 lbs	1218	696
1000	32	25	21	123-140 lbs	9.0 gal	350 ft	55 lbs	1344	768
1100	35	28	23	135-154 lbs	9.9 gal	385 ft	61 lbs	1470	840
1200	38	30	25	148-168 lbs	10.8 gal	420 ft	66 lbs	1596	912
1300	41	33	28	160-182 lbs	11.7 gal	455 ft	72 lbs	1722	984
1400	44	35	30	172-196 lbs	12.6 gal	490 ft	77 lbs	1848	1056
1500	47	38	32	184-210 lbs	13.5 gal	525 ft	83 lbs	1974	1128

FINISHING MATERIALS

	All Purpose	Lite Blue	Quick Set	Perfect Spray	Wall and Ceiling Spray	Joint Tape
Quantity per 1,000 sq ft of Gypsum Board	123-140 lbs	9.0 gal	55 lbs	120 lbs	50-100 lbs	350 ft

Five Levels of Finish for Gypsum Board

LEVEL 0

- Typically specified in temporary construction or whenever the final decoration has not been determined.
- No taping, finishing, or accessories required.

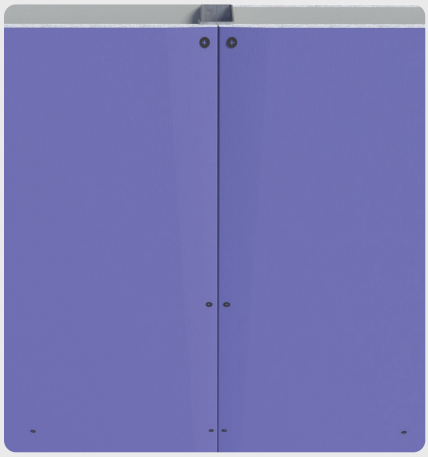
LEVEL 1

- Typically specified joint treatment in smoke barrier applications and areas not normally open to public view such as plenum areas above ceilings, attics, and other areas where the assembly would generally be concealed.
- All joints and interior angles shall have tape embedded in joint compound. Excess joint compound and tool marks are acceptable; fastener heads need not be covered.
- Accessories are optional unless specified in the project documents.

LEVEL 2

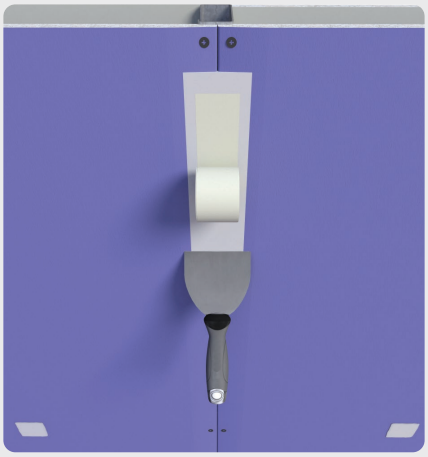
- Typically specified where gypsum panel products are used as a substrate for tile; may be used in garages, warehouse storage or other similar areas where surface appearance is not a concern.
- All joints and interior angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. If joint compound is applied over the body of the tape and smoothed at the time of embedment in Level 1, it shall satisfy the conditions of this level.
- Fastener heads and accessories shall be covered with one (1) coat of joint compound. Surface shall be free of excess joint compound. Tool marks are acceptable.

Level 0



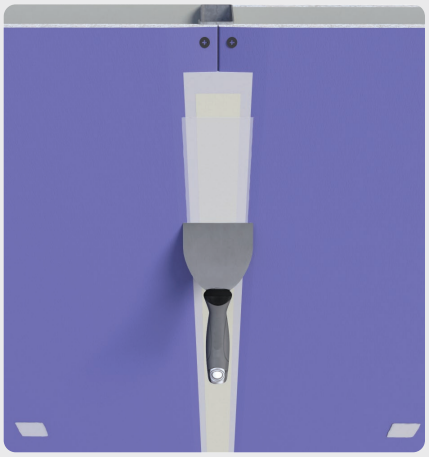
No taping, finishing or accessories required.

Level 1



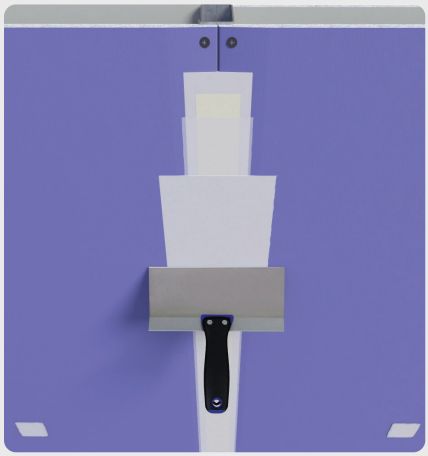
All joints and interior angles have tape set in compound.

Level 2



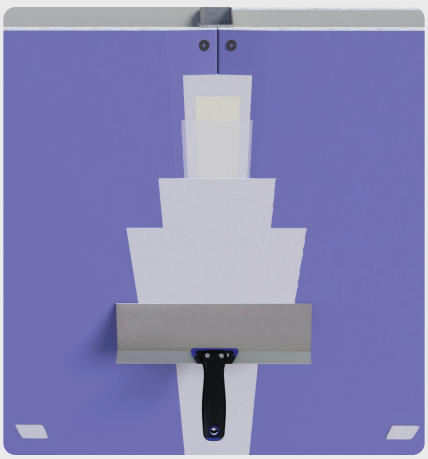
Thin coating of compound over all joints and interior angles.

Level 3



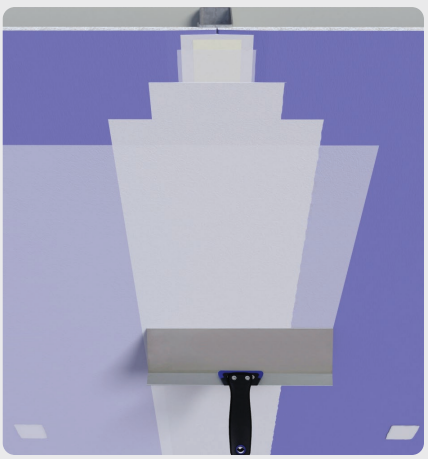
Additional coating of compound over joints and interior angles. Smooth and free of tool marks.

Level 4



Another coating of compound over flat joints, smooth and free of tool marks.

Level 5



Skim coat applied over entire surface. Surface smooth and free of tool marks.

LEVEL 3

- Typically specified in appearance areas which are to receive heavy- or medium-texture finishes (spray or hand applied) before final painting, or where heavy-duty/commercial grade wallcoverings are to be applied as the final decoration. The design professional shall specify the mock-up procedure and mock-up construction details within the project documents. This level of finish is not recommended for smooth wall designs or applications where light textures, non-continuous textures, or lightweight wallcoverings are applied.
- All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. One (1) separate coat of joint compound shall be applied over all joints and interior angles. Fastener heads and accessories shall be covered with two (2) separate coats of joint compound. The surface shall be smooth and free of tool marks.

Note: It is recommended that the final decoration specification (e.g., painting specification) include the application of a priming material prior to the decoration.

LEVEL 4

- Typically specified in appearance areas where smooth wall designs are decorated with flat paints, light textures, non-continuous textures, or wallcoverings are to be applied. The design professional shall clearly indicate the areas that meet these criteria on the finish schedule and/or plans, and specify the mock-up procedure and mock-up construction details within the project documents. Non-flat or dark/deep tone paints are not recommended: refer to Level 5.
- In critical lighting areas, flat paints applied over light continuous textures tend to reduce joint photographing.
- The weight, texture, and sheen level of wallcoverings applied over this level of finish should be carefully evaluated. Joints and fasteners must be adequately concealed if the wallcovering used is of lightweight construction, contains limited pattern, has a sheen level other than flat, or any combination thereof. Unbacked vinyl wallcoverings are not recommended over this level of finish.
- All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Two (2) separate coats of joint compound shall be applied over all flat joints and one (1) separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three (3) separate coats of joint compound. The surface shall be smooth and free of tool marks.
- Where glass mat and/or fiber reinforced gypsum panels are installed, refer to the gypsum panel manufacturer for specific finishing recommendations.

Note: It is recommended that the final decoration specification (e.g., painting specification) include the application of a priming material prior to the decoration.

LEVEL 5

- Typically specified in appearance areas where smooth wall designs are decorated with non-flat paints (i.e., sheen/gloss) or other glossy decorative finishes, dark/deep tone paints are applied, or critical lighting conditions occur. The design professional shall clearly indicate the areas that meet these criteria on the finish schedule and/or plans, and specify the mock-up procedure and mock-up construction details within the project documents. This level of finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and/or fasteners showing through the final decoration.
- All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin consistent coating of joint compound over all joints and interior angles. Two (2) separate coats of joint compound shall be applied over all flat joints and one (1) separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three (3) separate coats of joint compound. A thin skim coat of joint compound or a material manufactured especially for this purpose shall be applied to the entire surface. The surface shall be smooth and free of tool marks.
- Where glass mat and/or fiber reinforced gypsum panels are installed, refer to the gypsum panel manufacturer for specific finishing recommendations.

Note: It is recommended that the final decoration specification (e.g., painting specification) include the application of a priming material prior to the decoration.

For more information, refer to the Gypsum Association document GA-214.

Problems and Solutions

JOINT PROBLEMS

Conditions	Probable Cause	Preventive Action	Corrective Action
Tape Photographing	Slow drying of finishing coats. Too much compound under tape. Joint compound too thin.	Correct drying conditions. Embed tape properly. Use joint compound thicker. Use ProForm Paper Joint Tape.	Sand down the tape outline and seal. Refloat if necessary before decoration. Prevent finish coat moisture from re-wetting the tape by applying a thinner coat for fast drying.
Starved Joint	Compound applied too thin in viscosity and thickness. Too little compound over joint. Excessive sanding.	Use finishing compound at heavier viscosity and proper thickness of coats. Do not over-sand.	Allow to thoroughly dry, then apply an additional coat of topping or joint compound.
High Joint	Excess joint compound under the tape. Excess joint compound over the tape and improper feathering. Poor framing. Improper gypsum board application. Improper sanding. Use of compound too heavy.	Proper thickness of compounds for taping and finishing. Feather finishing coats wider than previous coats. Correct poor framing and improper wallboard application to ensure proper alignment. Sand properly.	Sand joint to near flush without sanding into tape. Apply a wider finishing coat properly feathered, if necessary. Apply a second finishing coat or skim coat.
Beading/Ridging	Lumber expansion and contraction. Improper heating and ventilation. Cold weather with high humidity. Improper application of gypsum board. Excess compound over joints and needless wide joints. Rough or poorly cut butt joint.	Use Quick Set™ or Quick Set Lite™ setting compounds to minimize beading or ridging. Alternatives include: double-layer lamination system.	Allow one full heating cycle — 6 months to 1 year — before repairing, then sand ridge flush and apply one or more finishing coats of joint or topping compound. Use critical lighting to determine if bead is eliminated prior to decoration.

NAIL PROBLEMS

Conditions	Probable Cause	Preventive Action	Corrective Action
Nail Pops	Framing out of alignment. Lumber shrinkage. Improper gypsum board application. Improper heating and ventilation.	Provide heat and ventilation to dry framing lumber. Align framing lumber. Nail center of wallboard first. Hold gypsum board firm to nailing member when nailing. Use proper nails. Check all nails before nail spotting. Systems recommended to reduce or eliminate nail pops include: double-layer lamination, double nailing system, floating angle system, adhesive nail-on system and screw application.	When nail pops occur before decoration, repair immediately. If problem occurs after decoration, repair after framing lumber is dry (usually one heating cycle). To repair, drive a GWB-54 nail 1-1/2" from each side of popped nail while holding gypsum board firm to the nailing member. Countersink popped nail, remove loose joint compound, then apply finishing coats of joint or topping compound.
Depressed Nails	Framing out of alignment. Lumber expansion due to moisture absorption. Improper gypsum board application. Too few nails, improper furring, structural movement. Nails dimpled too deeply.	Align framing lumber. Allow dry lumber to become acclimated. Correct gypsum board application as described for nail pops. Use proper nail spacing. When furring, use no less than 2" x 2". Use systems recommended to reduce or eliminate nail pops. Avoid fracturing paper when driving nails.	Repair as described for nail pops, unless most nails are depressed and wallboard is loose (usually ceilings). Re-nail entire surface using proper spacing. Dimple depressed nails and apply finishing coats of joint or topping compound.

