



USG SECUROCK® BRAND

Portfolio Overview



USG LEADING THE BUILDING MATERIALS INDUSTRY

FOR THE MOST UP-TO-DATE INFORMATION, VISIT USG.COM.

For more than 100 years, USG has been a leader in producing innovative products and systems to build the environments in which we live, work and play. As the inventor of wallboard and mineral wool ceiling tile, USG helped create North America's building materials industry. Our flagship brands are recognized around the world and include USG Securock® Brand high-performance roof board, USG Sheetrock® Brand gypsum panels, USG Durock® Brand cement board and USG Donn® Brand suspension systems.

USG is North America's leading producer of gypsum wallboard, joint compound and a vast array of related products for the construction and remodeling industries. We are also a leader in the manufacture of ceiling suspension systems and are widely recognized for our premier acoustical panels and specialty ceiling systems. Our family of products provides creative building solutions that set new standards for productivity and efficiency, helping contractors and architects deliver high-quality and innovative designs. This same level of dedication has gone into creating a portfolio of high-performing roofing products.

Our steadfast dedication to the company's core business beliefs—integrity, safety, performance, quality, diversity, innovation and service—has helped us consistently manufacture the quality products that you expect, backed by the service and support you can depend upon. Our commitment to the roofing industry is to deliver a selection of high-quality and high-performing products that give roofing professionals a better choice in the roof board category.

USG OFFERS A BETTER CHOICE

USG Securock®
Brand Gypsum-Fiber
Roof Board



A high-performance, versatile board that uses advanced fiber-reinforced technology for a uniform and durable product, this particular roof board is ideal for all types of adhered roofing systems including single-ply, fluid-applied, built-up, spray foam, metal and modified bitumen roofing.

MOISTURE AND MOLD RESISTANT

- Homogeneous composition provides uniform water resistance throughout the panel
 - Scores a 10 on ASTM D3273—the highest for mold resistance
-

SUPERIOR BOND

- Independent testing shows exceptional adhesion in fully adhered systems
 - Excellent wind-uplift performance
-

OUTSTANDING PERFORMANCE

- No face layer to delaminate
 - High-density board stands up to foot traffic and hail
 - Extremely low absorption can reduce adhesive use and significantly decrease installation costs
-

QUICK INSTALLATION

- Easy to cut
 - Itch-free
-

ENVIRONMENTALLY FRIENDLY

- Made from 97 percent recycled materials
 - Independently certified by Scientific Certification Systems
 - Independently certified for low VOC Emissions by Berkeley Analytical
-

CHOICE

- 4'x4' and 4'x8' boards available in 1/4", 3/8", 1/2" and 5/8" thicknesses



USG OFFERS A BETTER CHOICE

USG Securock®
Brand Glass-Mat
Roof Board



A high-performance, non-combustible, moisture and mold resistant roof board that is ideal for use in mechanically attached, fire barrier and thermal barrier applications. It enhances the durability of the entire roofing system when used as cover board in single-ply mechanically attached systems and has several performance and handling attributes that make it superior to competitive products.

EXCEPTIONAL HANDLING AND INSTALLATION

- A high-quality tight mat creates less itch when handling and cutting versus Georgia-Pacific DensDeck® roof board
 - Increased mat-to-core tensile bond strength makes it less likely to delaminate when cutting
 - Scores and snaps cleanly and easily
-

OUTSTANDING PERFORMANCE

- Provides protection to roof system from foot traffic and hail
 - Greater mat-to-core tensile bond strength than Georgia-Pacific DensDeck roof board
 - Meets Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications per UL 790
-

EXCELLENT MOISTURE AND MOLD RESISTANCE

- Fiberglass face and back with treated core resists moisture and mold
 - Scores a 10 on ASTM D3273—the highest for mold resistance
-

CHOICE

- 4'x8' boards available in 1/4", 1/2" and 5/8" thicknesses



USG OFFERS A BETTER CHOICE

USG Securock®
Brand Cement
Roof Board



A high-performance, non-combustible, moisture and mold resistant roof board that uses cement technology for all types of roofing systems including fluid applied, built-up, spray foam, metal, modified bitumen roofing and single ply. As a fire barrier, thermal barrier, cover board, recover board, or parapet wall, it enhances the durability of the entire roofing system.

MOISTURE AND MOLD RESISTANT

- Cement technology provides water resistance throughout panel
 - Scores a 10 on ASTM D3273—the highest for mold resistance
-

SUPERIOR BOND

- Better adhesion for systems like fluid applied
 - Excellent wind-uplift performance
-

OUTSTANDING PERFORMANCE

- No face layer to delaminate
 - High-density board stands up to foot traffic and hail
 - Meets Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications per UL 790
-

QUICK INSTALLATION

- Scores and Snaps cleanly and easily
 - Itch-free
-

CHOICE

- 4'x4' and 4'x8' boards available in 1/2" thickness



USG OFFERS A BETTER CHOICE

USG Securock® Brand Gypsum- Concrete Patch



A high-performance patch solution for poured-in-place roof decks such as gypsum roof decks and lightweight insulating concrete surfaces. USG Securock Gypsum-Concrete Patch is non-combustible, easy to use and offers versatility for repairing many types of decks.

OUTSTANDING PERFORMANCE

- Over 500 psi compressive strength
 - Non-combustible
 - Feather-edge where needed
 - Used in several UL rated systems
-

QUICK INSTALLATION

- Easy to mix and pour
 - Ready to accept foot traffic and fasteners within 4 hours of application
-

CHOICE

- 50 pound bags



USG SECUROCK® BRAND ROOF BOARD PORTFOLIO

Choosing the
right board

USG Securock® Brand Gypsum-Fiber roof board outperforms the competition and is made from 97 percent recycled material. USG Securock® Brand Glass-Mat roof board meets stringent industry performance requirements and specifications while being easier to handle than competitive glass-mat roof boards. USG Securock® Brand Cement roof board, the lightest cement board in the industry, is ideal for use as a cover board in system applications such as liquid-applied membranes or as a parapet, fire or thermal barrier roof board.

All USG Securock roof board comes with the customer service, flexibility and responsiveness that only USG can deliver. All of this adds up to a roof board portfolio that goes above and beyond to meet the needs of any application.

APPLICATIONS	USG SECUROCK GYPSUM-FIBER ROOF BOARD	USG SECUROCK GLASS-MAT ROOF BOARD	USG SECUROCK CEMENT ROOF BOARD
Single ply mechanically attached	Acceptable	Recommended	Acceptable
Single ply fully adhered	Recommended	Not Recommended	Acceptable
Modified Bitumen torch applied	Recommended	Not Recommended	Recommended
Modified Bitumen cold applied	Recommended	Not Recommended	Recommended
Modified Bitumen hot mopped	Recommended	Not Recommended	Recommended
Built up roof	Recommended	Not Recommended	Recommended
Built up roof hybrid	Recommended	Not Recommended	Recommended
Self adhered	Recommended	Not Recommended	Acceptable
Spray foam	Recommended	Not Recommended	Recommended
Thermal barrier	Acceptable	Recommended	Recommended
Fire barrier	Acceptable	Recommended	Recommended
Vapor barrier substrate	Acceptable	Recommended	Recommended

PRODUCT INFORMATION

See usg.com for the most up-to-date product information.

TRADEMARKS

The trademarks USG, DONN, DUROCK, SECUROCK, SHEETROCK, IT'S YOUR WORLD. BUILD IT., THE USG LOGO, and related marks are trademarks of USG Corporation or its affiliates.

NOTE

Products described here may not be available in all geographic markets.

NOTICE

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

SAFETY FIRST!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protection equipment. Read MSDS and literature before specification and installation.

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USG
IT'S YOUR WORLD. BUILD IT.™



Roof Board

USG Securock® Brand Gypsum-Fiber Roof Board



High-performance gypsum-fiber roof board for use in low-slope commercial roofing systems

- Exceptional bond and low absorption in adhered systems
- Moisture and mold resistant
- Excellent wind-uplift performance
- Manufactured from 97% recycled material

Description

USG Securock® Gypsum-Fiber Roof Board is a high-performance roof board for use in low-slope roofing systems. Its unique, fiber-reinforced, homogenous composition gives the panel strength and water resistance through to the core. USG Securock Gypsum-Fiber Roof Board provides exceptional bond and low absorption in adhered systems and with its homogenous composition achieves high wind-uplift ratings with no risk of facer delamination. Made from 97% recycled material, USG Securock Gypsum-Fiber Roof Board combines superior performance with sustainable design for all types of roofing systems including single-ply, fluid-applied, built-up, spray foam, metal and modified bitumen roofing.

Advantages

Exceptional Strength Engineered to provide superior wind-uplift performance for a wide variety of roof assemblies. USG Securock Gypsum-Fiber Roof Board has uniform composition providing enhanced bond strength of membrane systems with no risk of facer delamination.

Fire Performance Provides excellent fire performance and demonstrates exceptional surface burning characteristics (ASTM E84 (CAN/ULC-S102) Flame Spread 5, Smoke Developed 0).

Moisture and Mold Uniform water-resistant core ensures excellent moisture and mold resistance. Scored a maximum "10" for mold resistance on ASTM D3273.

Versatile Can be used as a component in single-ply, fluid-applied, built-up, spray foam, metal and modified bitumen roofing.

Sustainability Made from 97% recycled materials and has earned independent certification from Scientific Certification Systems for this achievement.

Limitations

- USG Securock Gypsum-Fiber Roof Board is engineered to perform within a properly designed roof system. The use of USG Securock Gypsum-Fiber Roof Board as a roofing component is the responsibility of the design professional.
- Consult roofing manufacturers for specific instructions on the application of their products to USG Securock Gypsum-Fiber Roof Board
- Weather conditions, dew, application temperature, installation techniques and moisture drive can have adverse effects on the performance of the roof system and are beyond the control of USG.
- Keep USG Securock Gypsum-Fiber Roof Board panels dry before, during and after installation. USG Securock Gypsum-Fiber Roof Board should not be installed during rains, heavy fogs and any other conditions that deposit moisture on the surface of the board. Apply only as much USG Securock Gypsum-Fiber Roof Board that can be covered by final roof membrane system in the same day. Avoid exposure to moisture from leaks or condensation.
- For re-roof or re-cover applications, existing roofing system must be dry throughout prior to application of USG Securock Gypsum-Fiber Roof Board.
- Plastic or poly packaging applied at the plant to protect board during rail or other transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- USG Securock Gypsum-Fiber Roof Board should be stored flat and off the ground with protection from the weather. If stored outdoors, a breathable waterproof covering should be used.
- When applying solvent-based adhesives or primers, allow sufficient time for the solvent to evaporate to avoid damage to roofing components.
- USG allows the bonding of cold mastic modified bitumen and torching directly to the surface. Consult with the system manufacturer for recommendations on this application.
- USG recommends maximum asphalt application temperature for Type III asphalt of 455 °F when using USG Securock Gypsum-Fiber Roof Board. Application temperatures above these recommended temperatures may adversely affect roof system performance.

Installation

- Refer to roof system manufacturer's written instructions, local code requirements and Factory Mutual Global (FMG) and/or Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners specified in accordance with above requirements. Install approved fasteners with plates into the USG Securock Gypsum-Fiber Roof Board, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29. Proper fastener spacing is essential to achieve wind-uplift performance.



- Locate edge joints on, and parallel to, deck ribs. Stagger end joints of adjacent lengths of USG Securock Gypsum-Fiber Roof Board. Butt board edges and ends loosely in typical installations.
- Butt board edges and ends loosely (minimum 1/16" gap on all edges) in typical installations. This gap may need to be larger depending on factors like the roof deck's size, membrane color, ultimate deck surface temperature and time of year the roof assembly is installed. Installations during temperatures below 50°F may require larger spacing. Please refer to USG's published physical properties below to calculate the actual gap needed for your specific project for all thicknesses.
- Roof boards should never be installed frozen.
- See product data table below for maximum flute span when panels are applied directly over metal decking.
- For vertical parapet applications, only 1/2" or 5/8" panels should be used. Maximum framing spacing is 24" o.c.

Fire Performance

- UL Classified as to Surface Burning Characteristics and Non-Combustability in accordance with ASTM E84 (CAN/ULC-S102)
 - Flame Spread 5 and Smoke Developed 0
- 1/4", 3/8", 1/2" and 5/8" Thickness — Class A in accordance with UL790 (CAN/ULC-S107). See the UL Building Materials Directory for more information.
- 5/8" Thickness — Meets requirements of Type X per ASTM C1278 and may be used in P series designs as a thermal barrier.

System Performance

- FM Approved
 - Complies with requirements of FM 4450 and FM 4470
 - Meets FM Class 1

Standards Compliance

USG Securock Gypsum-Fiber Roof Board is manufactured to conform to ASTM C1278, "Standard Specification for Fiber-Reinforced Gypsum Panel."

Physical Properties

	USG Securock Gypsum-Fiber Roof Board			
	1/4" (6.6 mm)	3/8" (9.5 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Width, standard	4' (1220 mm)	4' (1220 mm)	4' (1220 mm)	4' (1220 mm)
Length, standard	4' (1220 mm) and 8' (2440 mm)	4' (1220 mm) and 8' (2440 mm)	4' (1220 mm) and 8' (2440 mm)	4' (1220 mm) and 8' (2440 mm)
Pieces per unit for 4' x 8' sheets	50	40	30	24
Weight, nominal lbs./unit, 4' x 8' sheet	2,575	2,575	2,725	2,525
Weight, nominal lbs./sq. ft.	1.57	1.96	2.76	3.20
Flexural strength, parallel, lbs. min., per ASTM C 473	40	70	110	161
Compressive strength, psi nominal	1800	1800	1800	1800
Flute spanability per ASTM E 661	2-5/8"	5"	8"	10"
Permeance, perms, per ASTM E 96	30	26	26	24
R Value per ASTM C 518	0.2	0.3	0.5	0.6
Coefficient of thermal expansion, inches/inch • °F, per ASTM E 831	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶
Linear variation with change in moisture, inches/inch • %RH, per ASTM D 1037	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶	8.0 x 10 ⁻⁶
Water absorption, % max, per ASTM C 473	10	10	10	10
Surface water absorption, nominal grams, per ASTM C 473	1.6	1.6	1.6	1.6
Mold resistance per ASTM D 3273*	10	10	10	10
Bending Radius	25'	25'	25'	30'

*ASTMD3273 Mold Resistance Testing - In independent lab tests conducted on USG Securock Gypsum-Fiber Roof Board and USG Securock Glass-Mat Roof Board at the time of manufacture per ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber, both panels scored a 10. The ASTM lab test may not accurately represent the mold performance of building materials in actual use. Given unsuitable project conditions during storage, installation or after completion, any building material can be overwhelmed by mold. To manage the growth of mold, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation and after completion of the building. This can be accomplished by using good design and construction practices.