TEXTURING PROBLEMS

Conditions	Probable Cause	Preventive Action	Corrective Action
Lumping	Too much water added to initial mix. Adding water to powder.	Add powder to water using less water than initially specified. After mix is smooth and lump-free, add remaining water to adjust mix to a workable viscosity.	Add powder until mix thickens. Continue mixing until lumps disappear.
Mix Too Thin	Too much water added in initial mix or inadequate soaking time in cold water.	Use recommended water requirements in initial mix. Allow mixed ingredients to soak for several minutes, when necessary, if using cold water.	Add powder until mix thickens.
Aggregate Fallout (During Spraying)	Spray gun too close to surface and/or excessive air pressure at nozzle.	Hold spray gun at proper distance and angle from surface to prevent aggregate fallout.	Lower air pressure. Hold spray gun at proper distance and angle from surface to prevent excessive fallout.
Aggregate Floatout	Too much water added during initial mix and/or inadequate mixing after initial water is added.	Use recommended water requirements and make sure water is properly blended into mix.	Add powder until mix thickens.
Poor Coverage	Mix too thick for proper spray viscosity and/or improper application such as spraying too slow, overloading surface with spray material and using incorrect spray pressures.	Use recommended water volume for mixing to ensure sprayable viscosity. Use proper spray application to ensure uniform dispersion of aggregate and proper coverage.	Carefully add water to mix. Use proper spray techniques. Adjust spray pressure.
Poor Hide	Over-thinned mix causing a reduction in both wet and dry hide. Mix too thick causing poor atomization resulting in surface show-through. Improper application/over-extending spray. Selecting improper spray pressures. No primer used prior to texturing.	Use recommended water volume for mixing to ensure sprayable viscosity. Use proper spray application to ensure uniform dispersion of aggregate and proper coverage. Use a good quality drywall primer.	Add powder or water depending on mix consistency. Adjust spray pressure. Use proper spray technique. Apply finished paint over textured surface.
Poor Bond or Hardness	Over-thinned mix results in over-dilution of latex binder in spray texture. Improper surface preparation. Contamination with other materials.	Use recommended water volume for mixing. Remove all loose material, dust, grease, oil and prime surface with a quality drywall primer. Do not intermix with other products. Always use a clean mixing container and clean water.	Scrape down surface and repeat application following recommendations under "Preventive Action."
Clogged Spray Equipment	Contamination of mix with oversized particles can sometimes clog spray nozzle orifice.	Prevent contamination during mixing and spraying. Use correct nozzle size for aggregate being sprayed.	Check mix for contamination and/or oversized particles. If contaminated, screen out contaminants or discard and remix new batch.
Material Pumping Problems	Mixed spray material too heavy. Pump equipment old and worn. Equipment improper size for spray product.	Use recommended water volume for mixing. Make sure proper equipment is being used and that spray machine is in good repair.	Thin mix if too heavy for pumping.
Unsatisfactory Spray Pattern	Worn spray equipment (either fluid or spray nozzle) and/or improper air pressure. Improper spray technique and/or poor spray mix consistency.	Inspect spray nozzles to ensure good working condition. Replace any worn parts.	Improve spraying technique. Add recommended water volume to ensure proper spraying consistency.

TEXTURING PROBLEMS – CONTINUED

Conditions	Probable Cause	Preventive Action	Corrective Action
Texture Buildup	Spraying or texturing over surfaces with major differences in surface porosity or suction (improperly primed). Thin texture will tend to build up over high suction surfaces.	Prime entire surface with a good quality drywall primer. Follow mixing instructions.	Remove all texture from sprayed surface and re-apply following instructions under Preventative Action.
Joint Show-Through	Over-extended and over-thinned primer won't adequately hide the contrast between finished joints and gypsum board paper.	Use recommended water volume when mixing texture and apply at recommended coverage rates. Prime surface with a good quality drywall primer prior to application of spray texture.	Allow spray to thoroughly dry, then prime with a quality drywall primer and re-spray or paint textured surface.
Joint Shows Through as White Band	Spraying over unprimed surfaces during cool, humid, slow drying conditions. Joint stays white, water solubles in gypsum board paper bleed through.	Prime surface with a good quality drywall primer before applying texture.	Allow spray to thoroughly dry, then paint textured surface.

SHRINKAGE PROBLEMS

Conditions	Probable Cause	Preventive Action	Corrective Action
Shrinkage	Compound used too thin or watery. Applied too soon after mixing. Improper drying between coats. Painting before joints are thoroughly dry. Too deep fills in one coat. Slow drying.	Use compound at heaviest workable consistency. Allow to stand before using. Allow thorough drying of compound between coats and prior to painting. Apply additional coats on deep fills. Provide proper drying.	Allow to thoroughly dry and re-coat. Provide proper drying.
Delayed Shrinkage	Improper drying conditions. Painting before compound and wallboard are thoroughly dry. Under high humidity, slow drying conditions, joints and wallboard may hold moisture for weeks.	Provide proper drying conditions. Allow complete drying before each coat of joint treatment and before repainting.	Allow to thoroughly dry and re-coat affected joints.
Misinterpreted Shrinkage	Improper wallboard application including: nails dimpled too deep, fractured core of wallboard, fractured face paper, corner bead applied improperly, tape photographing.	Less dimple of nails. Press wallboard snug to nailing member before dimpling nail. Re-nail where necessary. Use ProForm Quick Set compound for at least the first coat on nails and corner bead. (See Tape Photographing.)	Nails: re-nail where necessary. Cut out any loose areas and fill with two or more coats of Quick Set or regular joint compound. Re-coat corner bead.

MISCELLANEOUS PROBLEMS

Conditions	Probable Cause	Preventive Action	Corrective Action
Pock Marking	Entrapment of air in the mixed compound and in application. Over-mixing of compound. Compound mixed too thin. Heavy fills. Improper application technique. Compound applied too loosely.	Mix compound as quickly as possible and let stand until binder is in solution before remixing. Mechanical mixers should have 500 RPM maximum. Use heavier mix. Make additional passes over joints and bead with hand or mechanical tools. File trowel edges square regularly to avoid entrapment in application. Apply compound thinly and use more pressure on finish coat.	Remove sanding dust that may collect in "pocks" prior to painting and refloat joint as necessary. When condition exists after painting, float with compound and repaint.

One Name Covers It All

Need roof board options and technical expertise? The DEXcell® Roof Board product line covers the entire spectrum of commercial roofing applications. Plus, we'll help you make the best product choices by providing unmatched technical expertise. Whether your building shelters expensive equipment or valued people, DEXcell Roof Boards will cover more than your roof.

DEXcell® Glass Mat Roof Board is recommended for mechanically attached systems, metal roof systems and wood shake underlayment. It's also an excellent thermal and fire barrier.

DEXcell FA™ Glass Mat Roof Board features a heavy-duty coated fiberglass facer and is ideal for fully adhered roof systems — from a vapor barrier substrate to the parapet wall.

DEXcell FA VSH™ Glass Mat Roof Board has a reinforced gypsum panel with enhanced moisture resistant core and a heavy-duty coated fiberglass facer. It is extremely durable and approved for use in single-ply and multi-ply assemblies meeting FM Very Severe Hail (VSH) Classification.

DEXcell® Cement Roof Board provides unprecedented versatility. This board's superior moisture resistance makes it suitable for nearly every roof system.

INDUSTRY ASSOCIATIONS

NATIONAL ROOFING CONTRACTORS ASSOCIATION MEMBER

SPRI SINGLE PLY ROOFING INDUSTRY

DEXcell® gypsum roof board products are manufactured by Gold Bond Building Products, LLC.
DEXcell® cement roof board products are manufactured by PermaBASE Building Products, LLC.


DEXcell®
Roof Board

Product Overview

DEXcell® Glass Mat Roof Board – See page 288.

DEXcell® Glass Mat Roof Board has coated fiberglass facers and an enhanced mold-resistant gypsum core. This moisture- and mold-resistant gypsum panel is a substrate board, thermal barrier and/or coverboard for commercial roofing applications. Use it for a wide variety of roofing systems, including mechanically attached and ballasted single-ply membranes, thermal barriers and metal roofing.

Thickness: 1/4" (6.4 mm) / Regular
1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X

Width: 4' (1,219 mm)

Length: 8' (2,438 mm)

Square Edge

ASTM C1177

DEXcell FA™ Glass Mat Roof Board – See page 292.

DEXcell FA™ Glass Mat Roof Board has heavy-duty coated fiberglass facers and an enhanced mold-resistant gypsum core. This moisture- and mold-resistant gypsum panel is a substrate board, thermal barrier and/or coverboard for commercial roofing applications. Use it for a wide variety of roofing systems, including fully adhered, mechanically attached and ballasted roofs using single-ply membranes, modified bitumen, fluid-applied, built-up roofing, spray foam and metal.

Thickness: 1/4" (6.4 mm) / Regular
1/2" (12.7 mm) / Regular
5/8" (15.9 mm) / Type X

Width: 4' (1,219 mm)

Length: 4' (1,219 mm), 8' (2,438 mm)

Square Edge

ASTM C1177

DEXcell FA VSH™ Glass Mat Roof Board – See page 296.

DEXcell FA VSH™ Glass Mat Roof Board has a reinforced gypsum panel with enhanced moisture resistant gypsum core and heavy-duty coated glass mat facers. It is extremely durable and is approved for use in single-ply and multi-ply assemblies meeting FM Very Severe Hail (VSH) Classification. Use it in a wide variety of roofing systems, including fully adhered, modified bitumen, fluid applied, spray foam and metal roofs.

Thickness: 5/8" (15.9 mm) / Type X

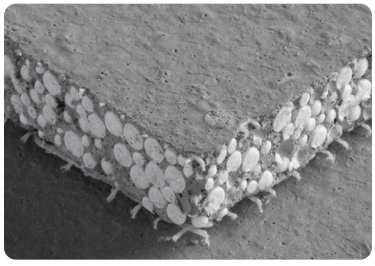
Width: 4' (1,219 mm)

Length: 4' (1,219 mm), 8' (2,438 mm)

Square Edge

ASTM C1177

DEXcell® Cement Roof Board – See page 300.



DEXcell® Cement Roof Board is a lightweight, moisture- and mold-resistant panel that provides an exceptionally hard, durable surface that withstands prolonged exposure to moisture. Its composition of Portland cement and lightweight aggregate with heavy-duty fiberglass-mesh facers makes it an excellent fire and thermal barrier. This moisture- and mold-resistant cement panel is a substrate board, thermal barrier and coverboard for commercial roofing applications.

Thickness: 7/16" (11.1 mm)
5/8" (15.9 mm)

Width: 4' (1,219 mm)

Length: 4' (1,219 mm), 8' (2,438 mm)

Square Edge

ASTM C1325

Choose the Best DEXcell® Product for Your Project

Application	DEXcell® Glass Mat Roof Board	DEXcell FA™ Glass Mat Roof Board	DEXcell FA VSH™ Glass Mat Roof Board	DEXcell® Cement Roof Board
Single-Ply – Fully Adhered	—	✓	✓	✓
Single-Ply – Mechanically Attached	✓	✓	✓	✓
Single-Ply – Self Adhered	—	✓	✓	✓
Modified Bitumen – Hot Mop	—	✓	✓	✓
Modified Bitumen – Cold Adhesive	—	✓	✓	✓
Modified Bitumen – Torch	—	✓	✓	✓
Modified Bitumen – Self Adhered	—	✓	✓	✓
Built-Up Roof (BUR) – Hot Mop	—	—	—	✓
Built-Up Roof (BUR) – Cold	—	✓	✓	✓
Spray Polyurethane Foam	—	✓	✓	✓
Fluid Applied	—	✓	✓	✓
Thermal Barrier	✓	✓	✓	✓
Fire Barrier	✓	✓	✓	✓
Substrate for Vapor Barrier	✓	✓	✓	✓
Substrate for Parapet Wall	—	✓	✓	✓
Very Severe Hail - Modified Bitumen	—	✓	✓	—
Very Severe Hail - Single-Ply	—	—	✓	—
Vegetative "Green" Roof System	—	✓	✓	✓
Photovoltaic Roof System	—	✓	✓	✓
Standing-Seam Metal Roof System	✓	✓	✓	✓
Wood Shake Underlayment	✓	✓	✓	✓

✓ Recommended ✓ Acceptable — Not Recommended*

*Indicates product applications that may be used successfully, but may not be optimal in terms of cost or performance as compared to the recommended product.

Note: In situations where prolonged excessive membrane surface temperatures may be experienced, such as dark-colored membranes in Southern climates, roof surfaces that experience reflected sunlight or photovoltaic installations, DEXcell® Cement Roof Board is the preferred DEXcell® product.

Fire barrier meets FM Class 1 and UL Class A Fire ratings for roofing systems up to unlimited slope per UL 790.

BEST CHOICE FOR ALL APPLICATIONS

	Coverboard Attachment				Membrane Attachment						
Product	**Loose Lay**	**Hot Asphalt**	**Adhesive**	**Mech. Fastener**	**Solvent Based**	**Water Based**	**Torch**	**Hot Asphalt**	**Cold Adhesive**	**Low-Rise Foam**	**Mech. Fastener**
DEXcell® Glass Mat	✓[1]	—	—	✓[2]	—	—	—	—	—	—	✓
DEXcell FA™ Glass Mat	✓[1]	✓	✓	✓	✓	✓	✓	Fleece[3]	✓	✓	✓
DEXcell FA VSH™ Glass Mat	✓[1]	✓	✓	✓	✓	✓	✓	Fleece[3]	✓	✓	✓
DEXcell® Cement Board	✓[1]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Yes — No

1. Loose lay when layers above are attached to the deck. Common in thermal barrier applications.
2. With MA roof covers. 4 to 5 fasteners per 4x8 are commonly used.
3. Application of fleece back membrane in hot asphalt is permitted.

DEXcell® Glass Mat Roof Board

A Board You'll Get Attached To

1. Coated Glass Mat
2. Enhanced Moisture- and Mold-Resistant Gypsum Core
3. Coated Glass Mat

DEXcell® Glass Mat Roof Board has coated fiberglass facers and an enhanced mold-resistant gypsum core. This moisture- and mold-resistant gypsum panel is a substrate board, thermal barrier and/or coverboard for commercial roofing applications. It scores and cuts easily, and is specially coated on the front, back and sides for easy handling.

Use it for a wide variety of roofing systems, including mechanically attached and ballasted single-ply membranes, thermal barriers and metal roofing.

BASIC USES

Applications

- Use DEXcell Glass Mat Roof Board as a substrate board and for thermal protection in roofing assemblies. It provides increased fire safety and acoustical enhancement. It also serves as a substrate for a vapor retarder and/or continuous substrate for the application of roofing membranes. This board provides increased moisture, mold and impact resistance.
- Use it as a coverboard in roofing assemblies. DEXcell Glass Mat Roof Board protects and supports the roof membrane; provides increased fire, moisture and mold resistance and reduces the potential for penetration damage to the membrane.

Advantages

- Scores and snaps easily.
- Fiberglass mat on face and back has special coating for easy handling.
- Meets ASTM C1177.
- Meets FM Class 1 and UL Class A fire ratings for roofing systems up to unlimited slope per UL 790/ULC S107.
- Approved component in specific UL fire-rated designs.
- Use it as part of a class A, B or C roof covering that has been tested in accordance with UL 1256, ULC CAN-S126 or FM 4450. No additional thermal barrier is required as per IBC 2603.4.1.5.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- High-density coverboard/thermal barrier.
- 5/8" (15.9 mm) DEXcell Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to *UL Certifications Directory*: **ul.com**. Meets Type X per ASTM C1177.
- Product achieves UL GREENGUARD Certification for low chemical emissions. For more information, visit: **ul.com/gg**.

SIZES

Thickness	Width x Length
1/4" (6.4 mm)	**4' x 8'** (1,219 mm x 2,438 mm)
1/2" (12.7 mm)	**4' x 8'** (1,219 mm x 2,438 mm)
5/8" (15.9 mm)	**4' x 8'** (1,219 mm x 2,438 mm)

DEXcell® Glass Mat Roof Board

TECHNICAL DATA

Physical Properties	1/4" DEXcell Glass Mat	1/2" DEXcell Glass Mat	5/8" DEXcell Glass Mat
Thickness[1], Nominal	1/4" (6.4 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
Length[1], Standard	8' (2,438 mm)	8' (2,438 mm)	8' (2,438 mm)
Weight, Nominal	1.2 lbs/sq ft (5.9 k/m^2)	2.0 lbs/sq ft (10 k/m^2)	2.5 lbs/sq ft (12 k/m^2)
Edges[1]	Square	Square	Square
Flexural Strength[1], Parallel	≥ 40 lbf. (178 N)	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
Bending Radius	4' (1,219 mm)	6' (1,829 mm)	8' (2,438 mm)
Thermal Resistance[4]	R = .23	R = .43	R = .5
Permeance[5]	25 perms	24 perms	23 perms
Water Absorption[1] (% of Weight)	≤ 10%	≤ 10%	≤ 10%
Surfacing	Coated Fiberglass	Coated Fiberglass	Coated Fiberglass
Flute Spanability[6]	2-5/8" (66.7 mm)	5" (127 mm)	8" (203 mm)
Compressive Strength[7]	900 psi	900 psi	900 psi
Mold Resistance[8]	Score of 10	Score of 10	Score of 10
Product Standard Compliance	ASTM C1177	ASTM C1177	ASTM C1177
Fire-Resistance Characteristics			
Core Type	Regular	Regular	Type X
UL Type Designation	FSW-6	FSW-6	FSW-6
Combustibility[2]	Non-combustible	Non-combustible	Non-combustible
Surface Burning Characteristics[3]	Class A	Class A	Class A
Flame Spread[3]	0	0	0
Smoke Development[3]	0	0	0
Fire Classification	UL Classified, FM Approved	UL Classified, FM Approved	UL Classified, FM Approved
Applicable Standards and References			
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*			
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*			
ASTM C1177 *Standard Test Method for Glass Mat Gypsum Substrate for Use as Sheathing*			
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*			
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*			
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*			
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*			
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750˚C*			
ASTM E661 *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*			
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*			
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*			

1. Specified values per ASTM C1177, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Tested in accordance with ASTM C518.
5. Tested in accordance with ASTM E96.
6. Tested in accordance with ASTM E661.
7. Tested in accordance with ASTM C473.
8. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.

PACKAGING

	Pallet Quantity	Coverage per Pallet	Weight per Pallet	Coverage per Truck	Weight per Truck
1/4" x 4' x 8'	44 pcs	1,408 sq ft	1,760 lbs	38,020 sq ft	47,520 lbs
1/2" x 4' x 8'	30 pcs	960 sq ft	2,016 lbs	23,040 sq ft	48,384 lbs
5/8" x 4' x 8'	30 pcs	960 sq ft	2,678 lbs	17,280 sq ft	48,211 lbs

Note: Any protective plastic factory packaging that is used to wrap DEXcell Roof Boards for shipment is intended to provide temporary protection from exposure to moisture only, and is not intended to provide protection during storage after delivery.

INSTALLATION RECOMMENDATIONS

General

- Install roof boards in accordance with methods described in the standards and references cited in this document.
- Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory*: **ul.com**.
- See Physical Properties chart on previous page for maximum flute span when panels are applied directly over metal decking.

Wind Uplift

- DEXcell Glass Mat Roof Boards are included in numerous assemblies evaluated by Factory Mutual Global (FMG) and other independent laboratories for wind-uplift performance. For information concerning such assemblies, visit **roofnav.com**.
- Refer to roof system manufacturer's written instructions, local code requirements, Factory Mutual Global (FMG) and Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners or adhesives specified in accordance with system requirements. Install approved fasteners with plates into the DEXcell Glass Mat Roof Board. Install fasteners and adhesives in compliance with the roof system manufacturer's installation recommendations and FMG Property Loss Prevention Data Sheet 1-29. Proper fastener spacing or adhesive application is essential to achieve wind-uplift performance.
- Locate board edge joints on, and end joints parallel to, metal deck ribs. Stagger end joints of adjacent lengths of DEXcell Glass Mat Roof Board. In typical installations, butt board edges and ends loosely.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Do not use a power saw to cut these products.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at: **goldbondbuilding.com** before use.

FIRE-RESISTANCE RATINGS

Fire and sound ratings for building systems utilizing glass mat gypsum roof boards are dependent on the thickness of the roof board, its application in conjunction with other roof assembly parts, and the manner in which the assembly is installed.

Tests for fire resistance and sound transmission performed by independent laboratories have resulted in specific ratings for roof assemblies. For maximum fire resistance and sound control, use double-layer construction. The additional mass further retards heat and noise penetration.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, use caution to ensure that each component of the assembly is the one specified in the test. Further, take precaution that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call1-800-NATIONAL. For fire-safety information, see **goldbondbuilding.com**.

- DEXcell Glass Mat Roof Board (minimum 1/4") meets UL Class A fire ratings for roofing systems up to unlimited slope per UL 790 and ULC CAN-S107; refer to *UL Certifications Directory*: **ul.com**
- DEXcell Glass Mat Roof Board (minimum 1/4") is classified in roof deck constructions in accordance with FM 4450, ANSI/UL1256, ULC CAN-S126 to resist fire from within a building; refer to *UL Certifications Directory*: **ul.com**
- 5/8" (15.9 mm) DEXcell Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to *UL Certifications Directory*: **ul.com**. Meets Type X per ASTM C1177.
- DEXcell Glass Mat Roof Board complies with requirements of FM 4450 and FM 4470. Meets FM Class 1.

LIMITATIONS

General

- DEXcell Glass Mat Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell Glass Mat Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell Glass Mat Roof Boards to control vapor drive and moisture.
- Although DEXcell Glass Mat Roof Boards are engineered with coated fiberglass facers and high-density gypsum cores, the presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components. Remove the damaged laminate underneath and cement the patch in its place with a good quality, vinyl-to-vinyl adhesive.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell Glass Mat Roof Boards that contain disproportionate free moisture content may require testing or replacement.
- Do not use panels as a nailing base.
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell Glass Mat Roof Boards.

- Do not expose DEXcell Glass Mat Roof Boards to weather conditions, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell Glass Mat Roof Boards as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell Glass Mat Roof Boards to wet roofing substrates.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of roof boards.
- Remove nonbreathable shipping wrap material upon receiving and storing roof boards.
- Store roof boards off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of roof boards to prevent sagging.
- Keep roof boards dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining roof boards.
- Do not apply roof boards with visible signs of moisture damage or mold growth. Do not apply roof boards over other building materials.

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, penetrations and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent leaks and resulting moisture saturation of roof boards.

Notes

DEXcell FA™ Glass Mat Roof Board

A Board You'll Want To Adhere To

1. Heavy Duty Coated Glass Mat
2. Enhanced Moisture- and Mold-Resistant Gypsum Core
3. Heavy Duty Coated Glass Mat

DEXcell FA™ Glass Mat Roof Board has heavy-duty coated fiberglass facers and an enhanced mold-resistant gypsum core. This moisture- and mold-resistant gypsum panel is a substrate board, thermal barrier and/or coverboard for commercial roofing applications. It scores and cuts easily, and is specially coated on the front, back and sides for easy handling.

Use it for a wide variety of roofing systems, including fully adhered, mechanically attached and ballasted roofs using single-ply membranes, modified bitumen, fluid-applied, built-up roofing, spray foam and metal.

BASIC USES

Applications

- Use DEXcell FA Glass Mat Roof Board as a substrate board and for thermal protection in roofing assemblies. It provides increased fire safety and acoustical enhancement. It also serves as a substrate for a vapor retarder and/or continuous substrate for the application of roofing membranes. This board provides increased moisture and mold resistance.
- Use it as an insulation coverboard in roofing assemblies. DEXcell FA Glass Mat Roof Board protects and supports the roof membrane; provides increased fire, moisture and mold resistance; and reduces the potential for penetration damage to the membrane.
- Use it to sheathe the roof side of parapet and penthouse walls.

Advantages

- Scores and snaps easily.
- Fiberglass mat on face and back has special coating for easy handling.
- Meets ASTM C1177.
- Meets FM Class 1 and UL Class A fire ratings for roofing systems up to unlimited slope per UL 790/ULC S107.
- Approved component in specific UL fire-rated designs.
- Use it as part of a class A, B or C roof covering that has been tested in accordance with UL 1256, ULC CAN-S126 or FM 4450. No additional thermal barrier is required as per IBC 2603.
- Anti-microbial per ASTM D6329.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Eliminates the need for a field-applied primer for many fully adhered roofing membrane applications. Please see system manufacturers' application recommendations.
- High-density coverboard/thermal barrier.
- 5/8" (15.9 mm) DEXcell FA Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to *UL Certifications Directory*: **ul.com**. Meets Type X per ASTM C1177.

SIZES

Thickness	Width x Length
1/4" (6.4 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)
1/2" (12.7 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)
5/8" (15.9 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)

DEXcell FA Glass Mat Roof Board is manufactured by Gold Bond Building Products, LLC.

DEXcell® FA Glass Mat Roof Board

TECHNICAL DATA

Physical Properties	1/4" DEXcell FA Glass Mat	1/2" DEXcell FA Glass Mat	5/8" DEXcell FA Glass Mat
Thickness[1], Nominal	1/4" (6.4 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
Length[1], Standard	4' (1,219 mm), 8' (2,438 mm)	4' (1,219 mm), 8' (2,438 mm)	4' (1,219 mm), 8' (2,438 mm)
Weight, Nominal	1.2 lbs/sq ft (5.9 k/m^2)	2.0 lbs/sq ft (10 k/m^2)	2.5 lbs/sq ft (12 k/m^2)
Edges[1]	Square	Square	Square
Flexural Strength[1], Parallel	≥ 40 lbf. (178 N)	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
Bending Radius	4' (1,219 mm)	6' (1,829 mm)	8' (2,438 mm)
Thermal Resistance[4]	R = .23	R = .43	R = .5
Permeance[5]	25 perms	24 perms	23 perms
Water Absorption[1] (% of Weight)	≤ 5%	≤ 5%	≤ 5%
Surface Water Absorption[7]	≤ 1.0 g	≤ 1.0 g	≤ 1.0 g
Surfacing	Coated Fiberglass	Coated Fiberglass	Coated Fiberglass
Flute Spanability[6]	2-5/8" (66.7 mm)	5" (127 mm)	8" (203 mm)
Compressive Strength[7]	900 psi	900 psi	900 psi
Mold Resistance[8], ASTM D3273	Score of 10	Score of 10	Score of 10
Product Standard Compliance	ASTM C1177	ASTM C1177	ASTM C1177
Fire-Resistance Characteristics			
Core Type	Regular	Regular	Type X
UL Type Designation	FSW-6	FSW-6	FSW-6
Combustibility[2]	Non-combustible	Non-combustible	Non-combustible
Surface Burning Characteristics[3]	Class A	Class A	Class A
Flame Spread[3]	0	0	0
Smoke Development[3]	0	0	0
Fire Classification	UL Classified, FM Approved	UL Classified, FM Approved	UL Classified, FM Approved
Applicable Standards and References			
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*			
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*			
ASTM C1177 *Standard Test Method for Glass Mat Gypsum Substrate for Use as Sheathing*			
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*			
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*			
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*			
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*			
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*			
ASTM E661 *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*			
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*			
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*			

1. Specified values per ASTM C1177, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Tested in accordance with ASTM C518.
5. Tested in accordance with ASTM E96.
6. Tested in accordance with ASTM E661.
7. Tested in accordance with ASTM C473.
8. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.