Submittal Approvals:

Job Name	
Contractor	Date

Product Information

See usg.com for the most up-to-date product information.

Trademarks

The trademarks Securock®, the USG Logo™ and related marks are trademarks of USG Corporation or its subsidiaries or affiliates.

Note

Products described here may not be available in all geographic markets. Consult your U.S. Gypsum Company sales office or representative for information.

Notice

We shall not be liable for incidental or consequential damages, directly or indirectly

sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than their intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from the date it was or reasonably should have been discovered.

Safety First!

Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.



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SECUROCK® Glass-Mat Roof Board



High-performance glass-mat roof board for use in low-slope commercial roofing systems

- Ideal for use as cover board in single-ply mechanically attached systems
- Moisture and mold resistant core and facer
- Provides protection to roof system from hail and foot traffic
- Fire resistant for use as fire barrier and thermal barrier
- Unmatched mat-to-core tensile bond strength makes facer less likely to delaminate when cutting.
- High-quality tight mat makes for easier handling and cutting.

Description

SECUROCK® Glass-Mat roof board is a high-performance roof board for use in low-slope commercial roofing systems. It enhances the durability of the entire roofing system when used as cover board in single-ply mechanically attached systems. Its specially treated core and high-performance glass-mat facer provide protection against fire, mold and moisture.

Advantages

Fire Performance Meets Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications per UL 790.
Easier to cut, handle and install High-quality mat produces less itchiness than competitive products.
Moisture and Mold Fiberglass face and back with treated core provides moisture and mold resistance. Scored a maximum “10” for mold resistance on ASTM D3273.

Limitations

- SECUROCK Glass-Mat roof board is engineered to perform within a properly designed roof system. The use of SECUROCK Glass-Mat roof board as a roofing component is the responsibility of the design professional.
- Consult roofing manufacturers for specific instructions on the application of their products to SECUROCK Glass-Mat roof board.
- Weather conditions, dew, application temperature, installation techniques and moisture drive can have adverse effects on the performance of the roof system and are beyond the control of USG.
- Keep SECUROCK Glass-Mat roof board panels dry before, during and after installation. SECUROCK Glass-Mat roof board should not be installed during rains, heavy fogs and any other conditions that deposit moisture on the surface of the board. Apply only as much SECUROCK Glass-Mat roof board that can be covered by final roof membrane system in the same day. Avoid exposure to moisture from leaks or condensation.
- For re-roof or re-cover applications, existing roofing system must be dry throughout prior to application of SECUROCK Glass-Mat roof board.
- Plastic or poly packaging applied at the plant to protect board during rail or other transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- SECUROCK Glass-Mat roof board should be stored flat and off the ground with protection from the weather. If stored outdoors, a breathable waterproof covering should be used.
- For systems not listed, please contact your local USG SECUROCK roofing sales representative.

Installation

- Refer to roof system manufacturer’s written instructions, local code requirements and Factory Mutual Global (FMG) and/or Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners specified in accordance with above requirements. Install approved fasteners with plates into the SECUROCK Glass-Mat roof board, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer’s installation recommendations and FMG Loss Prevention Data Sheet 1-29. Proper fastener spacing is essential to achieve wind-uplift performance.
- Locate edge joints on, and parallel to, deck ribs. Stagger end joints of adjacent lengths of SECUROCK Glass-Mat roof board. Butt board edges and ends loosely in typical installations. Long, uninterrupted runs (greater than 200 feet) of SECUROCK Glass-Mat roof board may require slight gapping due to thermal expansion.
- See product data table for maximum flute span when panels are applied directly over metal decking.
- For vertical parapet applications, only 1/2" or 5/8" panels should be used. Maximum framing spacing is 24" o.c.

Performance

- UL Classified as to Surface Burning Characteristics and Non-Combustibility in accordance with ASTM E84 & E136 (CAN/ULC-S102 & S114).
 - Flame Spread 0 and Smoke Developed 0
 - Non-Combustible Core
- 1/4", 1/2" and 5/8" Thickness — Class A unlimited slope in accordance with UL790 (CAN/ULC-S107).
- 5/8" Thickness — Meets requirements of Type X per ASTM C1177 and may be used in P series designs as a thermal barrier.

System Performance

- FM Approved
- Complies with requirements of FM 4450 and FM 4470
- Meets FM Class 1

Standards Compliance SECUROCK Glass-Mat roof board is manufactured to conform to ASTM C1177.

Physical Properties	SECUROCK Glass-Mat Roof Board		
	1/4" (7.4 mm)	1/2" (12.7mm)	5/8" (15.9 mm)
Width, standard	4' (1220 mm)	4' (1220 mm)	4' (1220 mm)
Length, standard	8' (2440 mm)	8' (2440 mm)	8' (2440 mm)
Pieces per unit for 4' x 8' sheet	42	30	30
Weight, nominal lbs./unit 4' x 8' sheet	1688	1995	2667
Weight, nominal lbs./sq. ft.	1.2	2.0	2.7
Flexural strength, parallel, lbs. min. per ASTM C473	40	80	100
Compressive strength, psi nominal	700-1000	700-1000	700-1000
Flute spannability per ASTM E661	2-5/8"	5"	8"
Permeance, perms per ASTM E96	18	18	16
R Value per ASTM C518	0.36	0.53	0.54
Coefficient of thermal expansion, inches/inch • °F, per ASTM E831	8.5×10^{-6}	8.5×10^{-6}	8.5×10^{-6}
Linear variation with change in moisture, inches/inch • %RH, per ASTM D1037	6.3×10^{-6}	6.3×10^{-6}	6.3×10^{-6}
Water absorption, % max, per ASTM C473	10	10	10
Mold resistance per ASTM D3273*	10	10	10
Bending Radius	4'	6'	9'

*ASTM D3273 Mold Resistance Testing - In independent lab tests conducted on Securock Gypsum-Fiber roof board and Securock Glass-Mat roof board at the time of manufacture per ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber, both panels scored a 10. The ASTM lab test may not accurately represent the mold performance of building materials in actual use. Given unsuitable project conditions during storage, installation or after completion, any building material can be overwhelmed by mold. To manage the growth of mold, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation and after completion of the building. This can be accomplished by using good design and construction practices.

Submittal Approvals:	Job Name
	Contractor Date

Product Information
See usg.com for the most up-to-date product information.

Trademarks
The following trademarks used herein are owned by United States Gypsum Company or a related company: SECUROCK, USG, USG in stylized letters.

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Notice
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personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.



SECUROCK[®] Cement Roof Board



- Ideal for use as a cover board in system applications such as liquid-applied membranes or as a parapet, fire, or thermal barrier roof board
- Lightest cement board in the industry
- Environmentally sustainable product — lower weight reduces embodied energy and embodied emissions
- Water-durable, mold-resistant substrate
- Will not rot, warp, delaminate or disintegrate
- Easy to cut and fasten
- Non combustible

Description

SECUROCK[®] Cement Roof Board is a high performance roof board for use in low-slope roofing systems. As the lightest and easiest to use cement board in the industry, it enhances the entire roofing system as both a cover board and as a parapet, fire, or thermal barrier roof board. As a cover board, SECUROCK Cement Roof Board can be used with a variety of membranes and systems including fully adhered and mechanically attached systems, but it is ideal for applications such as liquid-applied membranes and cold mastic modified bitumen. As a parapet, fire, or thermal barrier roof board, SECUROCK Cement Roof Board has an unlimited slope classification and is non combustible. Because this product is cement based, it provides superior compressive strength, water durability and mold resistance.

Advantages

Exceptional Strength	Engineered to provide superior wind-uplift performance for a wide variety of roof assemblies. SECUROCK Cement Roof Board is formed in a continuous process using an aggregated portland cement slurry with polymer-coated, glass-fiber mesh completely encompassing edges and both surfaces, which enhances bond strength of membrane systems and gives excellent resistance to delamination.
Fire Performance	Meets Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications per UL 790.
Moisture and Mold	Scored a maximum "10" for mold resistance on ASTM D3273 and is highly water durable.
Versatile	Can be used as a component in single-ply, fluid-applied, spray foam, built-up, metal and modified bitumen roofing. Comes in both 4x8 and 4x4 sizes.

Limitations

- SECUROCK Cement Roof Board is engineered to perform within a properly designed roof system. The use of SECUROCK Cement Roof Board as a roofing component is the responsibility of the design professional.
- Consult roofing manufacturers for specific instructions on the application of their products to SECUROCK Cement Roof Board.
- Weather conditions, dew, application temperature, installation techniques and moisture drive can have adverse effects on the performance of the roof system and are beyond the control of USG.
- Keep SECUROCK Cement Roof Board panels dry before, during and after installation. SECUROCK Cement Roof Board should not be installed during rains, heavy fogs and any other conditions that deposit moisture on the surface of the board. Apply only as much SECUROCK Cement Roof Board that can be covered by final roof membrane system in the same day. Avoid exposure to moisture from leaks or condensation.
- For re-roof or re-cover applications, existing roofing system must be dry throughout prior to application of SECUROCK Cement Roof Board.
- Plastic or poly packaging applied at the plant to protect board during rail or other transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- SECUROCK Cement Roof Board should be stored flat and off the ground with protection from the weather. Preferred storage location is an enclosed shelter providing protection from the elements; however, if stored outdoors, a breathable waterproof covering should be used.
- When applying solvent-based adhesives or primers, allow sufficient time for the solvent to evaporate to avoid damage to roofing components.
- Consult with the system manufacturer for recommendations on all applications.
- SECUROCK Cement Roof Board is formulated to develop fine micro-cracking (also called as multiple-cracking) in the panel. The micro-cracking process helps to evenly relieve the stored strain energy in the product due to handling and installation, external loads, and/or panel restrained movement. The presence of micro-cracks in the panel should not be considered a product defect.
- USG recommends maximum asphalt application temperature for Type III asphalt of 450°F when using SECUROCK Cement Roof Board. Application temperatures above these recommended temperatures may adversely affect roof system performance.

Installation

- Refer to roof system manufacturer's written instructions, local code requirements and Factory Mutual Global (FMG) and/or Underwriters Laboratories (UL) requirements for proper installation techniques.
- Use fasteners specified in accordance with above requirements. Install approved fasteners with plates into the SECURock Cement Roof Board, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29. Proper fastener spacing is essential to achieve wind-uplift performance.
- Locate edge joints on, and parallel to, deck ribs. Stagger end joints of adjacent lengths of SECURock Cement Roof Board. Butt board edges and ends loosely in typical installations. Long, uninterrupted runs (greater than 200 feet) of SECURock Cement Roof Board will require slight gapping due to thermal expansion.
- See product data table below for maximum flute span when panels are applied directly over metal decking.
- For vertical parapet applications – maximum stud spacing: 16" o.c., maximum fastener spacing: 8" o.c. for wood and steel framing. Always consult a design professional for actual spacing.
- Only use corrosion-resistant fasteners that are compatible with concrete. Approved fasteners include: DUROCK® tile backer screws for steel framing (or equivalent), 1-1/4" and 1-5/8" for 14- to 20-gauge steel framing; DUROCK tile backer screws for wood framing (or equivalent), 1-1/4", 1-5/8", and 2-1/4" for wood framing. Nails (1-1/2" hot-dipped galvanized roofing nails).

Fire Performance

- UL Classified as to Surface Burning Characteristics and Noncombustibility in accordance with ASTM E84 & E136 (CAN/ULC-S102 & S114).
 - Flame Spread 0 and Smoke Developed 0
 - Noncombustible

- Class A unlimited slope in accordance with UL790 (CAN/ULC-S107). See the UL Building Materials Directory for more information.

System Performance

- FM Approved
- Complies with requirements of FM 4450 and FM 4470
- Meets FM Class 1

Standards Compliance

SECURock Cement Roof Board is manufactured to conform to ASTM C1325, "Standard for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units".

Physical Properties

SECURock Cement Roof Board

Thickness, nominal	½ in. (12.7 mm)
Width, standard	4 ft. (1220 mm)
Length, standard	4 ft. (1220 mm), 8 ft. (2440 mm)
Pieces per unit	60/30
Weight, nominal lbs./unit	2375
Weight, nominal lbs./sq. ft.	2.4
Flexural strength, parallel, psi, per ASTM C 947	>750
Compressive strength, psi nominal	>1000
Flute spanability per ASTM E 661	12 in.
Permeance, perms, per ASTM E 96	5.84
R Value, °F.ft ² .h/Btu, per ASTM C 518	0.39
Coefficient of thermal expansion, inches/inch/°F, per ASTM E 831	4.5 x 10 ⁶
Linear variation with change in moisture, %, per ASTM D 1037	<0.07
Water absorption, % max, per ASTM C 473	<15
Mold resistance, per ASTM D 3273*	10
Minimum Bending Radius	6 ft. (1.83 m)

*ASTM D3273 Mold Resistance Testing - In independent lab tests conducted on SECURock Cement Roof Board at the time of manufacture per ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber, scored a 10. The ASTM lab test may not accurately represent the mold performance of building materials in actual use. Given unsuitable project conditions during storage, installation or after completion, any building material can be overwhelmed by mold. To manage the growth of mold, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation and after completion of the building. This can be accomplished by using good design and construction practices.

Product Information

See usg.com for the most up-to-date product information.

Warning

Dust can contain silica. Prolonged and repeated breathing of silica dust can cause lung damage and cancer. If cutting with a power tool, use a wet or vacuum saw to reduce the amount of dust generated. Dust can be corrosive to eyes, skin, and respiratory tract.

Contact can cause severe chemical burns. Wear eye, skin and respiratory protection. If eye contact occurs, flush immediately with water for 30 minutes. If ingested, call physician. Product safety information: 800-507-8899 or usg.com Customer Service: 800 USG-4-YOU (800 874-4968). **KEEP OUT OF REACH OF CHILDREN.**

Trademarks

The following trademarks are owned by United States Gypsum Company or its related companies: DUROCK, SECURock, USG and USG in stylized letters.