PACKAGING

	Pallet Quantity	Coverage per Pallet	Weight per Pallet	Coverage per Truck	Weight per Truck
1/4" x 4' x 4'	60 pcs	960 sq ft	1,200 lbs	38,400 sq ft	48,000 lbs
1/4" x 4' x 8'	44 pcs	1,408 sq ft	1,760 lbs	38,020 sq ft	47,520 lbs
1/2" x 4' x 4'	48 pcs	768 sq ft	1,612 lbs	23,040 sq ft	48,384 lbs
1/2" x 4' x 8'	30 pcs	960 sq ft	2,016 lbs	23,040 sq ft	48,384 lbs
5/8" x 4' x 4'	44 pcs	704 sq ft	1,964 lbs	16,900 sq ft	47,139 lbs
5/8" x 4' x 8'	30 pcs	960 sq ft	2,678 lbs	17,280 sq ft	48,211 lbs

Note: Any protective plastic factory packaging that is used to wrap DEXcell Roof Boards for shipment is intended to provide temporary protection from exposure to moisture only, and is not intended to provide protection during storage after delivery.

INSTALLATION RECOMMENDATIONS

General

- Install roof boards in accordance with methods described in the standards and references cited in this document.
- Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory*: **ul.com**.
- See Physical Properties chart on previous page for maximum flute span when panels are applied directly over metal decking.

Wind Uplift

- DEXcell FA Glass Mat Roof Boards are included in numerous assemblies evaluated by Factory Mutual Global (FMG) and other independent laboratories for wind-uplift performance. For information concerning such assemblies, visit: **roofnav.com**.
- Refer to roof system manufacturer's written instructions, local code requirements, Factory Mutual Global (FMG) and Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners or adhesives specified in accordance with system requirements. Install approved fasteners with plates into the DEXcell FA Glass Mat Roof Board. Install fasteners and adhesives in compliance with the roof system manufacturer's installation recommendations and FMG Property Loss Prevention Data Sheet 1-29. Proper fastener spacing or adhesive application is essential to achieve wind-uplift performance.
- Locate board edge joints on, and end joints parallel to, metal deck ribs. Stagger end joints of adjacent lengths of DEXcell FA Glass Mat Roof Board. In typical installations, butt board edges and ends loosely.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Do not use a power saw to cut these products.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at: **goldbondbuilding.com** before use.

FIRE-RESISTANCE RATINGS

Fire and sound ratings for building systems utilizing glass mat gypsum roof boards are dependent on the thickness of the roof board, its application in conjunction with other roof assembly parts, and the manner in which the assembly is installed.

Tests for fire resistance and sound transmission performed by independent laboratories have resulted in specific ratings for roof assemblies. For maximum fire resistance and sound control, use double-layer construction. The additional mass further retards heat and noise penetration.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, use caution to ensure that each component of the assembly is the one specified in the test. Further, take precaution that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL. For fire-safety information, see: **goldbondbuilding.com**.

- DEXcell FA Glass Mat Roof Board (minimum 1/4") meets UL Class A fire ratings for roofing systems up to unlimited slope per UL 790 and ULC CAN-S107; refer to *UL Certifications Directory*: **ul.com**.
- DEXcell FA Glass Mat Roof Board (minimum 1/4") is classified in roof deck constructions in accordance with FM 4450, ANSI/UL 1256, ULC CAN-S126 to resist fire from within a building; refer to *UL Certifications Directory*: **ul.com**.
- 5/8" (15.9 mm) DEXcell FA Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to *UL Certifications Directory*: ul.com. Meets Type X per ASTM C1177.
- DEXcell FA Glass Mat Roof Board complies with requirements of FM 4450 and FM 4470. Meets FM Class 1.

LIMITATIONS

General

- DEXcell FA Glass Mat Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell FA Glass Mat Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell FA Glass Mat Roof Boards to control vapor drive and moisture.
- Although DEXcell FA Glass Mat Roof Boards are engineered with coated fiberglass facers and high-density gypsum cores, the presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell FA Glass Mat Roof Boards that contain disproportionate free moisture content may require testing or replacement.
- Do not use panels as a nailing base.
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell FA Glass Mat Roof Boards.

- Do not expose DEXcell FA Glass Mat Roof Boards to weather conditions, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell FA Glass Mat Roof Boards as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell FA Glass Mat Roof Boards to wet roofing substrates.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of roof boards.
- Remove nonbreathable shipping wrap material upon receiving and storing roof boards.
- Store roof boards off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of roof boards to prevent sagging.
- Keep roof boards dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining roof boards.
- Do not apply roof boards with visible signs of moisture damage or mold growth. Do not apply roof boards over other building materials where conditions exist that are favorable to mold growth.

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, penetrations and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent leaks and resulting moisture saturation of roof boards.

Notes

DEXcell FA VSH™ Glass Mat Roof Board

A Board to Handle the Extremes

1. Heavy Duty Coated Glass Mat
2. Enhanced Moisture- and Mold-Resistant Gypsum Core
3. Heavy Duty Coated Glass Mat

DEXcell FA VSH™ Glass Mat Roof Board is a reinforced gypsum panel with an enhanced moisture resistant gypsum core and heavy duty coated glass mat facers. It is an excellent choice for applications requiring maximum hail and puncture resistance. It is extremely durable and approved for use in adhered and mechanically attached single-ply and multi-ply assemblies meeting FM Very Severe Hail Classification.

The precoated facers sealed surface technology is designed to increase the coverage of membrane adhesives and enhance the performance of the bond strength of the system. The DEXcell FA VSH Roof Boards help reduce the amount of adhesive used and may eliminate the need for a field primer. Consult the system manufacturer for actual priming requirements.

This moisture- and mold-resistant gypsum panel is a substrate board, thermal barrier and/or coverboard for commercial roofing applications. Use it in a wide variety of roofing systems, including fully adhered, modified bitumen, fluid applied, spray foam and metal roofs.

BASIC USES

Applications

- Use in adhered and mechanically attached single-ply and multi-ply assemblies.
- Use DEXcell FA VSH Glass Mat Roof Board as a substrate board and for thermal protection in roofing assemblies. It provides increased fire safety and acoustical enhancement. It also serves as a substrate for a vapor retarder and/or continuous substrate for the application of roofing membranes. This board provides increased moisture, mold and impact resistance.
- Use it as an insulation coverboard in adhered roofing assemblies. DEXcell FA VSH Glass Mat Roof Board protects and supports the roof membrane; provides increased hail resistance, fire, moisture and mold resistance; and reduces the potential for penetration damage to the membrane.
- Use it to sheath the roof side of parapet and penthouse walls.

Advantages

- Scores and snaps easily.
- Fiberglass mat on face and back has special coating for ease of use in handling and installation.
- Meets ASTM C1177.
- Meets FM Class 1 and UL Class A fire ratings for roofing systems up to unlimited slope per UL 790/ULC CAN-107.
- Approved component in specific UL fire-rated designs.
- Use it as part of a class A, B or C roof covering that has been tested in accordance with UL 1256, ULC CAN-S216 or FM 4450. No additional thermal barrier is required as per IBC 2603.
- Anti-microbial per ASTM D6329.

Continued on page 298.

DEXcell FA VSH Glass Mat Roof Board is manufactured by Gold Bond Building Products, LLC.

DEXcell FA VSH Glass Mat Roof Board

TECHNICAL DATA

Physical Properties	5/8" DEXcell FA VSH Glass Mat
Thickness[1], Nominal	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)
Length[1], Standard	4' (1,219 mm), 8' (2,438 mm)
Weight, Nominal	2.9 lbs/sq ft (14 k/m^2)
Edges[1]	Square
Flexural Strength[1], Parallel	≥ 100 lbf. (445 N)
Humidified Deflection[1]	≤ 1/8' (3.2 mm)
Nail Pull Resistance[1]	≥ 190 lbf. (400 N)
Hardness[1] – Core, Edges and Ends	≥ 15 lbf. (67 N)
Bending Radius	8' (2,438 mm)
Thermal Resistance[4]	R = .5
Permeance[5]	23 perms
Water Absorption[1] (% of Weight)	≤ 5%
Surfacing	Coated Fiberglass
Flute Spanability[6]	8" (203 mm)
Compressive Strength[7]	900 psi
Mold Resistance[8], ASTM D3273	Score of 10
Product Standard Compliance	ASTM C1177
Fire-Resistance Characteristics	
Core Type	Type X
UL Type Designation	FSW-6
Combustibility[2]	Non-combustible
Surface Burning Characteristics[3]	Class A
Flame Spread[3]	0
Smoke Development[3]	0
Fire Classification	UL Classified, FM Approved
Applicable Standards and References	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C1177 *Standard Test Method for Glass Mat Gypsum Substrate for Use as Sheathing*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E119 *Standard Test Methods for Fire Tests of Building Construction and Materials*	
ASTM E136 *Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C*	
ASTM E661 *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*	
Gypsum Association, GA-238, *Guidelines for Prevention of Mold Growth on Gypsum Board*	
Gold Bond Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1177, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E136.
3. Tested in accordance with ASTM E84.
4. Tested in accordance with ASTM C518.
5. Tested in accordance with ASTM E96.
6. Tested in accordance with ASTM E661.
7. Tested in accordance with ASTM C473.
8. Tested in accordance with ASTM D3273, and rated in accordance with ASTM D3274.

PACKAGING

	Pallet Quantity	Coverage per Pallet	Weight per Pallet	Coverage per Truck	Weight per Truck
5/8" x 4' x 4'	44 pcs	704 sq ft	2,152 lbs	15,488 sq ft	47,344 lbs
5/8" x 4' x 8'	30 pcs	1,440 sq ft	2,784 lbs	16,281 sq ft	47,215 lbs

Note: Any protective plastic factory packaging that is used to wrap DEXcell Roof Boards for shipment is intended to provide temporary protection from exposure to moisture only, and is not intended to provide protection during storage after delivery.

Continued from page 296.

- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Precoated facers seal the surface allowing improved adhesive coverage and bond.
- Eliminates the need for a field-applied primer for many fully adhered roofing membrane applications.
- High-density coverboard/thermal barrier.

SIZES

Thickness	Width x Length
5/8" (15.9 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)

INSTALLATION RECOMMENDATIONS

General

- Install roof boards in accordance with methods described in the standards and references cited in this document.
- Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory*: **ul.com**.
- See Physical Properties chart on previous page for maximum flute span when panels are applied directly over metal decking.

Wind Uplift

- DEXcell FA VSH Glass Mat Roof Boards are included in numerous assemblies evaluated by Factory Mutual Global (FMG) and other independent laboratories for very severe hail and wind-uplift performance. For information concerning such assemblies, visit: **roofnav.com**.
- Refer to roof system manufacturer's written instructions, local code requirements, Factory Mutual Global (FMG) and Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners or adhesives specified in accordance with system requirements. Install approved fasteners with plates into the DEXcell FA VSH Glass Mat Roof Board. Install fasteners and adhesives in compliance with the roof system manufacturer's installation recommendations and FMG Property Loss Prevention Data Sheet 1-29. Proper fastener spacing or adhesive application is essential to achieve wind-uplift performance.
- Locate board edge joints on, and end joints parallel to, metal deck ribs. Stagger end joints of adjacent lengths of DEXcell FA VSH Glass Mat Roof Board. In typical installations, butt board edges and ends loosely.

Safety

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Do not use a power saw to cut these products.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at: **goldbondbuilding.com** before use.

FIRE-RESISTANCE RATINGS

Fire and sound ratings for building systems utilizing glass mat gypsum roof boards are dependent on the thickness of the roof board, its application in conjunction with other roof assembly parts, and the manner in which the assembly is installed.

Tests for fire resistance and sound transmission performed by independent laboratories have resulted in specific ratings for roof assemblies. For maximum fire resistance and sound control, use double-layer construction. The additional mass further retards heat and noise penetration.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, use caution to ensure that each component of the assembly is the one specified in the test. Further, take precaution that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call1-800-NATIONAL. For fire-safety information, see: **goldbondbuilding.com**.

- DEXcell FA VSH Glass Mat Roof Board meets UL Class A fire ratings for roofing systems up to unlimited slope per UL 790 and ULC CAN-S107; refer to *UL Certifications Directory*: **ul.com**.
- DEXcell FA VSH Glass Mat Roof Board is classified in roof deck constructions in accordance with FM 4450, ANSI/UL 1256, ULC CAN-S126 to resist fire from within a building; refer to *UL Certifications Directory*: **ul.com**.
- 5/8" (15.9 mm) DEXcell FA VSH Glass Mat Roof Board is UL Classified for use in numerous hourly rated UL assemblies, including UL "P" roof assemblies; refer to *UL Certifications Directory*: **ul.com**. Meets Type X per ASTM C1177.
- DEXcell FA VSH Glass Mat Roof Board complies with requirements of FM 4450 and FM 4470. Meets FM Class 1.

LIMITATIONS

General

- DEXcell FA VSH Glass Mat Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell FA VSH Glass Mat Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell FA VSH Glass Mat Roof Boards to control vapor drive and moisture.
- Although DEXcell FA VSH Glass Mat Roof Boards are engineered with coated fiberglass facers and high-density gypsum cores, the presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell FA VSH Glass Mat Roof Boards that contain disproportionate free moisture content may require testing or replacement.
- Do not use panels as a nailing base.
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell FA VSH Glass Mat Roof Boards.
- Do not expose DEXcell FA VSH Glass Mat Roof Boards to weather conditions, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell FA VSH Glass Mat Roof Boards as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell FA VSH Glass Mat Roof Boards to wet roofing substrates.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of roof boards.
- Remove nonbreathable shipping wrap material upon receiving and storing roof boards.
- Store roof boards off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of roof boards to prevent sagging.
- Keep roof boards dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining roof boards.
- Do not apply roof boards with visible signs of moisture damage or mold growth. Do not apply roof boards over other building materials where conditions exist that are favorable to mold growth.

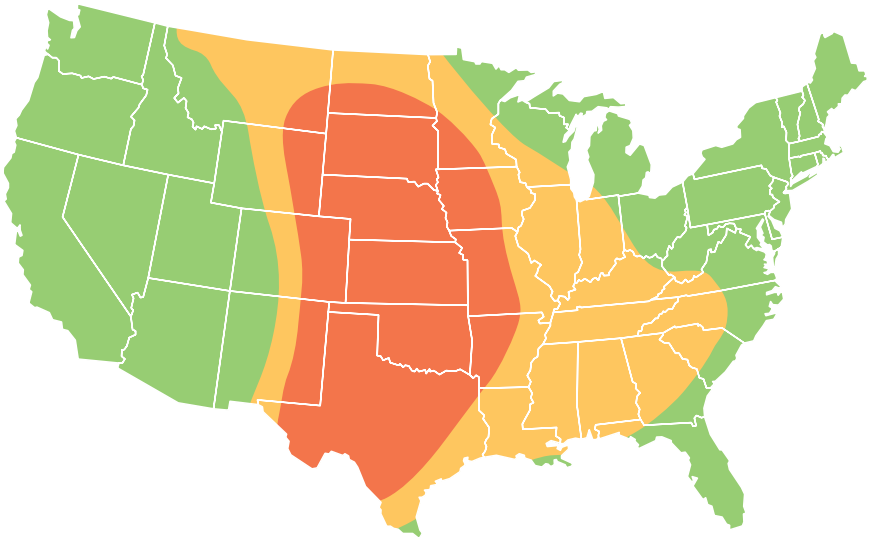
Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, penetrations and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent leaks and resulting moisture saturation of roof boards.

U.S. HAILSTORM SEVERITY MAP

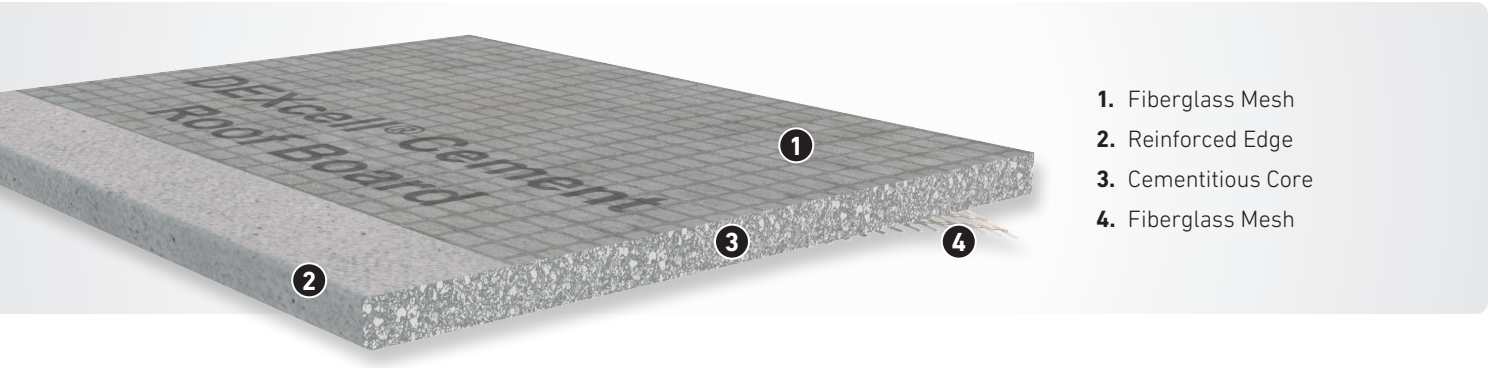
The geographic range for very severe hail has increased year-over-year according to FM Global Property Loss Prevention Data.

Moderate Severe Very Severe



DEXcell® Cement Roof Board

A Board To Get, Wherever It's Wet



1. Fiberglass Mesh
2. Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

DEXcell® Cement Roof Board is a lightweight, moisture- and mold-resistant panel that provides an exceptionally hard, durable surface that withstands prolonged exposure to moisture. Its composition of Portland cement and lightweight aggregate with heavy-duty fiberglass-mesh facers makes it an excellent fire and thermal barrier. This moisture- and mold-resistant cement panel is a substrate board, thermal barrier and coverboard for commercial roofing applications.

Use it for a wide variety of roofing systems, including fully adhered, mechanically attached and ballasted roofs using single-ply membranes, modified bitumen, fluid-applied, built-up roofing, spray foam and metal.

BASIC USES

Applications

- Use it as a coverboard in roofing assemblies. DEXcell Cement Roof Board protects and supports the roof membrane; provides increased fire, moisture and mold resistance; and reduces the potential for penetration damage to the membrane.
- Use it to sheath the roof side of parapet and penthouse walls.
- Ideal for green roofs and photovoltaic systems.

Advantages

- Excellent bond/pull-through/uplift values.
- Impact resistant, extremely durable and dimensionally stable.
- High compressive strength.
- Lightweight, cementitious core.
- Superior moisture resistance.
- Exceptional freeze/thaw resistance.
- Scores and snaps easily.
- Meets ASTM C1325.
- Meets FM Class 1 and UL Class A fire ratings for roofing systems up to unlimited slope per UL 790/ULC CAN-S107.
- Use in accordance with a rated system, and DEXcell Cement Roof Board provides a thermal barrier meeting IBC Section 2603.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Product achieves UL GREENGUARD Certification for low chemical emissions. For more information, visit: **ul.com/gg**.

SIZES

Thickness	Width x Length
7/16" (11.1 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)
5/8" (15.9 mm)	**4' x 4'** (1,219 mm x 1,219 mm) **4' x 8'** (1,219 mm x 2,438 mm)

DEXcell Cement Roof Board is manufactured by PermaBASE Building Products, LLC.

DEXcell® Cement Roof Board

TECHNICAL DATA

Physical Properties	7/16" DEXcell Cement Roof Board	5/8" DEXcell Cement Roof Board
Thickness[1], Nominal	7/16" (11.1 mm)	5/8" (15.9 mm)
Width[1], Nominal	4' (1,219 mm)	4' (1,219 mm)
Length[1], Standard	4' (1,219 mm), 8' (2,438 mm)	4' (1,219 mm), 8' (2,438 mm)
Weight, Nominal	2.1 lbs/sq ft (10.3 k/m^2)	3.0 lbs/sq ft (14.7 k/m^2)
Edges[1]	Square	Square
Flexural Strength[6]	≥ 750 psi	≥ 750 psi
Bending Radius	5' (1,524 mm)	5' (1,524 mm)
Thermal Resistance[3]	R = .28	R = .40
Permeance[4]	> 5 perms	> 5 perms
Water Absorption[10] (% of Weight)	< 10%	< 10%
Linear Variation and Change Moisture[7]	≤ 0.07 g	≤ 0.07 g
Flute Spanability[5]	12" (305 mm)	12" (305 mm)
Compressive Strength[10]	1,250 psi	1,250 psi
Mold Resistance[8], ASTM D3273	Score of 10	Score of 10
Mold Resistance[9], ASTM G21	Score of 0	Score of 0
Product Standard Compliance	ASTM C1325	ASTM C1325
Fire-Resistance Characteristics		
Core Type	N/A	N/A
UL Type Designation	DEXcell Cement Roof Board	DEXcell Cement Roof Board
Surface Burning Characteristics[2]	Class A	Class A
Flame Spread[2]	0	0
Smoke Development[2]	0	0
Fire Classification	UL Classified, FM Approved	UL Classified, FM Approved
Applicable Standards and References		
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*		
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*		
ASTM C947 *Standard Test Method for Flexural Properties of Thin-Section Glass-Fiber-Reinforced Concrete (Using Simple Beam with Third-Point Loading)*		
ASTM C1325 *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing*		
ASTM D1037 *Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials*		
ASTM D2394 *Standard Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring*		
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*		
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*		
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*		
ASTM E661 *Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads*		
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*		
PermaBASE Building Products, LLC Manufacturer Standards, *NGC Construction Guide*		

1. Specified values per ASTM C1325, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E84.
3. Tested in accordance with ASTM C518.
4. Tested in accordance with ASTM E96.
5. Tested in accordance with ASTM E661.
6. Specified minimum values per ASTM C1325, tested in accordance with ASTM C947.
7. Specified minimum values per ASTM C1325, tested in accordance with ASTM D1037.
8. Tested in accordance with ASTM D3273.
9. Tested in accordance with ASTM G21.
10. Tested in accordance with ASTM C473.

PACKAGING

	Pallet Quantity	Coverage per Pallet	Weight per Pallet	Coverage per Truck	Weight per Truck
7/16" x 4' x 4'	30 pcs	480 sq ft	1,067 lbs	21,600 sq ft	48,016 lbs
7/16" x 4' x 8'	30 pcs	960 sq ft	2,110 lbs	22,080 sq ft	48,531 lbs
5/8" x 4' x 4'	24 pcs	384 sq ft	1,080 lbs	16,128 sq ft	48,600 lbs
5/8" x 4' x 8'	24 pcs	768 sq ft	2,130 lbs	16,128 sq ft	48,990 lbs

Note: Any protective plastic factory packaging that is used to wrap DEXcell Cement Roof Boards for shipment is intended to provide temporary protection from exposure to moisture only, and is not intended to provide protection during storage after delivery.

INSTALLATION RECOMMENDATIONS

General

- Install roof boards in accordance with methods described in the standards and references cited in this document. Always refer to the roof-system manufacturer for project-specific installation details.
- Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory*: **ul.com**.
- See Physical Properties chart on previous page for maximum flute span when panels are applied directly over metal decking.

Wind Uplift

DEXcell Cement Roof Boards are included in numerous assemblies evaluated by Factory Mutual Global (FMG) and other independent laboratories for wind-uplift performance. For information concerning such assemblies, visit: **roofnav.com**.

Refer to roof system manufacturer's written instructions, local code requirements, Factory Mutual Global (FMG) and Underwriters Laboratories (UL) requirements for proper installation techniques.

- Use fasteners or adhesives specified in accordance with system requirements. Install approved fasteners with plates into the DEXcell Cement Roof Board. Install fasteners and adhesives in compliance with the roof-system manufacturer's installation recommendations and FMG Property Loss Prevention Data Sheet 1-29. Proper fastener spacing or adhesive application is essential to achieve wind-uplift performance.
- Locate board edge joints on, and end joints parallel to, metal deck ribs. Stagger end joints of adjacent lengths of DEXcell Cement Roof Board. In typical installations, butt board edges and ends loosely.

Safety

Installers should wear eye protection (goggles or safety glasses with side shield). Do not use a power saw to cut these products. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust that may be released during cutting. Consult the SDS for this product, available at: **permabase.com** before use.

FIRE-RESISTANCE RATINGS

Fire and sound ratings for building systems utilizing cement roof boards are dependent on the thickness of the roof board, its application in conjunction with other roof assembly parts, and the manner in which the assembly is installed.

Tests for fire resistance and sound transmission performed by independent laboratories have resulted in specific ratings for roof assemblies. For maximum fire resistance and sound control, use double-layer construction. The additional mass further retards heat and noise penetration.

Fire-resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. When selecting construction designs to meet certain fire-resistance requirements, use caution to ensure that each component of the assembly is the one specified in the test. Further, take precaution that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL. For fire-safety information, see **permabase.com**.

- DEXcell Cement Roof Board meets UL Class A fire ratings for roofing systems up to unlimited slope per UL 790; refer to *UL Certifications Directory*: **ul.com**.
- DEXcell Cement Roof Board is classified in roof deck constructions in accordance with ANSI/UL 1256; refer to *UL Certifications Directory*: **ul.com**.
- DEXcell Cement Roof Board complies with requirements of FM 4450 and FM 4470. Meets FM Class 1.

LIMITATIONS

General

- DEXcell Cement Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell Cement Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell Cement Roof Boards to control vapor drive and moisture.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell Cement Roof Boards that contain disproportionate free moisture content may require testing or replacement. The presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components.
- Do not use panels as a nailing base.
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell Cement Roof Boards.

- Do not expose DEXcell Cement Roof Boards to weather conditions and temperatures, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell Cement Roof Board as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell Cement Roof Boards to wet roofing substrates.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of roof boards in order to avoid the formation of mold or mildew.
- Remove nonbreathable shipping wrap material upon receiving and storing roof boards.
- Store roof boards off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of roof boards to prevent sagging.
- Keep roof boards dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining roof boards.
- Do not apply roof boards with visible signs of moisture damage or mold growth. Do not apply roof boards over other building materials where conditions exist that are favorable to mold growth.

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, penetrations and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent leaks and resulting moisture saturation of roof boards.

Notes

Installation Guide

DESIGN RECOMMENDATIONS

DEXcell Roof Boards form one component among many components in a properly designed roof assembly. Gold Bond Building Products, LLC, for gypsum DEXcell products, and PermaBASE Building Products, LLC, for cement DEXcell products, do not warrant the design, quality or workmanship of any other components in any roof assembly in which the DEXcell products may be used or of the roof assembly as a whole. Specifically, the manufacturers offer no recommendations regarding the following aspects of a roof assembly:

- The type of roof assembly to use (single-ply, modified bitumen, built-up roof, etc.);
- The specifications of the other components in the roof assembly;
- Whether to use a separator sheet or vapor barrier between DEXcell Roof Boards and any other component of the roof assembly;
- Priming requirements.