Note

Products described here may not be available in all geographic markets. Consult your United States Gypsum Company sales office or representative for information.

Notice

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in

writing to us within thirty (30) days from date it was or reasonably should have been discovered.

Safety First!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read MSDS and literature before specification and installation.



SECUROCK® High-Performance Roof Boards

USG has a full range of high-performance roof board products, giving consumers a choice in the roof board industry.

SECUROCK Gypsum-Fiber roof board outperforms the competition and is made from 95 percent recycled material. SECUROCK Glass-Mat roof board meets the stringent performance requirements and specifications of competitive glass-mat roof boards while being easier to handle. Plus, both boards come with the customer service, flexibility and responsiveness that only USG can deliver. All of this adds up to a roof board portfolio that goes above and beyond the competition.

SECUROCK Glass-Mat Roof Board

Performance	1/4" SECUROCK Glass-Mat	1/4" DENSDECK ¹	1/2" SECUROCK Glass-Mat	1/2" DENSDECK ¹	5/8" SECUROCK Glass-Mat	5/8" DENSDECK ¹
Compressive strength, psi	700-1000	900	700-1000	900	700-1000	900
Flute span	2-5/8"	2-5/8"	5"	5"	8"	8"
Bending radius	4'	5'	6'	8'	9'	12'
Flexural strength, Method B, parallel, lbf. min. per ASTM C473	40	40	80	80	100	100
Permeance, perms	18	50	18	35	16	32
Water absorption, % max, per ASTM C473	10	10	10	10	10	10
Mold resistance per ASTM D3273*	10	10	10	10	10	10
ASTM Standard	C1177	C1177	C1177	C1177	C1177	C1177

SECUROCK Gypsum-Fiber Roof Board

Performance	1/4" SECUROCK Gypsum-Fiber	1/4" DENSDECK Prime ¹	3/8" SECUROCK Gypsum-Fiber	1/2" DENSDECK Prime ¹	1/2" SECUROCK Gypsum-Fiber	5/8" DENSDECK Prime ¹	5/8" SECUROCK Gypsum-Fiber
Compressive strength, psi	1800	900	1800	900	1800	900	1800
Flute span	2-5/8"	2-5/8"	5"	5"	8"	8"	10"
Flexural Strength, Method B, parallel, lbf. min. per ASTM C473	40	40	70	80	110	100	155
Nail pull resistance, min. lbs./ft.	80	40 ²	110	80 ²	120	90 ²	145
Water absorption, % max, per ASTM C473	10	10	10	10	10	10	10
Mold resistance per ASTM D3273*	10	10	10	10	10	10	10
ASTM Standard	C1278	C1177	C1278	C1177	C1278	C1177	C1278

***ASTM D3273 Mold Resistance Testing** - In independent lab tests conducted on Securock Gypsum-Fiber roof board and Securock Glass-Mat roof board at the time of manufacture per ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber, both panels scored a 10. The ASTM lab test may not accurately represent the mold performance of building materials in actual use. Given unsuitable project conditions during storage, installation or after completion, any building material can be overwhelmed by mold. To manage the growth of mold, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation and after completion of the building. This can be accomplished by using good design and construction practice.

A More Economical Product

When compared to DENSDECK products, SECUROCK Gypsum-Fiber roof board has better compressive strength and flute spannability. Testing confirms that you can substitute a 3/8" SECUROCK Gypsum-Fiber panel for other 1/2" products and still achieve superior performance.

Compressive Strength	psi				
	0	450	900	1350	1800
3/8" SECUROCK Gypsum-Fiber Roof Board					1800
1/2" DENSDECK Prime ¹			900		
Flute Spannability	Inches				
	1	2	3	4	5
3/8" SECUROCK Gypsum-Fiber Roof Board					5
1/2" DENSDECK Prime ¹					5

Easier Handling and Installation

- SECUROCK Glass-Mat roof board has a high quality glass-mat, making it less itchy and easier to work with. The high mat-to-core tensile bond strength also makes mat less likely to delaminate when cutting.
- SECUROCK Gypsum-Fiber roof board, with its homogenous composition of gypsum and cellulose fibers, does not require a glass-mat facer for strength. This makes the panel easy to handle with no itchiness.
- SECUROCK Gypsum-Fiber roof board is ideal for fully adhered applications. It achieves high bond strength without the use of an additional primer. It also has very low surface absorption, giving additional installed cost savings on labor and materials.
- SECUROCK Cement roof board is the lightest cement board in industry. Ideal for use as a cover board in system applications such as liquid-applied membranes or as a parapet, fire, or thermal barrier roof board. It's easy to cut and fasten and is noncombustible.

Best Choice for All Applications

SECUROCK high-performance roof boards go above and beyond to meet your needs for all applications.

Applications	SECUROCK Gypsum-Fiber Roof Board	SECUROCK Glass-Mat Roof Board	SECUROCK Cement Roof Board
Single ply mechanically attached	Acceptable	Recommended	Acceptable
Single ply fully adhered	Recommended	Not Recommended	Acceptable
Modified Bitumen torch applied	Recommended	Not Recommended	Recommended
Modified Bitumen cold applied	Recommended	Not Recommended	Recommended
Modified Bitumen hot mopped	Recommended	Not Recommended	Recommended
Built up roof	Recommended	Not Recommended	Recommended
Built up roof hybrid	Recommended	Not Recommended	Recommended
Self adhered	Recommended	Not Recommended	Acceptable
Spray foam	Recommended	Not Recommended	Recommended
Thermal barrier	Acceptable	Recommended	Recommended
Fire barrier	Acceptable	Recommended	Recommended
Vapor barrier substrate	Acceptable	Recommended	Recommended

Environmentally Friendly



SECUROCK Gypsum-Fiber roof board is the ideal choice for projects where high recycled content is a priority. It is manufactured from a combination of synthetic gypsum and cellulose fibers. Synthetic gypsum is a byproduct from electrical plants. It is indistinguishable from natural mined gypsum rock in performance and quality, and its use in SECUROCK Gypsum-Fiber roof board eliminates landfill waste. Likewise, the cellulose fibers are waste that are sourced locally from a packaging manufacturer. The final result is a high-performance roof board with over 95 percent recycled content, earning it Green Cross certification from Scientific Certification Systems.

¹ Georgia-Pacific DensDeck data taken from GP Lit. Item # 622602
² Minimum per ASTM C1177, Georgia Pacific DensDeck data not provided in Lit. Item #622602

Product Information

See usg.com for the most up-to-date product information.

Note

Products described here may not be available in all geographic markets. Consult your United States Gypsum Company sales office or representative for information.

Trademarks

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States Gypsum Company or a related company: SECUROCK, USG, USG in stylized letters, DENSDECK, DENSDECK PRIME, and DENSDECK DURAGUARD are registered trademarks of G-P Corporation. LEED is a registered trademark of U.S. Green Building Council.

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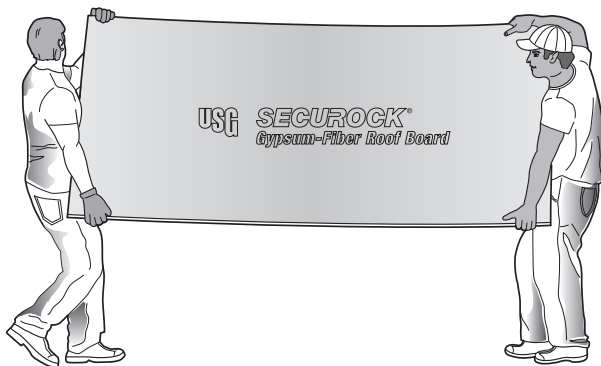
SECUROCK® Gypsum-Fiber Roof Board

Paneles para techados Gypsum-Fiber de SECUROCK®

Following the tips on this sheet can help you work faster and more safely with SECUROCK Gypsum-Fiber roof board. /Al seguir los consejos en esta hoja usted podría trabajar de una forma más rápida y segura usando paneles para techados Gypsum-Fiber de SECUROCK.

Handling Correctly/Manipulación correcta

Correct/Correcto



Panels should be held in an upright position. Avoid holding panels upright in windy conditions. /Los paneles deben sujetarse en posición vertical. En días airosos evite sostener los paneles verticalmente.

Incorrect/Incorrecto

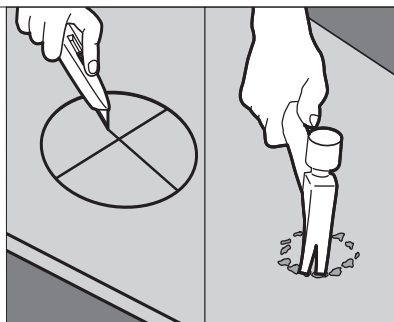


Holding panels incorrectly can result in breakage. /Al sujetar los paneles de manera incorrecta podría ocasionar que se rompan.

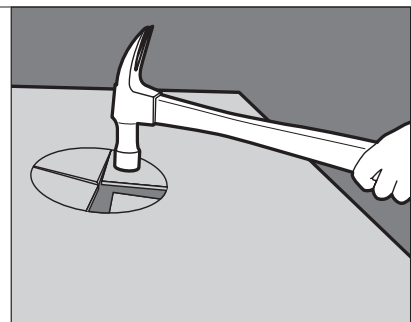
Cutting Penetrations/Penetraciones de corte



1. Lay the panel over a well-supported base such as insulation or another SECUROCK Gypsum-Fiber panel for support and to help prevent damage. /Coloque el panel sobre una base con suficiente apoyo tal como un panel de aislamiento u otro panel Gypsum-Fiber de SECUROCK de manera que ofrezca respaldo y ayudará a evitar daños.



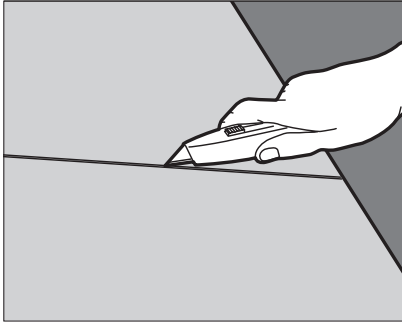
2. Score the penetration with a utility knife, then score an X in the center, or chisel out with a claw hammer. /Marque el área de penetración firmemente usando una navaja de uso general, luego haga una marca en forma de X en el centro, o talle el área usando un martillo sacaclavos.



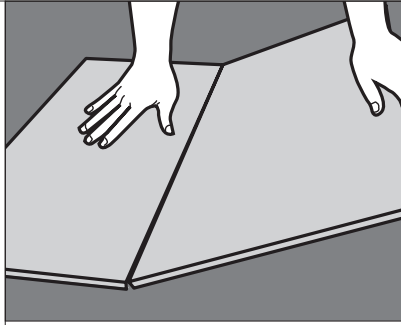
3. Punch out the hole with a hammer. /Perfore el orificio con un martillo.

Cutting Panels/Corte de los paneles

For 1/4", 3/8" and 1/2" panels/
Para paneles de 1/4 pulg., 3/8 pulg. y 1/2 pulg.

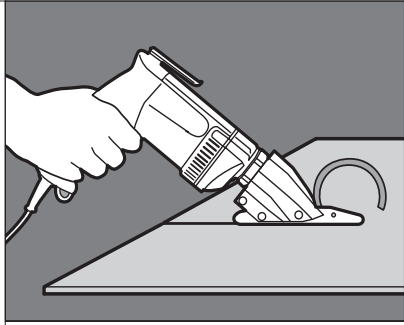


1. Score the panel with a utility knife. (1/2" panel may require a double score.)/Corte el panel con una navaja. (un panel de 1/2 pulg. podría requerir dos cortes).



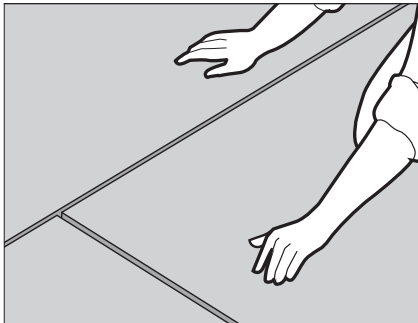
2. Pull one end of panel towards you until the panel breaks cleanly./Levante uno de los extremos del panel hacia usted hasta que el panel se rompa limpiamente.

For 1/2" and 5/8" panels/
Para paneles de 1/2 pulg. y 5/8 pulg.



1. Use a double score, circular saw or SS464 SNAPPER SHEAR® tool to cut the panel. See Note below./Haga dos marcas, o utilice una sierra circular o la herramienta SNAPPER SHEAR® SS464 para cortar el panel. Consulte la nota de abajo.

Installing Panels on Roof/ Instalación de paneles en el techo



Butt board edges and ends loosely. Long uninterrupted runs (greater than 200 feet) of SECUROCK Gypsum-Fiber roof board may require slight gapping due to thermal expansion./Coloque los paneles alineando los bordes y extremos en contacto leve. En techos con un area extensiva e ininterrumpida (de mas de 200 pies) los paneles para tejado de Gypsum-Fiber de Securock requeriran una separacion leve debido a la expansion y contraccion atribuida con los cambios de temperatura del clima.

Storing Panels/ Almacenamiento de paneles



Keep product dry before and during installation./Mantenga el producto seco antes y durante la instalación.

800 USG.4YOU

We Speak Spanish/Se habla español

Product Information/Información sobre productos

See usg.com for the most up-to-date product information./Visite usg.com para obtener la información más actualizada sobre productos.

Note/Nota

For more information on the SS464 SNAPPER SHEAR® tool made by PacTool International, see www.pactool.us or phone 800 297.7487./Para mayor información acerca de la herramienta SNAPPER SHEAR SS464 fabricada por PacTool International, visite www.pactool.us o llame al 800 297.7487.

Trademark/Marca comercial

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Safety First!

Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

¡Seguridad primero!

Siga todas las prácticas de seguridad e higiene industrial durante el manejo y la instalación de todos los productos y sistemas. Tome las precauciones necesarias y lleve puesto el equipo de protección personal apropiado según sea necesario. Lea las hojas de datos de seguridad del material y cualquier información relacionada sobre los productos antes de la especificación y/o la instalación.