However, different DEXcell products are designed for different applications. Refer to the chart on page 287 for recommendations of which DEXcell products are best suited for various applications.

APPLICATION RECOMMENDATIONS

The performance of any DEXcell product may be negatively impacted by excess moisture, heat or pressure. The recommendations and limitations are intended to lower the risk of excess moisture, heat and loads. Failure to observe these recommendations and limitations may void the warranty.

Adhesives and Primers. DEXcell FA Glass Mat Roof Board and DEXcell Cement Roof Board are the preferred products for use in fully adhered roof systems.

Adhered Membrane Attachment

Solvent-Based Adhesives and Primers. Use solvent-based adhesives and primers in accordance with the manufacturer's procedures. Installers must allow sufficient time for solvents and primers to evaporate after application to avoid potential damage to the DEXcell products or other components. Excessive use of solvent-based adhesives increases the risk of blisters. For water-based adhesives, follow manufacturer's recommendations. Confirm any priming requirements of DEXcell products with the membrane manufacturer.

Cold Adhesives. Apply cold adhesives uniformly, as necessary, for good bond. Excessive use of cold adhesives increases the risk of blisters.

Torch-Down Roofing. When applying a membrane using a "torchdown" application method, all products must be dry prior to beginning the installation. Use proper torch technique and limit the amount of heat placed on the DEXcell Roof Boards by aiming the torch flame directly at the roof membrane roll and not at the DEXcell Roof Boards. Avoid overheating the membrane or DEXcell product surface. Check with the roof system manufacturer or roof design professional for attachment requirements for each project.

Hot-Mop Applications. DEXcell Cement Roof Board is recommended for hot-mop applications. When hot mopping, follow the manufacturer's recommendations with respect to ambient temperature and humidity, optimal temperature for the asphalt and appropriate handling of the material. For application temperatures in excess of 450˚F (232˚C) and/or mopping type IV asphalt, ribbon mopping, spot mopping or installing a venting base sheet is recommended.

Flood Mopping. See attachment chart on the next page for proper flood-mopping applications. Flood mopping DEXcell FA Glass Mat Roof Board or DEXcell Glass Mat Roof Board to a substrate and then flood mopping a membrane to the DEXcell product is not recommended. To avoid excess heat and moisture, spot mopping, ribbon mopping, or installing a venting base sheet is recommended.

Always allow time to cool between applications of hot asphalt or torching.

Coverboard Attachment

Loose Laid. DEXcell Roof Boards may be loose laid with no means of attachment to the structural deck in roof systems with ballasted or mechanically fastened covers. When conditions dictate, such as to prevent wind blow-off or damage during installation, the coverboard can be weighed down or tacked in place with a minimal quantity of mechanical fasteners. Board edges and ends should be butted tightly together. On metal deck, edge joints should be located on and parallel to the top flutes. On structural wood decking, edge and end joints should be staggered at least 6" from the wood decking.

Adhered. DEXcell FA, DEXcell FA VSH and DEXcell Cement Boards can be adhered with a variety of materials to substrates below. The recommended coverboard size is 4' x 4' when using this attachment method. Coverboard edge joints are to be continuous. All coverboard edges and ends should be butted tightly together. All coverboard joints should be offset a minimum of 6" from the panel joints below. All surfaces must be free of any debris, dirt, dust, grease, oil, diesel fuel and standing water before application.

DEXcell FA, DEXcell FA VSH and DEXcell Cement Boards attached in asphalt should be installed by a roofing crew fully trained for these applications. The backside of the coverboard is to be set into the asphalt while still pliable. Asphalt should be applied at a nominal rate of 30 lbs./100 ft.^{2} and within ±25°F of the EVT or as specified in the system approval.

DEXcell FA, DEXcell FA VSH and DEXcell Cement Boards can be attached using low-rise foam applied in ribbons or spatter spray. The backside of the coverboard is to be set onto the spray foam before it is tack-free. Walk on or apply pressure by other means to the entire surface of the boards for maximum contact. Follow adhesive manufacturer's guidelines.

Mechanical. DEXcell FA, DEXcell FA VSH and DEXcell Cement Boards may be mechanically attached to the structural decking. Coverboard edge joints are to be continuous. All coverboard edges and ends should be butted tightly together. All coverboard joints should be offset a minimum of 6" from the panel joints below.

Fasteners should never be closer than 6" from the edges of DEXcell coverboard, and should be placed in a pattern to achieve the desired approval. Care must be taken to avoid over-driving or under-driving the fastener and plate assembly. For mechanically attached insulation systems that incorporate a thermal barrier and/or a layer of rigid foam insulation with the DEXcell coverboard, it is possible to attach all layers to the structural decking using a single fastener of sufficient length.

INSTALLATION RECOMMENDATIONS

General

Gold Bond Building Products, LLC and PermaBASE Building Products, LLC, make no representations or warranties regarding best practices in the design or installation of roof assemblies. Refer to the applicable roof system manufacturer's written instructions, industry best practices, local code requirements and FMG and/or UL requirements for proper installation techniques. In addition to the limitations regarding heat, moisture and loads in the sections above, DEXcell products are subject to the following installation recommendations and limitations:

- Use only mechanical fasteners approved by FMG or UL with DEXcell products and install such fasteners in strict compliance with the roof system manufacturer's installation recommendations and the most current applicable FMG Loss Prevention Data Sheets. Proper fastener spacing is essential to achieve the proper wind-uplift performance.
- Install only as many DEXcell Roof Boards as can be covered by the roof membrane system during the same day. Locate joints parallel to the deck ribs on the ribs of the steel roof deck. See the product data table for maximum flute span when installing panels directly over steel roof decking. Stagger end joints of adjacent lengths of DEXcell Roof Board. In typical installations, butt board edges and ends loosely. The design authority should calculate the appropriate spacing between roof boards to allow for thermal expansion based on typical post-installation roof temperature and accounting for installation conditions, in each case based on published DEXcell product properties data.
- For vertical parapet applications, use only 1/2" (12.7 mm) or 5/8" (15.9 mm) DEXcell FA Glass Mat Roof Boards or DEXcell Cement Roof Boards. Maximum framing spacing is 24" (610 mm) o.c. for 5/8" (15.9 mm) DEXcell FA Glass Mat Roof Boards and 16" (406 mm) o.c. for both the 1/2" (12.7 mm) DEXcell FA Glass Mat Roof Board and 7/16" (11.1 mm) DEXcell Cement Roof Board.
- Install roof boards in accordance with methods described in the standards and references cited in this document.
- Examine and inspect deck substrate to which roof boards are to be applied. Remedy all defects prior to installation of the roof boards.
- Provide minimum 1/4" (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory*: **ul.com**.
- See Physical Properties chart for maximum flute span when panels are applied directly over metal decking.

BEST CHOICE FOR ALL APPLICATIONS

	Coverboard Attachment				Membrane Attachment						
Product	**Loose Lay**	**Hot Asphalt**	**Adhesive**	**Mech. Fastener**	**Solvent Based**	**Water Based**	**Torch**	**Hot Asphalt**	**Cold Adhesive**	**Low-Rise Foam**	**Mech. Fastener**
DEXcell® Glass Mat	✓[1]	—	—	✓[2]	—	—	—	—	—	—	✓
DEXcell FA™ Glass Mat	✓[1]	✓	✓	✓	✓	✓	✓	Fleece[3]	✓	✓	✓
DEXcell FA VSH™ Glass Mat	✓[1]	✓	✓	✓	✓	✓	✓	Fleece[3]	✓	✓	✓
DEXcell® Cement Board	✓[1]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Yes — No

1. Loose lay when layers above are attached to the deck. Common in thermal barrier applications.
2. With MA roof covers. 4 to 5 fasteners per 4x8 are commonly used.
3. Application of fleece back membrane in hot asphalt is permitted.

LIMITATIONS

Avoid Excess Loads. Subjecting any DEXcell product to excessive loads or foot traffic may void the warranty. Take appropriate protective measures to avoid any concentration of weight that may damage or fracture the roof boards. For example, use extra caution when placing steel-wheeled equipment on installed DEXcell Roof Boards or when installing DEXcell Roof Boards on plaza decks.

Avoid Excess Moisture. Keep DEXcell products dry at all times. The presence of moisture on the surface or within the core of any substrate (including DEXcell products) or anywhere in the roof assembly can negatively impact performance by causing blisters to form during torching or hot mopping or by weakening the structural stability of the roof system. This can significantly decrease wind-uplift resistance in the roof system. It is recommended to evaluate the moisture content of DEXcell Roof Boards with a high-quality moisture meter.

Do not apply fully adhered membranes (solvent-based, water-based, cold adhesives, peel and stick, torched, hot mopped) to wet or dampened DEXcell products. All components of a roof assembly must be thoroughly dry prior to installation of the roof membrane. Do not install DEXcell products during rain, heavy fog, or any other conditions that could deposit moisture on the surface of the roof boards.

To reduce the impact of environmental moisture, DEXcell Roof Boards must be covered by the roof system membrane the same day they are installed. Install only as many DEXcell Roof Boards as can be covered by the final roof covering in the same day.

Take appropriate moisture-control measures when installing DEXcell products on a new poured concrete or lightweight concrete roof deck, or when re-roofing over an existing concrete roof deck, in accordance with recommendations by roof design professionals, roof system manufacturers, and any applicable design or construction code requirements. Thoroughly dry re-roof or re-cover applications prior to installation of DEXcell products.

- DEXcell Roof Boards are engineered to perform within a properly designed roof system. The use of DEXcell Roof Boards as a roofing system component is the responsibility of the design professional.
- Design roof assemblies containing DEXcell Roof Boards to control vapor drive and moisture.
- Although DEXcell Roof Boards are engineered with coated fiberglass facers and high-density gypsum cores, the presence of free moisture can have an adverse effect on product performance and may compromise the installation of additional roofing system components.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DEXcell Roof Boards that contain disproportionate free moisture content may require testing or replacement.
- Do not use panels as a nailing base.
- For suitability in specific roofing systems, contact roofing manufacturers on the application of their products to DEXcell Roof Boards.
- Do not expose DEXcell Roof Boards to weather conditions, dew, installation techniques or moisture drive conditions that may have adverse effects on the performance of the roof system.
- Apply only as much DEXcell Roof Boards as can be covered by a watertight roof covering the same day.
- Do not apply DEXcell Roof Boards to wet roofing substrates.

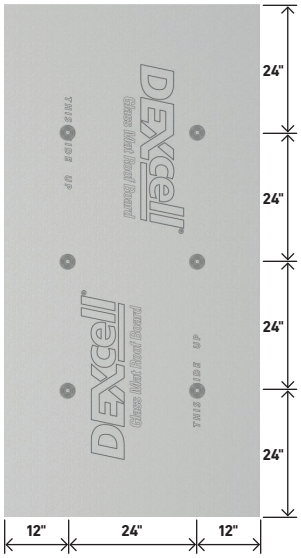
STORAGE RECOMMENDATIONS

Keep DEXcell products dry at all times before, during and after the installation of the roof system. Upon receipt by the customer, remove all plastic packaging from the DEXcell Roof Boards immediately. Fully cover the DEXcell Roof Boards with a breathable, waterproof covering. Failure to immediately remove the plastic packaging may result in condensation or moisture being trapped on or in the product and may void the warranty.

Never store DEXcell Roof Board on the ground, and always stack flat. Air must be allowed to circulate around and under the stored bundles of DEXcell Roof Board to avoid build-up of moisture.