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Roof Board Applications



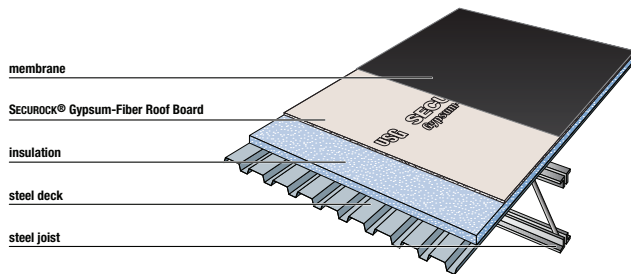
- There are four basic components in a low-slope commercial roof assembly:
- A structural deck and joists, which can be formed of steel, wood or concrete
 - Insulation, including polyisocyanurate (ISO), extruded polystyrene (XPS) or expanded polystyrene (EPS)
 - Roof cover board installed between the insulation and the roofing membrane to protect the insulation and support the membrane, improving fire protection, traffic and hail resistance, and wind uplift performance
 - A membrane or membrane system, which can be built-up roofing (BUR), single-ply or modified bitumen

The following are for illustration purposes only. SECUROCK® High-Performance roof boards are engineered to perform within a properly designed roof system. The use of SECUROCK High-Performance roof boards as a roofing component is the responsibility of the design professional. Consult roofing manufacturers for specific instructions on the application of their products to SECUROCK High-Performance roof boards.

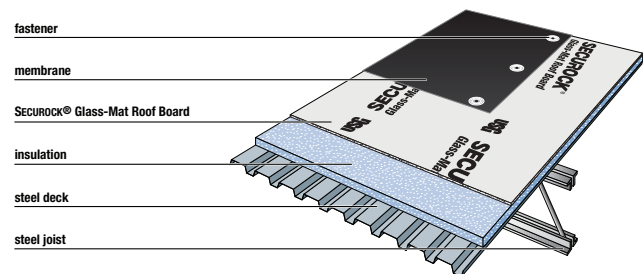
Cover Board

SECUROCK High-Performance roof board is placed directly below the roofing membrane, providing primary support for the membrane and protecting the underlying insulation layer from damage during installation and for the service life of the roof. Cover boards are used for impact protection for insulation boards (foot traffic, hail, etc.), to protect insulation from EPDM heat transfer, as a surface to which asphalt can be mopped, and as a fire barrier for external fire.

SECUROCK® Gypsum-Fiber roof board recommended for fully adhered membrane.



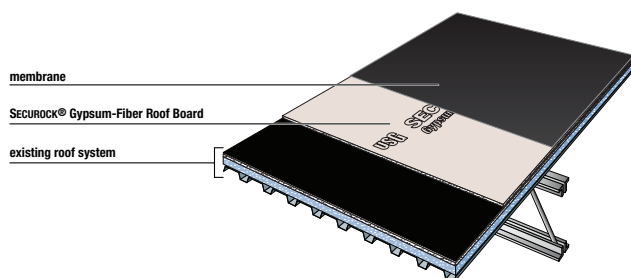
SECUROCK® Glass-Mat roof board recommended for mechanically attached membrane.



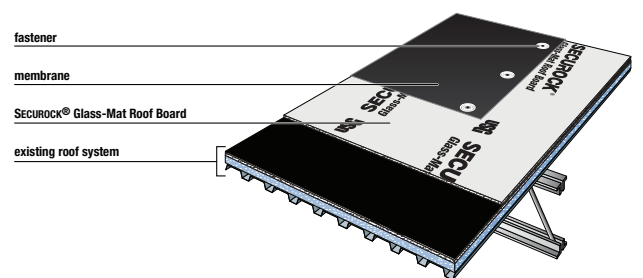
Roof Recover Board

SECUROCK High-Performance roof board is placed over the existing membrane surface, where it functions as a separator and a support layer between the old roof and the new roofing membrane. Roof recover boards provide a flat substrate for new roofs and have all of the benefits of a cover board.

SECUROCK® Gypsum-Fiber roof board recommended for fully adhered membrane.



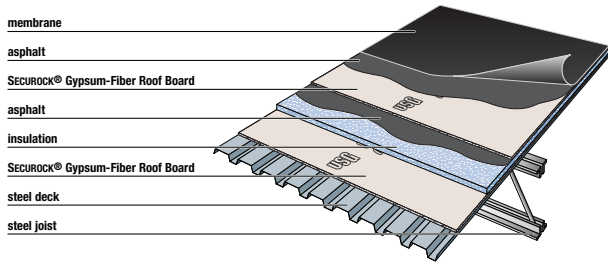
SECUROCK® Glass-Mat roof board recommended for mechanically attached membrane.



Hot Asphalt Substrate (Hot Mop)

Securock® Gypsum-Fiber roof board can be mechanically fastened, bonded with mastic or adhesives or hot mopped to foam insulation. All hot-applied roofing systems can then be mopped directly onto the unprimed roof board without concern for blistering or delamination. Securock Gypsum-Fiber is your best option for hot mopping.

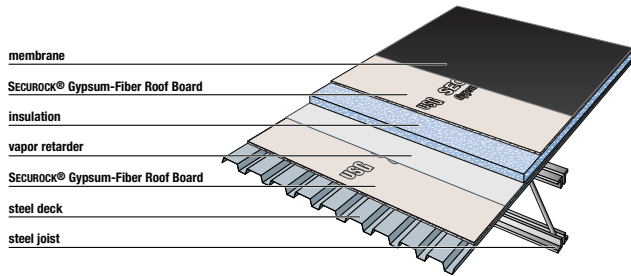
Securock® Gypsum-Fiber roof board only.



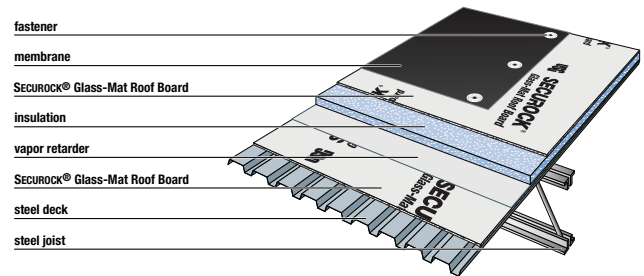
Substrate for Vapor Retarders

Securock High-Performance roof board is placed over the roof deck to provide support for the vapor barrier. The membrane may be loose laid; attached with cold mastics, hot asphalt or adhesives; or mechanically fastened, depending on the roof assembly. The roof board is used as a substrate for retarder to adhere to in order to reduce condensation.

Securock® Gypsum-Fiber roof board recommended for fully adhered membrane.



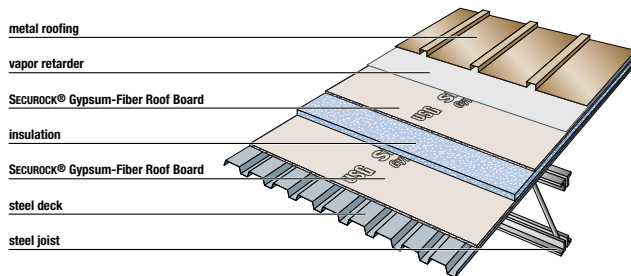
Securock® Glass-Mat roof board recommended for mechanically attached membrane.



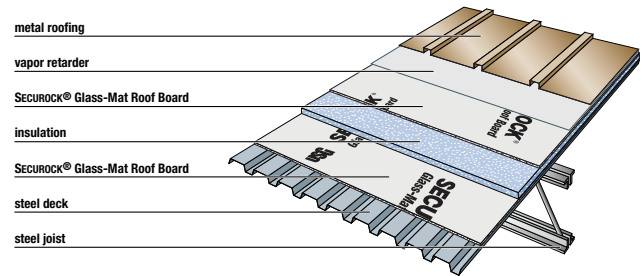
Metal or Tile Roof Thermal Barrier

Securock High-Performance roof board provides a thermal barrier in conjunction with a standing-seam metal or tile roofing system. It also provides noise reduction and hail resistance. Thermal barriers reduce thermal "shock" and slow heat escape from building and act as a fire barrier for internal fire.

Securock® Gypsum-Fiber roof board recommended for fully adhered membrane.



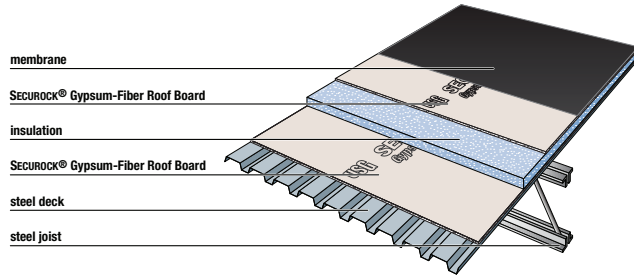
Securock® Glass-Mat roof board recommended for mechanically attached membrane.



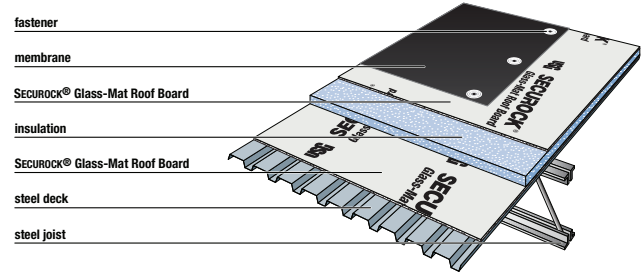
Thermal Barrier

Securock High-Performance roof board provides a thermal barrier installed directly to metal deck for both expanded and extruded polystyrene insulation. Thermal barriers reduce thermal "shock" and slow heat escape from building and act as a fire barrier for internal fire.

SECUROCK® Gypsum-Fiber roof board recommended for fully adhered membrane.



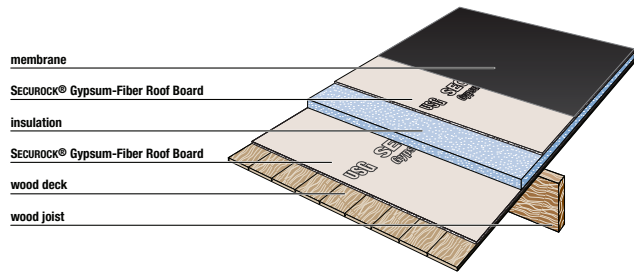
SECUROCK® Glass-Mat roof board recommended for mechanically attached membrane.



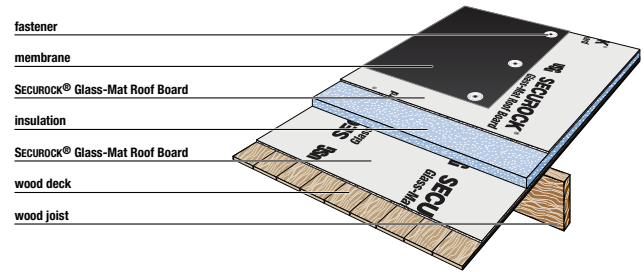
Fire Barrier Underlayment

Securock High-Performance roof board is used as a barrier board underlayment below optional rigid foam insulation on a combustible deck to achieve a Class A, B or C fire-resistance rating. See the UL Building Materials Directory for more information.

SECUROCK® Gypsum-Fiber roof board recommended for fully adhered membrane.



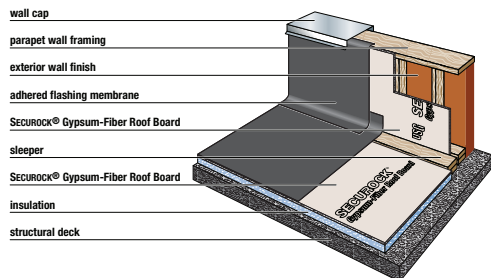
SECUROCK® Glass-Mat roof board recommended for mechanically attached membrane.



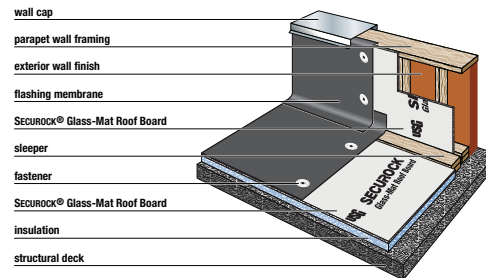
Parapet Wall Substrate

Securock High-Performance roof board is fastened to wood or metal framing along the parapet wall for roofing membrane flashing support.

SECUROCK® Gypsum-Fiber roof board recommended for fully adhered membrane.



SECUROCK® Glass-Mat roof board recommended for mechanically attached membrane.



SECUROCK[®] High-Performance Roof Boards

Proper fastener spacing is critical to achieve wind-uplift performance. Always use fasteners specified in accordance with Factory Mutual Global (FMG) requirements and the roof membrane manufacturer's written recommendations. Fasteners should be installed in compliance with the roof manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29.

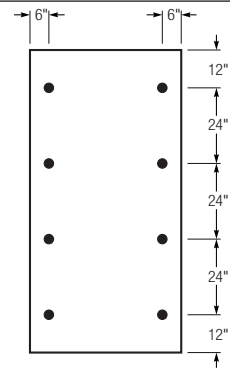
**4' x 4'
Roof Board**

4 Fasteners	5 Fasteners	6 Fasteners
8 Fasteners	9 Fasteners	11 Fasteners
12 Fasteners	14 Fasteners	16 Fasteners

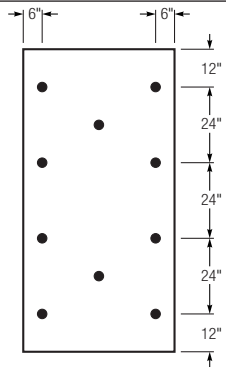
Fastener Patterns

**4' x 8'
Roof Board**

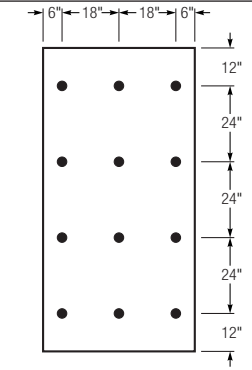
8 Fasteners



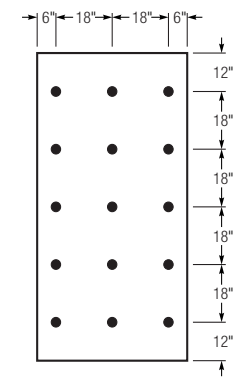
10 Fasteners



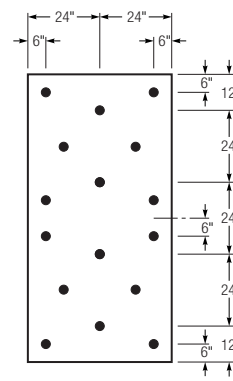
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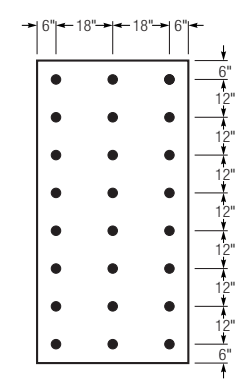
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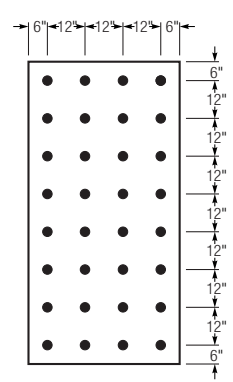
16 Fasteners



24 Fasteners



32 Fasteners



SECUROCK® Hits It Out of the Park for Marlins Stadium

Application/Building Type:

Stadium Retractable Roof

Project Name:

Florida Marlins Ballpark

Location:

Miami, Florida

Contractor:

Petersen Dean Roofing and Solar Systems, Inc.

Featured Products:

SECUROCK® Gypsum-Fiber Roof Board



usg.com/securock

“SECUROCK Gypsum-Fiber roof board... far exceeded the building’s performance requirements. The products came out on top. No one else could meet both the wind uplift and Class A fire test requirements.”

With an eye on performance, aesthetics, sustainable design and the fan experience, Miami-Dade County and the Florida Marlins plan to have their bases covered when their new ballpark opens for the 2012 season.

Performance expectations are high – literally – for the new Marlins Ballpark, especially when it comes to the stadium’s retractable roof. Consisting of three metal-decked operable panels, the lower east and west panels cover the stands while the highest elevated center panel rises 200 feet over second base to allow for pop flies.

That elevation puts the roof in one of the area’s highest wind zones, requiring the assembly to withstand 140-mile-per-hour winds. The roof system includes 18- and 20-gauge metal steel decking with 11-foot joist spacing. Carlisle HP-H Polyiso insulation board, 2.0" thick, and 5/8" SECUROCK® Gypsum-Fiber roof board were mechanically fastened to the decking. A 60-mil Carlisle Sure-Weld® TPO membrane was then fully adhered to the SECUROCK Gypsum-Fiber roof board.

“The building’s elevation, design and the owner’s plans for a Factory Mutual Global insured property, combined with the stringent Dade County and UL Class A building criteria, all drove the wind uplift design pressure,” said Dave Wikel, vice president of Petersen Dean Roofing and Solar Systems, Inc., the park’s roofing contractor. “There are very high uplift requirements with this application, yet at the time drawings were prepared, there wasn’t a system yet approved in Dade County to meet the stadium’s requirements.”

That changed when United States Gypsum Company and Carlisle SynTec stepped up to bat to perform extensive testing for a SECUROCK roof board and Carlisle membrane assembly.

“SECUROCK Gypsum-Fiber roof board and Carlisle far exceeded the building’s performance requirements. The products came out on top. No one else could meet both the wind uplift and Class A fire test requirements,” said Bernie Abrami, manufacturer’s representative with ProRep, for SECUROCK and Carlisle. “The superior compressive strength of SECUROCK also resists membrane puncture from flying debris during south Florida’s severe weather.”

SECUROCK Gypsum-Fiber roof board is fire resistant and ideal for use in all types of commercial low-slope roofing systems. The board is engineered to provide superior wind-uplift performance for a wide variety of roof assemblies. Its fiber-reinforced, homogenous composition gives the panel strength and water resistance through to the core.

“We didn’t have any problems with blistering or bubbling that we do with other cover boards,” Wikel noted. “It was easy to contour if we had inconsistencies in the deck substrate. And, because a single-ply membrane fully adheres to the smooth board surface, you get a nice looking, uniform and clean finished product. The owner not only demanded a high performance system, but also one that was pleasing to the eye.”



“We feel appreciated by USG and SECUROCK,” Wikel said. “We get great support that we don’t get with other providers.”

Sustainable design was another project priority. The Marlins Ballpark plans to become the first LEED® Silver–certified retractable-roof baseball stadium. Green design initiatives include a goal that ultimately more than 20 percent of the project’s total material will come from recycled content.

SECUROCK Gypsum-Fiber roof board is made from 95 percent recycled materials and has earned independent certification from Scientific Certification Systems for this achievement.

A Double Play: Fan and Contractor Comfort

The ballpark’s retractable roof will provide relief from south Florida’s almost daily summer rains and high heat with average summer temperatures of 87 °F, weather conditions that have made a demanding project even more so for the contractors installing the roof.

“It’s hot and sweaty. The guys are tied up on cable for fall protection. Anything that makes moving materials easier and more efficient is a big benefit for comfort, safety and production,” Abrami said.

That was the experience the crew from Petersen Dean, the nation’s third largest roofing contractor, had as they installed SECUROCK. Because the gypsum-fiber roof board’s composition of gypsum and cellulose fibers does not require a glass-mat facer for strength, the panel is easy to handle with no itchiness.

“We like it because it’s user-friendly. The ease of working with SECUROCK allowed us to install the board in a timely manner in a very difficult application where the sides and end of the roof are at a steep vertical slope of 18/12. Some of the roof panels are straight up and down,” Wikel explained.

Another benefit project team members cited was the gypsum-fiber board’s low surface absorption, which increases the ability to predict adhesive usage and find additional material cost savings.

Petersen Dean has installed approximately two million square feet of SECUROCK roof board in projects in Florida and Puerto Rico during the past year.

“We feel appreciated by USG and SECUROCK,” Wikel said. “We get great support that we don’t get with other providers. The quality of the material and service is what makes SECUROCK our preferred roof board.”

The new Marlins Ballpark is owned by Miami-Dade County. Architect Earl Santee of POPULOUS is one of the most experienced ballpark architects in the world, working on nearly 20 Major League Baseball parks.

Project Profile



USG SECUROCK® Gypsum-Fiber Roof Board

Application/Building Type:

Public Facility

Project Name:

Crissy Field Environmental
Education Facility

Location:

San Francisco, California

Architect:

Project FROG

Featured Products:

SECUROCK® Gypsum-Fiber Roof Board



usg.com/securock

Sustainable Roof System Tops Off One of the Nation's Greenest Park Buildings

SECUROCK® Gypsum-Fiber Roof Board's High-Recycled Content Helps Support Project FROG's Sustainability Objectives for Environmental Center

San Francisco, CA

While it was built in less than four months and will only be used for three to five years, San Francisco's award-winning environmental education facility, the Crissy Field Center, promises to be an outstanding model of sustainability for students, park visitors and the entire building industry. A major contributor to the project's sustainable design is its roof system that features an assembly of environmentally-friendly building materials including USG SECUROCK® gypsum-fiber roof board made from 95 percent recycled content.

The Center, operated in partnership by the Golden Gate National Parks Conservancy, the National Park Service, and the Presidio Trust, serves nearly 20,000 youth and families annually, both on-site and in the community. Many of the participating youngsters had never been to a national park, even though they live just a few miles away.

A major public works project required the Center to temporarily relocate from their original location. High-performance classrooms, a science lab, art room and café comprise the Center's temporary 7,500 square-foot location, which is expected to qualify for US Green Building Council LEED® Gold Certification. The structures were designed by San Francisco-based Project FROG (Flexible Response to Ongoing Growth). Project FROG designs and manufactures bright, inspiring, sustainable buildings, all of which were priority attributes for this project.

"The FROG solution combines key attributes, such as abundant natural daylight, to minimize the need for electrical light, low-VOC (volatile organic compound) content materials for improved air quality, better sightlines and optimal acoustics, to achieve an environment that enhances learning without compromising aesthetics or affordability," said Mark Miller, AIA, LEED AP, founder of Project FROG.

The Center's new location is at the easternmost end of Crissy Field, one of San Francisco's most popular recreation areas. While there are few opportunities for new building on the waterfront, this project was approved because of its sustainable and flexible nature, according to Nikki Tankursley, Project FROG's Director of Marketing.

"Sustainability is a key element in the park's strategy for serving visitors," said Greg Moore, executive director of the Parks Conservancy, lead agency for the Crissy Field Center relocation. "This new building exceeds our expectations."

"...SECUROCK gypsum fiber roof board's 95 percent recycled content contributed significantly to the overall roof system qualifications for enough points to achieve LEED certification."



Roof Major Contributor to Sustainable Design

The Center's nearly 10,000 square-foot roof assembly is a major contributor to the project's sustainable design and anticipated LEED Gold certification. A significant feature of the sustainable roof is SECUROCK gypsum-fiber roof board manufactured from a combination of synthetic gypsum and cellulose fibers. Synthetic gypsum is an environmentally-friendly byproduct from electrical plants and is indistinguishable from natural mined gypsum rock in performance and quality. By sourcing this material for use in board production, USG takes what previously was landfill waste and turns it into a useful product. The product's 95 percent recycled content has earned SECUROCK gypsum-fiber roof board a Green Cross certification from Scientific Certification Systems.

"The tipping point for Project FROG was the high recycled content," said Jennifer Link-Raschko, USG Architectural Service Manager—West for Specialty Products Division. "LEED Material and Resources Credit 4 points can be difficult to achieve but SECUROCK gypsum-fiber roof board's 95 percent recycled content contributed significantly to the overall roof system qualifications for enough points to achieve LEED certification."

Another critical benefit SECUROCK gypsum-fiber roof board provided this project was mold and moisture resistance. The gypsum-fiber roof board has been treated for uniform moisture resistance throughout the panel. In addition, it has been tested and scores a 10, the highest score for mold resistance, on ASTM D3273.

"The new Center is located within immediate proximity of the saltwater and San Francisco Bay, one of the harshest environments for building products," said Josh Barthel of Alliance Roofing California, the project's roofing contractor. "SECUROCK gypsum-fiber roof board's moisture resistance helps create long-term peace of mind for product durability."

The product's homogeneous composition provides exceptional bond and low surface absorption with no risk of facer delamination in all types of adhered systems, including single-ply, fluid-applied, built-up, spray foam, metal and modified bitumen roofing.

"The product," noted Barthel with Alliance Roofing, "cut cleanly and worked well for cutting numerous angles on the multiple roof areas that were small and odd-shaped."

Besides SECUROCK gypsum-fiber roof board, the roofing membrane also supports Project FROG's and the Center's sustainable building objectives. The Duro-Last roofing system's pre-fabricated and highly solar reflective roofing membrane helps reduce energy consumption. The company's manufacturing process recycles scrap back into roofing membrane and other products, and after its useful life on a rooftop, the membrane itself is recyclable.

"Sometimes the roof is overlooked but it is increasingly being viewed as a viable solution for sustainability in architecture and construction," said Steve Kolos, LEED AP for Fisher Development, Inc., the relocation project's general contractor and a preferred partner for Project FROG buildings.



Shared Values on Sustainability

USG has worked with Project FROG since 2008 when the company's ceilings solutions were featured in the "School of the Future, Today" zero-energy classroom demonstration building at USGBC's Greenbuild International Conference and Expo. Since then, Project FROG has utilized USG ceilings products in every one of their built projects including the Crissy Field Center.

The sustainable building design leader first used SECUROCK gypsum-fiber roof board in Hartford, Connecticut, at the Watkinson School which features three interconnected, energy-neutral classrooms. Project FROG also used SECUROCK gypsum-fiber roof board at the Jacoby Creek School in Bayside, California, and at the Vaughn Next Century Learning Center in the Los Angeles Unified School District. The two companies believe in a life-cycle approach to sustainable design and building.

"We look at companies that share our dedication to sustainability. We've definitely done our home work in every element of building, so we only spec the greenest products. Early on we identified USG as having high-quality performing products that were also some of the most sustainable," said Project FROG's Nikki Tankursley. "Going green is not just about using green materials. It is so much more. It encompasses the entire process—everything that happens before products are installed and everything after. We look at entire life-cycle of projects, fabrication through transportation and installation, and throughout the life of the building while it's in use and then after life.

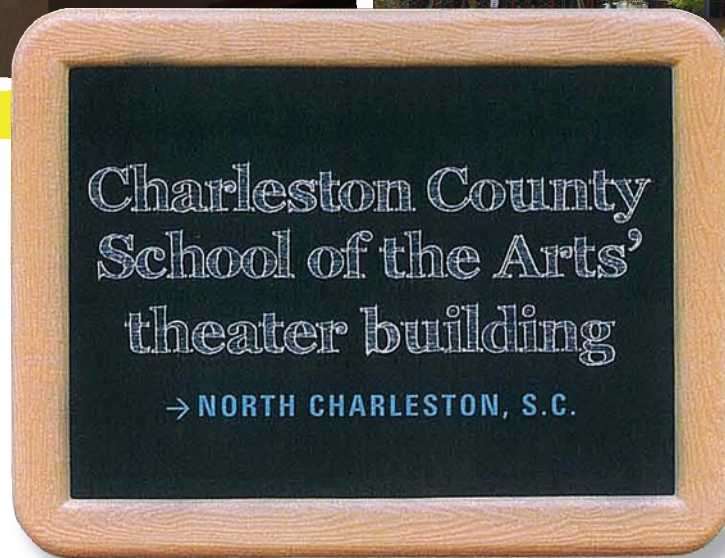
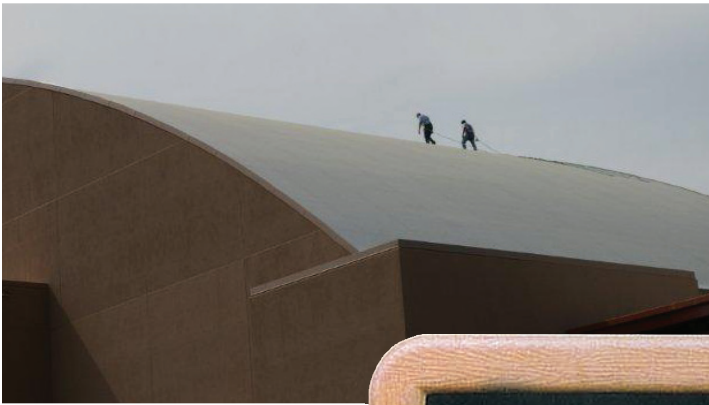
"This project is pretty much 100 percent recyclable. After the Crissy Field Center moves back to their original location, the interim building will be re-used and possibly relocated and reused."