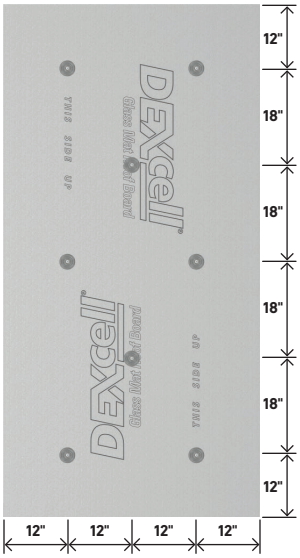
Fastener Applications

6 Per 4'x8' Sheet



8 Per 4'x8' Sheet

8 Per 4'x8' Sheet



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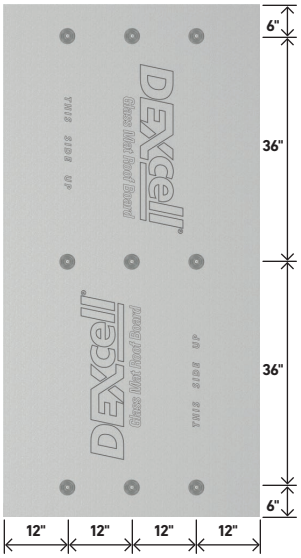

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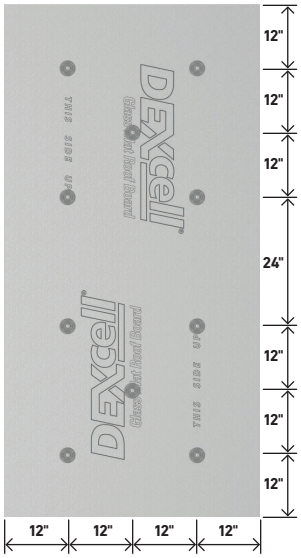

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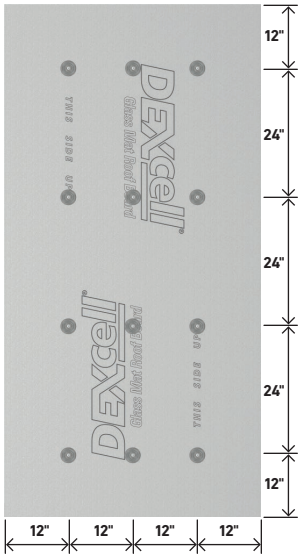

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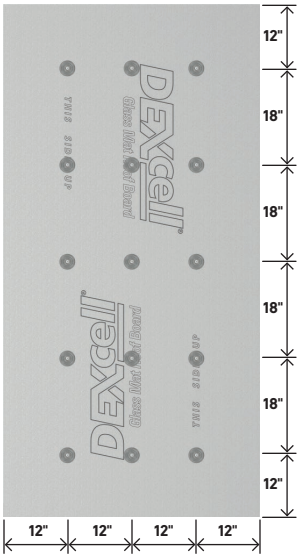

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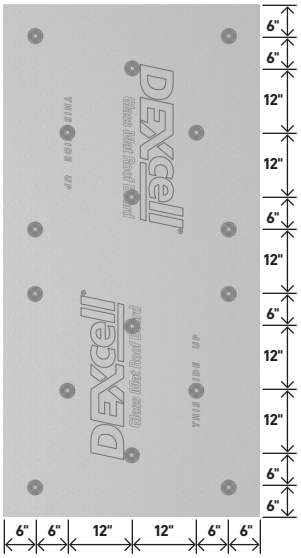

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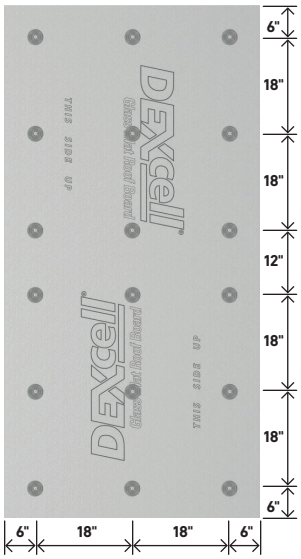

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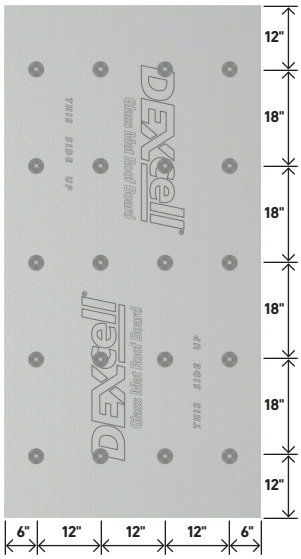

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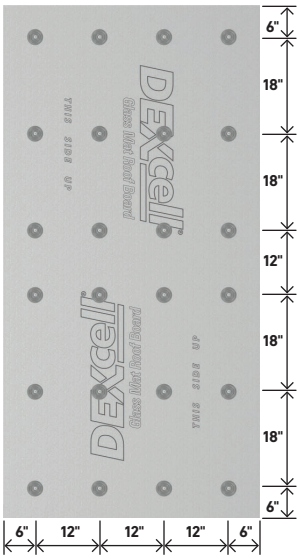

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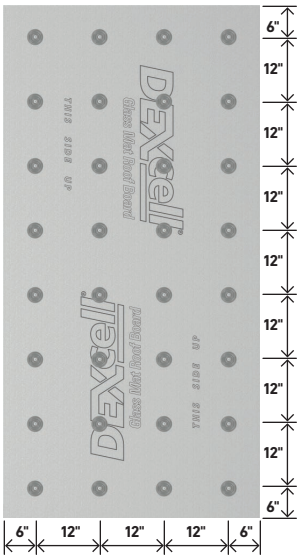
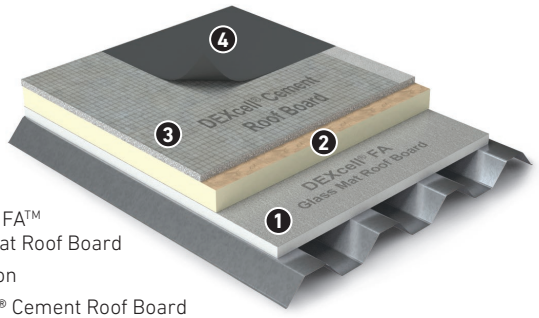


Typical Roof System Applications

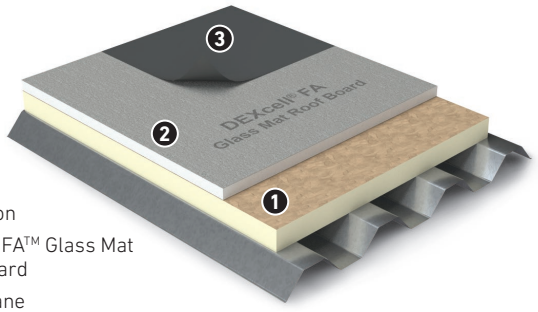
The following are examples of typical roof system applications using DEXcell Roof Boards and are for illustration purposes only. Consult with the roof system manufacturer or roof design professional for recommendations of use and installation. The manufacturers of DEXcell Roof Board products do NOT provide roof design services and make no warranties or representation with respect to any particular roof system or any components or materials, other than DEXcell Roof Boards. It is the responsibility of the roof system manufacturer or roof design professional to determine the suitability of DEXcell Roof Boards, or the use of any other materials with DEXcell Roof Boards, for any particular application.

COVERBOARD



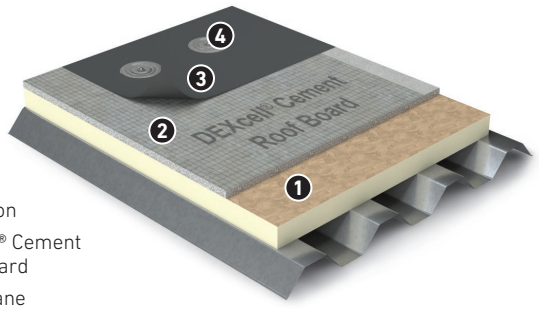
1. DEXcell FA™ Glass Mat Roof Board
2. Insulation
3. DEXcell® Cement Roof Board
4. Membrane

COVERBOARD



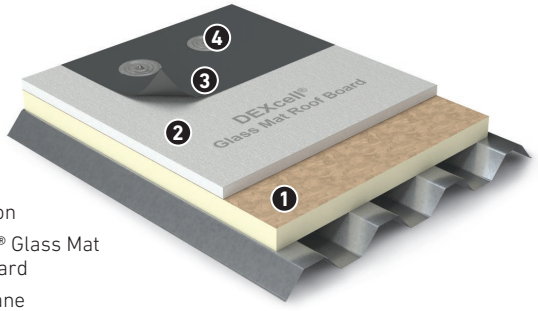
1. Insulation
2. DEXcell FA™ Glass Mat Roof Board
3. Membrane

COVERBOARD



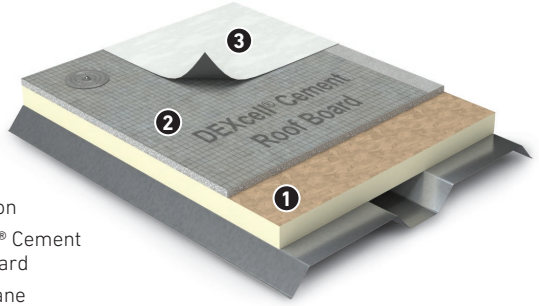
1. Insulation
2. DEXcell® Cement Roof Board
3. Membrane
4. Fastener

COVERBOARD



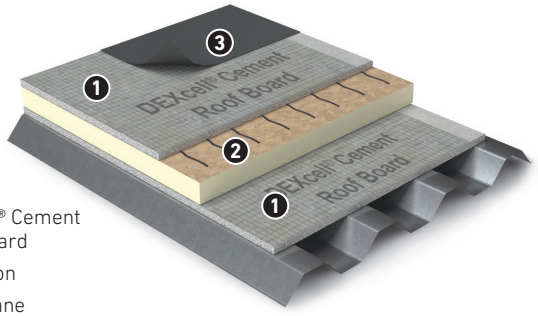
1. Insulation
2. DEXcell® Glass Mat Roof Board
3. Membrane
4. Fastener

COVERBOARD



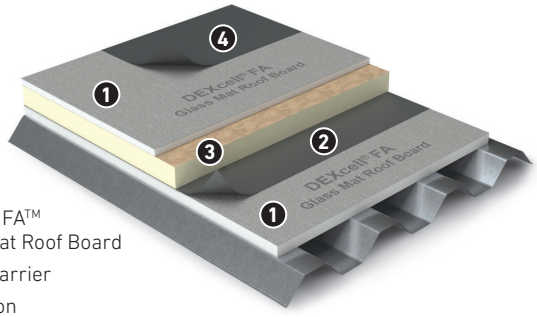
1. Insulation
2. DEXcell® Cement Roof Board
3. Membrane

THERMAL BARRIER / VAPOR BARRIER



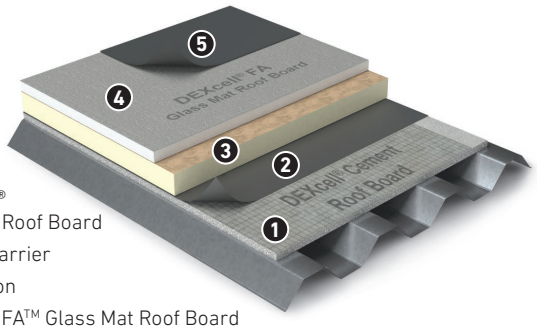
1. DEXcell® Cement Roof Board
2. Insulation
3. Membrane

THERMAL BARRIER / VAPOR BARRIER



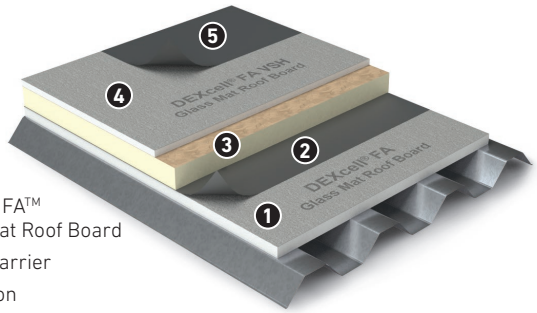
1. DEXcell FA™ Glass Mat Roof Board
2. Vapor Barrier
3. Insulation
4. Membrane

THERMAL BARRIER / VAPOR BARRIER



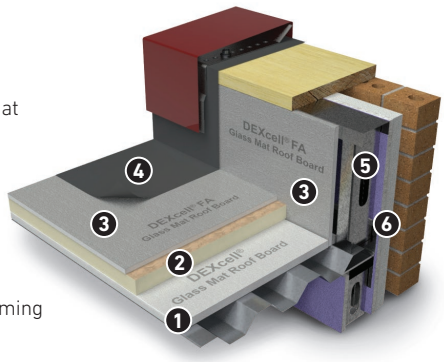
1. DEXcell® Cement Roof Board
2. Vapor Barrier
3. Insulation
4. DEXcell FA™ Glass Mat Roof Board
5. Membrane

VERY SEVERE HAIL



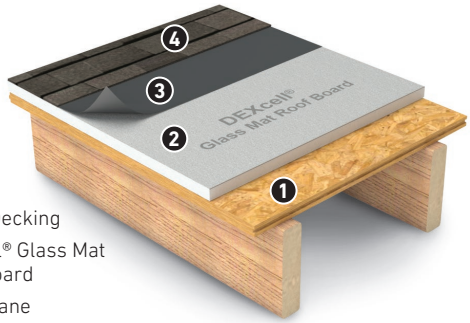
1. DEXcell FA™ Glass Mat Roof Board
2. Vapor Barrier
3. Insulation
4. DEXcell FA VSH™ Glass Mat Roof Board
5. Membrane

THERMAL BARRIER / VAPOR BARRIER



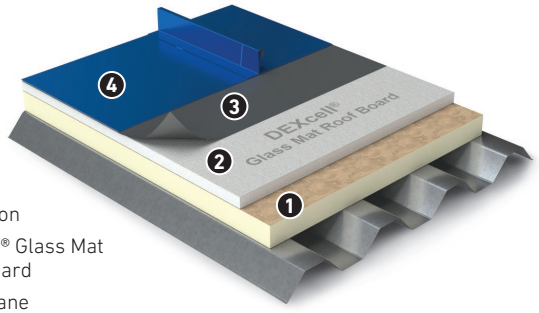
1. DEXcell® Glass Mat Roof Board
2. Insulation
3. DEXcell FA™ Glass Mat Roof Board
4. Membrane
5. Parapet Wall Framing
6. Sheathing

VARIOUS APPLICATIONS



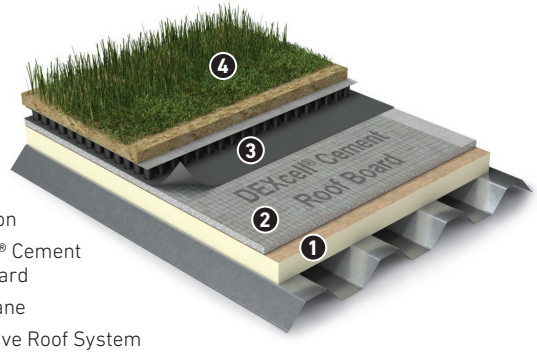
1. Wood Decking
2. DEXcell® Glass Mat Roof Board
3. Membrane
4. Shingles