In the meantime, the Center is open and has integrated its current building's green technologies and sustainable design into its programming, including sustainable development workshops and site tours.

About USG Corporation

USG Corporation is a manufacturer and distributor of high-performance building systems through its United States Gypsum Company, USG Interiors, Inc., L&W Supply Corporation and other subsidiaries. Headquartered in Chicago, USG worldwide operations serve the residential and non-residential construction markets, repair and remodel construction markets, and industrial process markets. USG wall, ceiling, flooring and roofing products provide leading-edge building solutions for customers, while L&W Supply center locations efficiently stock and deliver building materials across the United States. For additional information, visit the USG website at usg.com.

CASE STUDY



TEAM

ARCHITECT:

Thomas & Denzinger Architects
Charleston, SC
www.thomasanddenzinger.com

ROOF CONSULTANT:

ADC Engineering Inc., Hanahan, SC
www.adcengineering.com

ROOFING CONTRACTOR:

* Peach State Roofing Inc., Rock Hill, SC
www.peachstateinc.com

ROOFING DISTRIBUTOR:

** N.B. Handy Co., West Columbia, SC
www.nbhandy.com

GENERAL CONTRACTOR:

M.B. Kahn Construction Co. Inc.
Columbia, SC, www.mbkahn.com

ROOF-BOARD MANUFACTURER:

USG, Chicago, IL, www.usg.com

INSULATION AND MEMBRANE MANUFACTURER:

Carlisle SynTec
Carlisle, PA, www.carlisle-syntec.com

ROOF MATERIALS

This new-construction project's 10,000-square-foot barrel roof system features ½-inch-thick SECUROCK gypsum-fiber roof board, 1 ½-inch Carlisle polyiso insulation, 2-inch Carlisle polyiso insulation and a Carlisle Sure-Flex fully adhered PVC membrane in gray.

ROOF REPORT

Known as the crown jewel of the school, the theater building's 80-foot-high barrel roof presented a number of unique challenges, including safety and stocking. M.B. Kahn Construction and Peach State Roofing set up a harness system for each of the roofing workers to ensure they could safely work across the tight radius of the roof. Because of the barrel-

roof design, there was no flat area to stock material on the roof. As a result, workers had to manually move materials from a lower flat roof section to the higher barrel section.

From a design perspective, there were unique challenges present, as well. The primary challenge was to design a roof system that achieved the required 120 psf wind-uplift rating. To meet this requirement, architects specified the Sure-Flex PVC membrane fully adhered to SECUROCK gypsum-fiber roof board. The SECUROCK gypsum-fiber roof board was also used to increase the overall durability of the roof system.

From design to installation, all parties worked together with creativity and ingenuity to construct this unique roof system to serve as a focal point on campus for years to come.

* Indicates CRSMCA contractor members

** Indicates CRSMCA associate members

CASE STUDY



Apartment complex under construction in South Jordan, Utah

New Construction Using New Roofing Products in Utah

by Rich Willett, USG product manager

Despite a slowly recovering economy, construction of new apartment complexes continues in Utah. Western National Contractors, Irvine, Calif., is in the process of building the first phase of "The Daybreak Apartments" in South Jordan, Utah, just outside of Salt Lake City. When completed, a multitude of new families in the area's westward expansion will call the project home. The first phase has more than 185,000-sq.ft. of roof area covering eight apartment buildings with 320 new luxury apartments, a clubhouse, and numerous support buildings.

Noorda Architectural Metals, Salt Lake City, Utah, is the roofing contractor on the project. Chris Noorda, owner of the company, and Aaron Howe, who manages the roofing division, together selected the complex's roofing system and chose a GAF Materials Corporation's mechanically attached 60 mil TPO membrane over USG Corporation's new 1/4" Securock glass-mat roof board. "We needed a total roof system that could stand up to our cold winters and hot summers, and we wanted to work with manufacturers who have proven track records to give the owner the best possible value for his money," Noorda explained.

Noorda Architectural is a GAF Master Select Contractor and has installed many thousands of square feet of GAF's TPO roof membrane.

Additionally Noorda recently installed 3/8" Securock gypsum-fiber roof board on a LEED project called "Art Space Commons." The gypsum-fiber roof board's 95% recycled content helped support the environmental goals of MJSA Architecture, Salt Lake City, Utah, the architect for Art Space Commons. "We knew that USG was going to produce a roof board with glass-mat facer and we were eager to try the new board based on our experience with the quality and service the company has always provided us," Howe added.

Working with Jim Sheltmire and Paul Schnieders of D7 Weather Protection System, Park City, Utah, representatives for GAF and USG roofing products in Utah, Howe was able to secure the initial production run of the new glass-mat roof board for the Daybreak project which arrived just in time to start the roofing work. "We were excited to work with Noorda and that Daybreak Apartments was the first project for our new glass-mat roof board," said Sid Teachey, USG Securock national sales manager.

Given this project's wood framed construction, a fire barrier was required. Securock glass-mat roof board meets Factory Mutual (FM) class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications per

UL 790 making it a perfect match for the project requirements.

The glass-mat roof board is ideal for use in low-slope commercial roofing systems. In addition to providing fire protection, building professionals can enhance the durability of the entire roofing system when they use the glass-mat roof board as a cover board in single-ply mechanically attached systems. Also, with its specially treated core and high-performance glass-mat facer, the product is moisture and mold resistant scoring a ten, the highest score for mold resistance on ASTM D3273.

"Our workmen are very pleased with the way the board handles and the ease of cutting," said Howe. "We are satisfied with the performance qualities of the product. The way it works in the hands of the men installing it is paramount to us."

So next time you fly in to Salt Lake City International Airport keep an eye to the west valley and when you see that huge apartment complex with the gleaming white Energy Star roof, know that it is protected for many years to come through the combined efforts of Noorda Architectural Metals, USG Corporation, and GAF Material Corporation. The first phase of Daybreak Apartments is expected to open soon.

Project Profile



USG SECUROCK® Gypsum-Fiber Roof Board

Application/Building Type:

Education Environment

Project Name:

Lupton Library
University of Tennessee

Location:

Chattanooga, Tennessee

Roofing Contractor:

Porter Roofing

Featured Products:

SECUROCK® Gypsum-Fiber Roof Board



usg.com/securock

Contractor Saves Time, Money with Innovative Roof Board

Simply by switching their brand of roof board, Porter Roofing, a leading single-source contractor for many of the largest roofing manufacturers in the country, cut down installation time by approximately 30 percent during its reroofing of the University of Tennessee's 46,200-square-foot Lupton Library in Chattanooga, Tenn. Almost as important, the switch made their field applicators happy.

At the recommendation of an industry peer, Porter Roofing's project foreman decided to try USG SECUROCK® Gypsum-Fiber roof board, which is comprised of an advanced, fiber-reinforced technology specifically designed for low-slope commercial roofing. The board provides unparalleled wind-uplift performance because it has no fiberglass facer to delaminate, and also offers superior mold and moisture resistance. In addition, the roof board is made from 95 percent recycled materials, which makes it environmentally friendly.

According to Porter Roofing Project Foreman Darren Jenkins, "One of the biggest benefits of USG SECUROCK Gypsum-Fiber roof board is its low surface water absorption rate, which means that it requires significantly less adhesive during installation. We used roughly half the amount of adhesive we would normally go through when working with primed fiberglass boards."

Jenkins noted that the application process itself was much quicker, as no glass fibers are collected on the rollers and the product's smooth face enabled the adhesive to spread more easily. "On a job of this magnitude, we saved a significant amount of time and money on both materials and labor," he said.

Providing the most powerful endorsement, however, were Porter Roofing's field applicators, who were elated to find that, unlike typical fiberglass-faced panels, SECUROCK Gypsum-Fiber roof board's uniform composition did not splinter off and/or irritate their skin. Workers simply applied adhesive directly to unprimed board without experiencing any discomfort. On a hot summer day, this type of pleasant installation experience is invaluable to any worker in the roofing industry.

“On a job of this magnitude, we saved a significant amount of time and money on both materials and labor.”

Project Profile



USG SECUROCK® Gypsum-Fiber Roof Board

Application/Building Type:

Corporate Office Environment

Project Name:

United Airlines Reservation Center

Location:

Chicago, Illinois

Roofing Contractor:

Illinois Roofing

Featured Product:

SECUROCK® Gypsum-Fiber Roof Board



usg.com/securock

Versatile Roof Board Leaves Contractor with No Reservations

In addition to its sheer size, this high-profile project had a tight schedule and budget—and also required that United Airlines reservation clerks continue working throughout construction at their reservation center (above) in Chicago.

“Given our restrictive time frame, limited budget and need to minimize noise, this job called for a versatile, all-in-one roof board that could be installed either non or adhesive, that needed no additional priming and could be transported easily and efficiently,” said Illinois Roofing General Manager Michael Ward.

To achieve these varied objectives, Illinois Roofing chose SECUROCK® Gypsum-Fiber roof board from USG. SECUROCK Gypsum-Fiber roof board is a solid, rugged piece of fiber-reinforced board with no facer to delaminate. This product is also extremely versatile and can be used in single-ply, built-up, modified bitumen, liquid applied, spray foam and metal roof.

According to Ward, 35,000 roofing screws had to be mechanically fastened into the concrete deck, making noise an issue that needed to be addressed before work began.

“It would have been cost-prohibitive to start this project without having options in place for securing the roof board and membrane with adhesive if noise complaints came from United Airlines phone operators,” said Ward. “It was imperative that we be able to switch from mechanically fastening the boards to an adhesive installation midstream.

Adhesive installation of the roof membrane to typical glass-mat panels usually requires that the board be primed on the jobsite, or that a more expensive pre-primed board be used.

SECUROCK Gypsum-Fiber roof board, however, does not require priming in fully adhered applications. For Illinois Roofing, this meant there was no need to double-stock the project, with both primed and unprimed boards.

“SECUROCK Gypsum-Fiber roof board’s versatility helped cut material cost by approximately 10 percent, as we didn’t need to bring both primed and unprimed boards to the site. This product offers excellent resistance to moisture and mold, as well as better wind uplift performance than glass-faced panels.”

Packaging and Transportation

Given the proximity to O’Hare International Airport and tight security around the United Airlines Reservation Center, getting the boards onto the roof of the building took Illinois Roofing weeks to coordinate the use of a crane for only one day’s time, it was imperative that the roof board also transport easily and efficiently.

“From the first pallet loaded onto the roof, we noticed that SECUROCK Gypsum-Fiber roof board’s packaging not only protected the panels from edge damage but was also easily moved.

According to Ward, Illinois Roofing’s entire crew was also delighted to learn that SECUROCK Gypsum-Fiber roof board does not have fiberglass facer to irritate the skin like typical roof boards do.

“Completing a complex job on time and on budget while keeping your crew happy is a contractor’s dream,” noted Ward.

*“SECUROCK
Gypsum-Fiber
roof board’s
versatility helped
cut material cost
by approximately
10 percent.”*



Roof Deck

SECUROCK® Gypsum-Concrete Patch

(Formerly Pyrofill®)



Great for repairing poured in place roof decks such as gypsum roof decks and lightweight insulating concrete surfaces.

- Durable, over 500 psi compressive strength
- Fast installation
- Non combustible
- Feather-edge where needed

Description

SECUROCK® Gypsum-Concrete Patch is mill formulated and composed of specially calcined gypsum and wood chips or shavings. It is mixed at the jobsite with clean water only and poured in place as a patch for existing gypsum decks. SECUROCK Gypsum-Concrete Patch is non-combustible and used in several UL approved roof deck systems.

Advantages

Exceptional Strength Engineered to provide over 500 psi of compressive strength that will accept foot traffic and fasteners within 4 hours of application.

Fire Performance SECUROCK Gypsum-Concrete Patch is a non-combustible material that provides excellent fire performance and is used in several UL approved roof deck systems.

Versatile Can be used as a patch in many roof decks such as gypsum, vermiculite concrete, perlite concrete, and cellular foam concrete.

Limitations

- Protect from moisture in storage and on the job.
- Close open bags as tightly as possible, discard compromised or old open bags.
- Not to be applied over moist or wet surfaces.
- Must be protected from direct exposure to moisture after installed.
- Shelf life of 6 months under protected storage conditions.

Installation

- Keep all equipment clean.
- Use only clean water for mixing; do not add sand, aggregate or any other material.
- Deck must be structurally sound and free from debris or contaminants that might prevent proper bonding of SECUROCK Gypsum-Concrete Patch. Weak or deteriorated material must be removed from the deck to provide a solid base.
- Add SECUROCK Gypsum-Concrete Patch to water.
- Spread slurry at once after mixing and screed to desired thickness.
- DO NOT retemper SECUROCK Gypsum-Concrete Patch.
- Machine Mixing: Use 5 - 5.6 gals. (18.9 - 21.2 L) of clean water per 50 lbs. (22.6 kg); of SECUROCK Gypsum-Concrete Patch; do not over water.
- Mixing can be accomplished with mortar mixer or pail and drill with a mortar mixer attachment.
- This product provides a minimum dry density of 50 lbs./cu. ft. (801 kg/m³).
- Sets in 30-60 minutes.
- Mechanically attach base sheet to surface after material has set.

Fire Performance

- Non-Combustibility in accordance with ASTM E136.
- Fire rated and approved for use in UL Roof Deck Systems (P676, P503, P207, P229, P505, P507).

Standards Compliance

SECUROCK Gypsum-Concrete Patch is manufactured to conform to ASTM C317, "Standard Specification for Gypsum Concrete".

Physical Properties	Bags per pallet	63
	Weight, nominal lbs./pallet	3,200
	Weight, nominal lbs./bag	50
	Compressive strength after set	>500 PSI
	Set time	30-60 minutes
	Dry density	50-52 pcf
	R value	0.67 °F.ft ² .h/Btu/inch, per ASTM C 518

Submittal Approvals:	Job Name	
	Contractor	Date

⚠WARNING!