VARIOUS APPLICATIONS



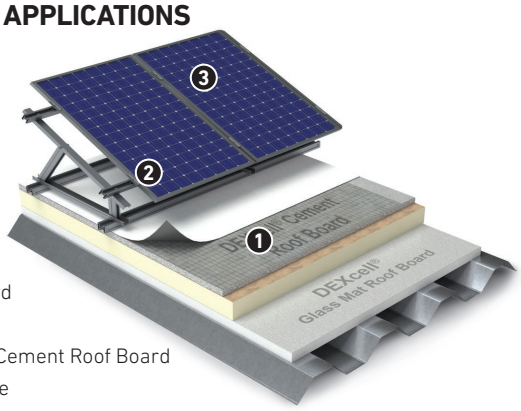
1. Insulation
2. DEXcell® Glass Mat Roof Board
3. Membrane
4. Metal Roof

VARIOUS APPLICATIONS



1. Insulation
2. DEXcell® Cement Roof Board
3. Membrane
4. Vegetative Roof System

VARIOUS APPLICATIONS



1. DEXcell® Glass Mat Roof Board
2. Insulation
3. DEXcell® Cement Roof Board
4. Membrane
5. Photovoltaic Panels

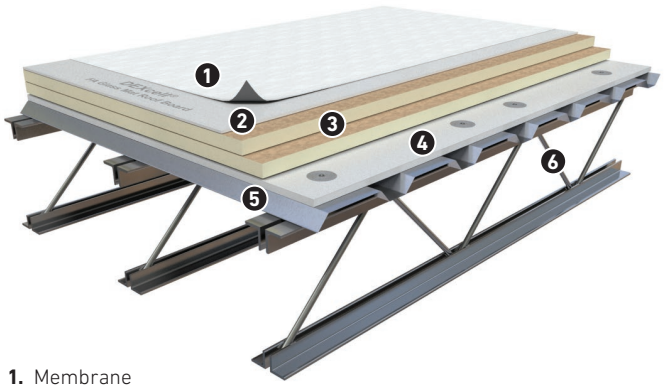
Acoustics

Architects, roof consultants and contractors have come under increasing pressure to reduce sound transmission through the roof assembly in commercial, residential, institutional and industrial roof assemblies. Sound Transmission Class, or STC, measures how well a building material or assembly blocks airborne sound. STC is a single number rating system. An Outdoor Indoor Transmission Class (OITC) rating is a single number rating for comparing the performance of exterior roofs exposed to typical transportation noise sources.

DEXCELL SOUND TESTING

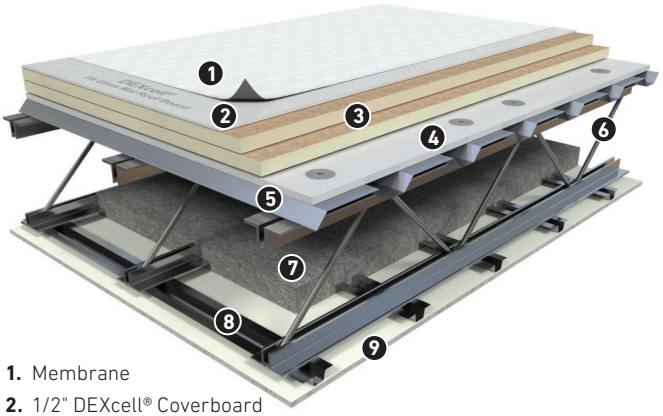
	Above Deck				Below Deck					
Interior Ceiling	**Under-Layment**	**Insulation**	**Coverboard**	**Membrane**	**Insulation**	**Hat Channel**	**R/C Channel**	**Suspended Ceiling**	**Ceiling Board**	**Tested STC**
None	5/8" DEX	3" ISO	1/2" DEX	EPDM	—	—	—	—	1/2" C	36
1/2" C, Hat Channel	5/8" DEX	3" ISO	1/2" DEX	EPDM	R13	Yes	—	—	1/2" C	56
1/2" C, Hat Channel	5/8" DEX	3" ISO	1/2" DEX	Mod Bit	R13	Yes	—	—	1/2" C	57
1/2" C, Res. Channel	5/8" DEX	3" ISO	1/2" DEX	EPDM	R13	Yes	Yes	—	1/2" C	57
1/2" C, Res. Channel	5/8" DEX	3" ISO	1/2" DEX	Mod Bit	R13	Yes	Yes	—	1/2" C	58
1/2" C, Res. Channel	5/8" DEX	3" ISO	2 x 1/4" DEX	EPDM	R13	Yes	Yes	—	1/2" C	57
Suspended Ceiling	5/8" DEX	3" ISO	1/2" DEX	EPDM	R13	—	—	C & Hat C.	1/2" C	57
Suspended Ceiling	5/8" DEX	3" ISO	1/2" DEX	EPDM	R13	—	—	C & Hat C.	1/2" C (x2)	59
Suspended Ceiling	5/8" DEX	3" ISO	1/2" DEX	EPDM	5.5" Mineral Wool	—	—	C & Hat C.	5/8" X (x2)	61

OPEN JOISTS – STC 36 / OITC 27



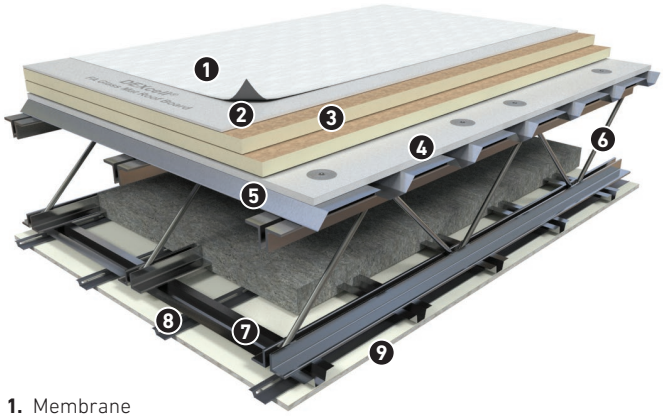
1. Membrane
2. 1/2" DEXcell® Coverboard
3. Rigid Foam Insulation, 3" Min.
4. 5/8" DEXcell® Roof Board (Thermal Barrier Underlayment)
5. Steel Deck
6. Steel Truss

HAT CHANNEL – STC 56 / OITC 44



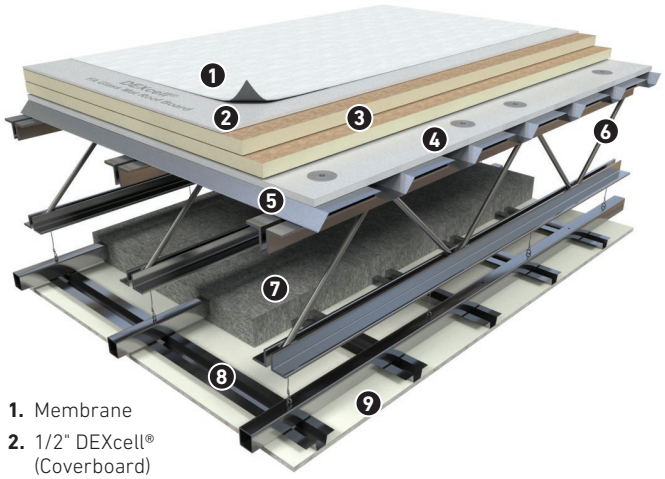
1. Membrane
2. 1/2" DEXcell® Coverboard
3. Rigid Foam Insulation, 3" Min.
4. 5/8" DEXcell® Roof Board (Thermal Barrier Underlayment)
5. Steel Deck
6. Steel Truss
7. Fiberglass Batt Insulation, R13
8. Hat Channel
9. Type C Gypsum Board, 1/2" Min.

HAT RC 1 – STC 57 / OITC 46



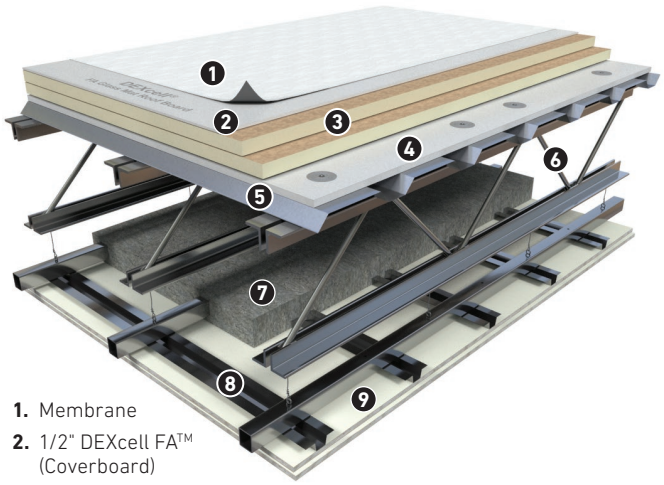
1. Membrane
2. 1/2" DEXcell FA™ (Coverboard)
3. Rigid Foam Insulation, 3" Min.
4. 5/8" DEXcell® Roof Board (Thermal Barrier Underlayment)
5. Steel Deck
6. Steel Truss
7. Hat Channel
8. RC Channel
9. Type C Gypsum Board, 1/2" Min.

SUSPENDED CEILING HC 1 – STC 57 / OITC 46



1. Membrane
2. 1/2" DEXcell® (Coverboard)
3. Rigid Foam Insulation, 3" Min.
4. 5/8" DEXcell® Roof Board (Thermal Barrier Underlayment)
5. Steel Deck
6. Steel Truss
7. Fiberglass Batt Insulation
8. Hat Channel
9. Type C Gypsum Board, 1/2" Min.

SUSPENDED CEILING HC 2 – STC 61 / OITC 50



1. Membrane
2. 1/2" DEXcell FA™ (Coverboard)
3. Rigid Foam Insulation, 3" Min.
4. 5/8" DEXcell® Roof Board (Thermal Barrier Underlayment)
5. Steel Deck
6. Steel Truss
7. Batt Insulation, 5-1/2" Mineral Wool
8. Hat Channel
9. 2 Layers of 5/8" Type X Gypsum Board

Notes

Notes

Notes

Customer Service Sales Areas and Contact Information

Atlantic Area
(800) 237-9167
atlanticareacsrs@nationalgypsum.com

Central Area
(800) 252-1065
centralareacsrs@nationalgypsum.com

Gulf Area
(800) 343-4893
gulfareacsrs@nationalgypsum.com

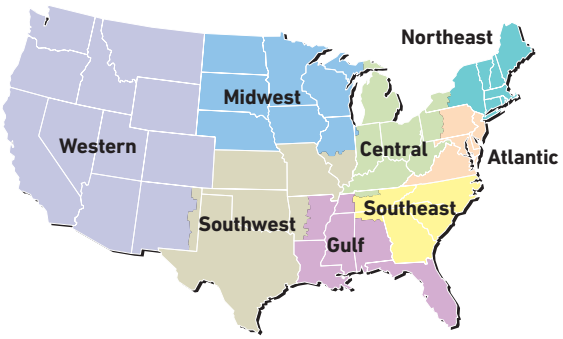
Midwest Area
(800) 323-1447
midwestareacsrs@nationalgypsum.com

Northeast Area
(800) 253-3161
northeastareacsrs@nationalgypsum.com

Southeast Area
(800) 548-9394
southeastareacsrs@nationalgypsum.com

Southwest Area
(800) 548-9396
southwestareacsrs@nationalgypsum.com

Western Area
(800) 824-4227
westernareacsrs@nationalgypsum.com



Limited Warranty and Remedies

Products manufactured by Gold Bond Building Products, LLC, ProForm Finishing Products, LLC, PermaBASE Building Products, LLC (each a "Seller"), are warranted by Seller to its customers to be free from defects in materials and workmanship at the time of shipment. Additional or different express limited warranties, limitations and exclusions may apply to specific Seller products.

Current warranty information on such products for both commercial and residential applications is available at **nationalgypsum.com**.

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- FM Global® is a registered trademark of Factory Mutual Insurance Company.
- ICC-ES® is a registered trademark of the International Code Council.
- NFPA® is a registered trademark of the National Fire Protection Association, Inc.
- The color PINK for insulation is a registered trademark of Owens Corning. Used by permission.
- SPORGARD® is a registered trademark of LANXESS Deutschland GmbH, Germany.
- UL® is a registered trademark of UL LLC.

Additional Sources of Information

The following websites provide information and recommendations for treating mold growth; other sites also provide similar suggestions.

- California Indoor Air Quality Program: **ww2.arb.ca.gov/our-work/topics/indoor-air-quality-exposure**
- Federal Emergency Management Agency: **fema.gov**
- New York City Department of Health: **www1.nyc.gov/assets/doh/downloads/pdf/epi/epi-mold-guidelines.pdf**
- U.S. Environmental Protection Agency: **epa.gov/mold**

Please note, as of October 31, 2022, the information contained is accurate in all material respects. For the most current version of National Gypsum technical information, visit: **nationalgypsum.com**

National Gypsum Company
2100 Rexford Road
Charlotte, NC 28211

Phone: 704.365.7300
nationalgypsum.com

Technical information
1.800.NATIONAL
1.800.628.4662

National Gypsum®

Exclusive service provider for products manufactured by Gold Bond Building Products, LLC, ProForm Finishing Products, LLC and PermaBASE Building Products, LLC.

102171 10/22