When mixed with water, this material hardens and then slowly becomes hot. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions may cause severe burns that may require surgical removal of affected tissue. When applying or sanding, wear safety glasses or goggles for eye protection. If eye contact occurs, flush thoroughly with water for 15 minutes to remove particles. If irritation continues, consult physician. Use wet-sanding technique to avoid creating dust. While mixing or dry sanding or if dusty conditions exist, wear a NIOSH/MSHA-approved respirator. Dust created when dry sanding or mixing may cause eye, nose, throat, or upper respiratory irritation. If irritation continues, consult physician. Do not ingest. Product safety information: (800) 507-8899.

Dust may cause irritation to eyes, skin, nose, throat and upper respiratory tract. Avoid irritation by reducing exposure to dust. Wood dust, depending on species, may cause respiratory sensitization. IARC classifies certain types of wood fiber as a carcinogens to humans (Group 1). Use in a well-ventilated area or provide sufficient local ventilation. If dusty, wear a NIOSH/MSHA-approved dust respirator. Wear eye protection. If eye contact occurs, flush thoroughly with water for 15 minutes. If irritation persists, call physician. Wash with soap and water after use. Do not ingest. If ingested, call a physician. Product safety information: 800-507-8899 or usg.com. **KEEP OUT OF REACH OF CHILDREN.**

Trademarks

The following trademarks are owned by United States Gypsum Company or its related companies: PYROFILL, SECUROCK, USG and USG in stylized letters.

Note

Products described here may not be available in all geographic markets. Consult your United States Gypsum Company sales office or representative for information.

Product Information

See usg.com for the most up-to-date product information.

Notice

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

Safety First!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read MSDS and literature before specification and installation.





UL Approvals



TGFU.R1319 Roofing Systems

Roofing Systems

[See General Information for Roofing Systems](#)

UNITED STATES GYPSUM CO
550 W ADAMS ST
CHICAGO, IL 60661-3665 USA

R1319

Class A, B or C

1. **Deck:** C-15/32

Incline: See Note 1

Insulation (Optional): — Any Classified, any thickness.

Barrier Board: — 1/4, 1/2 or 5/8-in. thick SECUROCK® Glass-Mat Roof Board (Type SGMRX), mechanically fastened or fully adhered with all butt joints staggered a minimum of 6 in. from the plywood deck joint.

Membrane: — Any modified bitumen system, fluid applied systems, cold-applied or hot-mopped BUR, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

1a. **Deck:** C-15/32

Incline: 4 max. (Also See Note 1)

Insulation (Optional): — Any Classified, any thickness.

Barrier Board: — 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G), mechanically fastened or fully adhered with all butt joints staggered a minimum of 6 in. from the plywood deck joint.

Membrane: — Any modified bitumen system, fluid applied systems, cold-applied or hot-mopped BUR, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

1b. **Deck:** C-15/32

Incline: 2 max. (Also See Note 1)

Insulation (Optional): — Any Classified, any thickness.

Barrier Board: — 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G), mechanically fastened or fully adhered with all butt joints staggered a minimum of 6 in. from the plywood deck joint.

Membrane: — Any modified bitumen system, fluid applied systems, cold-applied or hot-mopped BUR, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

2. **Deck:** NC

Incline: See Note 1

Insulation (Optional): — Any Classified, any thickness.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8-in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G), mechanically fastened or fully adhered.

Membrane: — Any modified bitumen system, cold-applied or hot-mopped BUR systems, fluid applied systems, spray applied foam and coating systems or CPE, CSM,

CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

3. **Deck:** C-15/32*

Incline: 1/4

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Membrane: — Any modified bitumen system, cold-applied or hot-mopped BUR systems, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

* All deck joints blocked with 2x4's

4. **Deleted.**

5. **Deck:** C-15/32

Incline: See Note 2

Insulation (Optional): — Any UL Classified, any thickness.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Membrane: — Any cold-applied or hot-mopped BUR systems suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

6. **Deck:** C-15/32

Incline: See Note 2

Base Sheet: — One ply Type G2 mechanically attached.

Insulation (Optional): — Any UL Classified, any thickness.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU). When the Classified roof-covering system consists of single or multiple plies of base/ply sheets with a total minimum glass reinforcement weight of 1.0 lbs per 100 ft.2, the use of the Type G2 base sheet is optional.

7. **Deck:** C-15/32

Incline: See Note 2

Barrier Board: — (See Note 3) — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Insulation (Optional): — Fiberglass, polyisocyanurate, perlite or wood fiber, any thickness.

Membrane: — Any cold-applied or hot-mopped BUR systems suitable for use over the types of insulation specified above Classified under Roofing Systems (TGFU).

8. **Deck:** C-15/32

Incline: See Note 2

Base Sheet: — One ply Type G2 mechanically attached.

Barrier Board: — (See Note 4) — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Insulation (Optional): — Fiberglass, polyisocyanurate, perlite or wood fiber, any thickness.

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use over the types of insulation specified above

Classified under Roofing Systems (TGFU). When the Classified roof-covering system consists of single or multiple plies of base/ply sheets with a total minimum glass reinforcement weight of 1.0 lbs per 100 ft.2, the use of the Type G2 base sheet is optional.

9. **Deck:** C-15/32

Incline: See Note 2

Insulation: — Fiberglass, polyisocyanurate, perlite or wood fiber, (UL Classified, any thickness).

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

10. **Deck:** C-15/32

Incline: See Note 5

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Insulation: — Fiberglass, polyisocyanurate, perlite or wood fiber, (UL Classified, any thickness).

Membrane: — Any modified bitumen system, fluid applied systems, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use over the types of insulation specified above Classified under Roofing Systems (TGFU).

Note 1: Classification (A, B or C) and maximum incline limited to membrane manufacturer's insulated or non-insulated roofing systems (TGFU) Certifications.

Note 2: Classification (A, B or C) and incline limited to membrane manufacturer's insulated or non-insulated roofing systems (TGFU) Certifications but incline is not to exceed 3-in.

Note 3: The use of SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) as a barrier board directly over the combustible deck permits the use of any Classified Roofing System (TGFU) which otherwise is limited to use over noncombustible deck. When used, the insulation must consist of one of the types specified.

Note 4: The use of a Type G2 base sheet and SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) as a barrier board directly over the combustible deck permits the use of any Classified Roofing System (TGFU) which otherwise is limited to use over noncombustible deck. When used, the insulation must consist of one of the types specified.

Note 5: Classification (A, B or C) and incline limited to membrane manufacturer's insulated roofing systems (TGFU) Certifications but incline is not to exceed 3-in.

MAINTENANCE AND REPAIR SYSTEMS

Class A, B or C

1. Deck: C-15/32

Incline: See Note

Existing roof system: — (To maintain existing Classification) Any Class A, B or C, coated or uncoated, insulated or un-insulated, smooth surfaced, Type G3 mineral surfaced cap sheet or mineral surfaced modified bitumen membrane BUR system.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board joints staggered a minimum of 6 in. from the plywood deck butt joints.

Roof System: — Any UL Classified insulated or un-insulated roof covering system, mechanically fastened or fully adhered.

2. Deck: NC

Incline: See Note

Existing roof system: — (To maintain existing Classification) Any Class A, B or C, gravel covered BUR system. Gravel may be removed.

Barrier Board: — 1/4, 3/8, 1/2 or 5/8 in. thick SECUROCK® Gypsum-Fiber Roof Board (Type FRX-G) mechanically fastened or fully adhered with all barrier board butt joints staggered a minimum of 6 in. from the plywood deck butt joints.

Roof System: — Any UL Classified insulated or un-insulated roof system, mechanically fastened or fully adhered.

Note: Classification (A, B or C) and maximum incline limited to manufacturer's insulated or un-insulated roofing systems Certifications.

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UL Online Certifications Directory

TGFU.R12262
Roofing Systems

Roofing Systems

[See General Information for Roofing Systems](#)

UNITED STATES GYPSUM CO
550 W ADAMS ST
CHICAGO, IL 60661-3665 USA

R12262

Class A, B or C

1. **Deck:** C-15/32

Incline: See Note 1

Insulation: — Any Classified, any thickness.

Barrier Board: — 1/2 or 5/8-in. thick "Type DCB", mechanically fastened or fully adhered with all butt joints staggered a minimum of 6 in. from the plywood deck joint.

Membrane: — Any modified bitumen system, fluid applied systems, cold-applied or hot-mopped BUR, spray applied foam and coating systems or CPE, CSM, CSPE, PIB, NBP, TRE, EPDM, TPO or PVC single ply membrane system suitable for use with any roof insulation Classified under Roofing Systems (TGFU).

Note 1: Classification (A, B or C) and maximum incline limited to membrane or surfacing material's insulated or non-insulated roofing systems (TGFU) Certifications.

2. **Deck:** C-15/32

Incline: See Note 1

Insulation (Optional) : — Any Classified, any thickness.

Barrier Board: — 1/2 or 5/8-in. thick "Type DCB", mechanically fastened or fully adhered with all butt joints staggered a minimum of 6 in. from the plywood deck joint.

Surfacing: — Any modified bitumen system, fluid applied systems, cold-applied or hot-mopped BUR, or spray applied foam and coating systems, min. 1-in. thick Classified under Roofing Systems (TGFU) over "C-15/32" or "NC" Deck.

Note 1: Classification (A, B or C) and maximum incline limited to surfacing material's insulated or non-insulated roofing systems (TGFU) Certifications.

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TGIK.R25352
Roofing Systems, Uplift Resistance

Roofing Systems, Uplift Resistance

[See General Information for Roofing Systems, Uplift Resistance](#)

UNITED STATES GYPSUM CO

R25352

550 W ADAMS ST

CHICAGO, IL 60661-3665 USA

1. Uplift Resistance — 205 psf.

Joists: — Graded Dimensional Lumber, No. 2 or better spaced a max. 24 in. OC

Deck: — Type STRUCTO-CRETE. Nom 3/4 in. thick, long edges tongue and grooved. Long dimension to be perpendicular to joists with butt joints staggered a min 2 ft. and centered over joists. Panels secured to joists with 2-1/4 in. No. 8 self-countersinking steel screws with self-piercing points, alternating threads and a minimum head diameter of 0.40 in. spaced a max 8 in. OC in field and edges.

Membrane: — Any hot mopped or torch applied modified bitumen membrane system or hot mopped asphalt built-up system (see Roofing Systems, TGFU).

2. Uplift Resistance — 240 psf.

Joists: — Minimum No. 16 MSG galvanized steel. Min yield of 50 ksi. Joists spaced a max 24 in OC.

Deck: — Type STRUCTO-CRETE. Nom 3/4 in. thick, long edges tongue and grooved. Long dimension to be perpendicular to joists with butt joints staggered a min 2 ft and centered over joists. Panels secured to joists with 1-5/8 in. No. 8 self-countersinking, self-drilling, self threading steel screws with a minimum head diameter of 0.36 in. spaced a max 8 in. OC in field and edges. Membrane: Any hot mopped or torch applied modified bitumen membrane system or hot mopped asphalt built-up system (See Roofing Systems, TGFU).

3. Uplift Resistance — 135 psf.

Joists: — Minimum No. 16 MSG galvanized steel. Min yield of 50 ksi. Joists spaced a max 24 in OC.

Deck: — Type STRUCTO-CRETE. Nom 3/4 in. thick, long edges tongue and grooved. Long dimension to be perpendicular to joists with butt joints staggered a min 2 ft and centered over joists. Panels secured to joists with 1-5/8 in. No. 8 self-countersinking, self-drilling, self threading steel screws with a minimum head diameter of 0.36 in. spaced a max 8 in. OC in field and edges.

Insulation: — Any UL Classified, any thickness.

Barrier Board: — Min. 1/2 in. thick SECUROCK Roof Board secured with No. 12 DP steel screws and 3-in diameter steel stress plates. One fastener every 1-1/3 sq ft (24 per 4 ft. by 8 ft. panel).

Membrane: — Any hot mopped or torch applied modified bitumen membrane system or hot mopped asphalt built-up system (See Roofing Systems, TGFU).

4. Uplift Resistance — 165 psf.

Joists: — Minimum No. 16 MSG galvanized steel. Min yield of 50 ksi. Joists spaced a max 24 in OC.

Deck: — Type STRUCTO-CRETE. Nom 3/4 in. thick, long edges tongue and grooved. Long dimension to be perpendicular to joists with butt joints staggered a min 2 ft. and centered over joists. Panels secured to joists with 1-5/8 in. No. 8 self-countersinking, self-drilling, self threading steel screws with a minimum head diameter of 0.36 in. spaced a max 8 in. OC in field and edges.

Insulation: — Any UL Classified, any thickness.

Barrier Board: — Min. 1/2 in. thick G-P Gypsum's DensDeck Roofboard or DensDeck Prime Roofboard secured with No. 12 DP steel screws and 3-in diameter steel stress plates. One fastener every 1-1/3 sq ft (24 per 4 ft. by 8 ft. panel).

Membrane: — Any hot mopped or torch applied modified bitumen membrane system or hot mopped asphalt built-up system (See Roofing Systems, TGFU).

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Specifications

ARCHITECTURAL SPECIFICATIONS

Section 07500/ 07 50 00 – USG Securock® Brand High-Performance Roof Board

General Specification Notes:

References in [blue](#) are general indicators to the specifier.

The text material contained herein is intended for use as product reference material by architects, engineers, other design professionals, contractors, building code officials, or other competent construction industry trade factors having an interest in the selection, specification, and use of products manufactured by the subsidiaries of USG Corporation. It is intended solely as technical support incident to the sale and use of our products.

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This specification is intended for use to include USG Securock® Brand Gypsum-Fiber, USG Securock® Brand Glass-Mat and USG Securock® Brand Cement roof boards as a component within the specified membrane roofing system. USG Securock® Brand High-Performance Roof Board can be used as a thermal barrier, substrate board, roofing protection board, roof insulation protection board (i.e. cover board), barrier board and a re-cover board.

The specification information detailed below should be appropriately included, edited, and recorded in the roofing system specification as desired.

Part 1 – GENERAL

1.01 Description

- A. Work in this section includes, but is not limited to:
 - 1. Thermal barrier
 - 2. Substrate board
 - 3. Roofing protection board
 - 4. Roof insulation protection board
 - 5. Barrier board
 - 6. Re-cover board
- B. Related work specified elsewhere:
 - 1. Roof insulation
 - 2. Roof membrane
 - 3. Gypsum board
 - 4. Rough carpentry
 - 5. Metal roof
 - 6. Preparation for re-roofing
 - 7. Vegetated roof assemblies

1.02 Submittals

- A. Product data: Submit manufacturer's descriptive literature indicating material composition, thickness, sizes, and fire resistance that relate to the specified roof assembly.
- B. Shop drawings: Submit shop drawings indicating fastener and adhesive patterns for FMG wind uplift resistance specified.

1.03 Delivery, Storage And Handling

- A. Delivery: Deliver materials to the job site in manufacturer's original packaging, containers, and bundles with manufacturer's brand name and identification intact and legible.
- B. Storage: Keep USG Securock® Brand High-Performance Roof Board panels dry before, during, and after application. Outside storage must be off the ground and protected by a breathable waterproof covering.

USG Securock® High-Performance Roof Board panels must be covered the same day as laid. Store all panels flat. Damaged materials shall be removed from the premises.

- C. Handling: USG Securock High-Performance Roof Board panels should be cut to size using utility knife and straight edge. Score surface with utility knife and bend board up sharply toward score. Use keyhole-type drywall saw or recommended score and knock-out method for penetration cut-outs and radiuses.

1.04 Limitations

- A. USG Securock High-Performance Roof Board is engineered to perform within a properly designed roof system. The use of USG Securock High-Performance Roof Board as a roofing component is the responsibility of the design professional.
- B. Consult roofing manufacturers for specific instructions on the application of their products to USG Securock High-Performance Roof Board panels.
- C. Weather conditions, dew, application temperature, installation techniques and moisture drive can have adverse effects on the performance of the roof system and are beyond the control of USG.
- D. Keep USG Securock High-Performance Roof Board panels dry before, during and after installation. USG Securock High-Performance Roof Board panels should not be installed during rains, heavy fogs and any other conditions that deposit moisture on the surface of the board. Apply only as much USG Securock High-Performance Roof Board panels that can be covered by final roof membrane system in the same day. Avoid exposure to moisture from leaks or condensation.
- E. For re-roof or re-cover applications, existing roofing system must be dry throughout prior to application of USG Securock High-Performance Roof Board panels.
- F. Plastic or poly packaging applied at the plant to protect board during rail or other transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- G. USG Securock High-Performance Roof Board panels should be stored flat and off the ground with protection from the weather. If stored outdoors, a breathable waterproof covering should be used.
- H. For systems not listed, please contact your local USG Securock roofing sales representative.
- I. When applying solvent-based adhesives or primers, allow sufficient time for the solvent to evaporate to avoid damage to roofing components.
- J. USG allows the bonding of cold mastic modified bitumen and torching directly to the surface of only USG Securock Gypsum-Fiber Roof Board panels. Consult with the system manufacturer for recommendations on this application.
- K. USG recommends maximum asphalt application temperature for Type III asphalt of 455 °F (235 °C) when using USG Securock Gypsum-Fiber Roof Board. Application temperatures above these recommended temperatures may adversely affect roof system performance.
- L. USG recommends that you follow system manufactures recommendations for adhesive application and minimum tempetures requirements.
- M. Locate edge joints on, and parallel to, deck ribs. Stagger end joints of adjacent lengths of USG Securock High-Performance Roof Board panels. Butt board edges and ends loosely (minimum 1/16" gap on all edges) in typical installations. This gap may need to be larger depending on factors like the roof deck's size, membrane color, ultimate deck surface temperature and time of year the roof assembly is installed. Installations during temperatures below 50°F may require larger spacing. Please refer to USG's published physical properties below to calculate the actual gap needed for your specific project for all thicknesses.

Part 2 – PRODUCTS

2.01 Gypsum Roof Board:

- A. USG Securock® Brand Gypsum-Fiber Roof Board
 1. Acceptable product and manufacturer: ¼", ⅜", ½", and ⅝" USG Securock Gypsum-Fiber Roof Board as manufactured by United States Gypsum Company.
 2. Composition: Impact-resistant, nonstructural, fiber-reinforced gypsum panels manufactured with a minimum 97% certified recycled content, with moisture and mold resistance throughout the panel core and surface; manufactured to conform to ASTM C1278.
 3. Fiber Reinforced Gypsum Panel
 - i. Size: Nominal 4' x 8', 4' x 4'
 - ii. Edges: Square
 - iii. Facers: None
 - iv. Flexural strength, parallel, lbs. min. per ASTM C473: ¼" = 40; ⅜" = 70; ½" = 110; ⅝" = 161
 - v. Compressive strength, psi, nominal: ¼" = ⅜" = ½" = ⅝" = 1800
 - vi. Flute spanability per ASTM E661: ¼" = 2-⅝"; ⅜" = 5"; ½" = 8"; ⅝" = 10
 - vii. Permeance, perms per ASTM E96: ¼" = 30; ⅜" & ½" = 26; ⅝" = 24

- viii. R Value per ASTM E96: $\frac{1}{4}'' = 0.2$; $\frac{3}{8}'' = .3$; $\frac{1}{2}'' = 0.5$; $\frac{5}{8}'' = 0.6$
- ix. Coefficient of thermal expansion, inches/inch .F, per ASTM E 831: 8.0×10^{-6}
- x. Linear variation with change in moisture, inches/inch .%RH, per ASTM D1037: 8.0×10^{-6}
- xi. Water absorption, % max, per ASTM C473: 10
- xii. Surface water absorption nominal grams per ASTM C473: ≤ 1.6 grams
- xiii. Mold resistance per ASTM D3273: 10
- xiv. Bending radius: $\frac{1}{4}''$, $\frac{3}{8}''$, $\frac{1}{2}'' = 25'$; $\frac{5}{8}'' = 30'$
- xv. Recycled Content: min. 97% recycled content certified Scientific Certification Systems.

B. USG Securock® Brand Glass-Mat Roof Board

- 1. Acceptable product and manufacturer; $\frac{1}{4}''$, $\frac{1}{2}''$, and $\frac{5}{8}''$ USG Securock Glass-Mat Roof Board as manufactured by United States Gypsum Company.
- 2. Composition: Siliconized moisture and mold resistant gypsum core, with high-performance fiberglass facer; manufactured to conform to ASTM C1177.
- 3. Glass Mat Gypsum Panel:
 - i. Size: Nominal 4' x 8'
 - ii. Edges: Square
 - iii. Flexural strength, parallel, lbs. min. per ASTM C473: $\frac{1}{4}'' = 40$, $\frac{1}{2}'' = 80$, $\frac{5}{8}'' = 100$
 - iv. Compressive strength, psi, nominal: $\frac{1}{4}''$, $\frac{1}{2}''$, & $\frac{5}{8}'' = 700-1000$
 - v. Flute spanability per ASTM E661: $\frac{1}{4}'' = 2-\frac{5}{8}''$; $\frac{1}{2}'' = 5''$; $\frac{5}{8}'' = 8''$
 - vi. Permeance, perms per ASTM E96: $\frac{1}{4}''$ & $\frac{1}{2}'' = 18$, $\frac{5}{8}'' = 16$
 - vii. R Value per ASTM E96: $\frac{1}{4}'' = 0.36$; $\frac{1}{2}'' = 0.53$; $\frac{5}{8}'' = 0.54$
 - viii. Coefficient of thermal expansion, inches/inch .F, per ASTM E 831: 8.5×10^{-6}
 - ix. Linear variation with change in moisture, inches/inch .%RH, per ASTM D1037: 6.3×10^{-6}
 - x. Water absorption, % max, per ASTM C473: 10
 - xi. Mold resistance per ASTM D3273: 10
 - xii. Bending radius: $\frac{1}{4}'' = 4'$; $\frac{1}{2}'' = 6'$; $\frac{5}{8}'' = 9'$

C. USG Securock® Brand Cement Roof Board

- 1. Acceptable product and manufacturer; $\frac{1}{2}''$ USG Securock Cement Roof Board as manufactured by United States Gypsum Company.
- 2. Composition: Portland cement formulation with a high performance polymer-coated glass fiber mesh that is moisture and mold resistant; manufactured to conform to ASTM C1325.
- 3. Cement Panel:
 - i. Size: Nominal 4' x 8'
 - ii. Edges: Square
 - iii. Flexural strength, parallel, psi, per ASTM C947: > 750
 - iv. Compressive strength, psi nominal: > 1000
 - v. Flute spanability per ASTM E661: 12"
 - vi. Permeance, perms per ASTM E96: 5.84
 - vii. R Value per ASTM C518: 0.39
 - viii. Coefficient of thermal expansion, inches/inch/°F, per ASTM E 831: 4.5×10^{-6}
 - ix. Linear variation with change in moisture, %, per ASTM D1037: $< .07$
 - x. Water absorption, % max, per ASTM C473: < 15
 - xi. Mold resistance per ASTM D3273: 10
 - xii. Bending radius: 6'

2.02 Miscellaneous Materials

- A. FM-approved plates and fasteners: Provide size and type in accordance with FM requirements, local code requirements, and roof system manufacturer's written recommendations. Stress plates shall be configured for application over hard surfaces.
- B. Adhesives: As recommended by roof system manufacturer.

Part 3 – EXECUTION

3.01 General

- A. Provide USG Securock® Brand High-Performance Roof Board panels where indicated on drawings using fastening system specified.
- B. Use maximum lengths possible to minimize number of joints. Support edge joints with deck ribs. Stagger end joints of adjacent lengths of USG Securock High-Performance Roof Board panels. Ends and edges are typically loosely butted.
- C. Gap boards as required.

3.02 Roof Board Installation

- A. Refer to roof system manufacturer's written instructions, local code requirements and Factory Mutual Global (FMG and/or Underwriters Laboratories (UL) requirements for proper installation techniques.
- B. Use fasteners specified in accordance with above requirements. Install approved fasteners with plates into the USG Securock High-Performance Roof Board panels, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29. Proper fastener spacing is essential to achieve wind-uplift performance.
- C. Locate edge joints on, and parallel to, deck ribs. Stagger end joints of adjacent lengths of USG Securock High-Performance Roof Board panels. Butt board edges and ends loosely in typical installations. Long, uninterrupted runs (greater than 200 feet) of USG Securock High-Performance Roof Board may require slight gapping due to thermal expansion.
- D. See product data table for maximum flute span when panels are applied directly over metal decking.

3.03 Parapet (Wall) Framing and Fastening

- A. As recommended by roof system manufacturer, adhesive manufacturer, or any code body guidelines.
- B. Use appropriate corrosion-resistant fasteners as defined by roof system manufacturer.
- C. Use minimum ½" USG Securock High-Performance Roof Board for vertical wall applications.
- D. Maximum parapet framing spacing: 24" o.c. for ½" and ⅝" USG Securock High-Performance Roof Board.
- E. Fasten a maximum 8" o.c. around the perimeter and 8" o.c. on framing members in the field of the panel. Minimum fastener penetration in wood framing is ¾" and in steel framing is ⅜".

3.05 Standards and Code Compliance

- A. USG Securock® Brand Gypsum-Fiber Roof Board is manufactured to conform to ASTM C1278 and meets Factory Mutual 4470 Class 1 criteria as a thermal barrier or overlayment board. USG Securock Gypsum-Fiber Roof Board meets ASTM E81/UL 723 and or CAN/ULC-S102 flame spread 5 smoke developed 0. USG Securock Gypsum-Fiber Roof Board meets a Class A assembly. USG Securock Gypsum-Fiber Roof Board ⅝" meets thickness meets requirements of Type X per ASTM C1278 and may be used in P series designs as a thermal barrier.
- B. USG Securock® Brand Glass-Mat Roof Board is manufactured to conform to ASTM 1177, and meet FM Class 1. USG Securock Glass-Mat Roof Board complies with requirement of FM 4450 and FM 4470. UL Classified as to surface burning and ASTM E136: Flame spread 0 and smoke developed 0. Non-combustible core. ¼", ½", ⅝" thickness- Class A unlimited slope in accordance with UL790. USG Securock Glass-Mat Roof Board ⅝" thickness meets requirements of Type X per ASTM C1177, and may be used in P series designs as a thermal barrier.
- C. USG Securock® Brand Cement Roof Board is manufactured to conform to ASTM C1325, and meet FM Class 1. USG Securock Cement Roof Board complies with requirement of FM 4450 and FM 4470. UL Classified as to surface burning and ASTM E136: Flame spread 0 and smoke developed 0. Non-combustible core. Class A unlimited slope in accordance with UL790.
- D. USG Securock® Brand High-Performance Roof Board is approved with Florida Building Code for installation over insulated or non-insulated, new or existing wood, steel, concrete, or cementitious wood fiber roof decks or insulated or non-insulated existing gypsum roof decks. They may be mechanically attached or applied in ASTM D312, Type III or IV hot asphalt; ASTM D6152 SEBS modified asphalt, or other approved insulation adhesive.
- E. USG Securock High-Performance Roof Board is to be used in low-slope commercial roof construction including those systems classified in UL790 as Class A, B, or C.

END OF SECTION



Environmental

SECUROCK Gypsum-Fiber Roof Board

SECUROCK Gypsum-Fiber roof board is manufactured using synthetic gypsum—an environmentally-friendly byproduct from electrical plants. By sourcing this material for use in board production, USG takes what previously was landfill waste and turns it into a useful product. This synthetic gypsum is indistinguishable in terms of performance and quality from mined gypsum rock and accounts for 90 percent of the content of the final panel. An additional 7 percent of content is made from recycled cellulose fibers, which come from a local cardboard packaging facility. The result is a panel that has earned independent certification from Scientific Certification Systems for being comprised of a minimum 95 percent recycled materials. It also does not emit any volatile organic compounds (VOCs) once installed.

SECUROCK Glass-Mat Roof Board

SECUROCK Glass-Mat roof board is made from gypsum and a moisture and mold resistant core additive with glass-mat faces. Gypsum is a naturally produced mineral found all over the world. It is one of the most common minerals on the planet. The other common uses for gypsum are to make plaster of Paris/gypsum plasters and calcium fortification in food and soils. In fact, the addition of gypsum to soils can not only increase the calcium content but also reduce the need for watering by as much as 20 percent annually. Gypsum is chemically $\text{CaSO}_4 \cdot 2(\text{H}_2\text{O})$.

Locations

SECUROCK Glass-Mat roof board is manufactured in Sweetwater, Texas, and SECUROCK Gypsum-Fiber roof board is manufactured in Gypsum, Ohio.

From raw material selection and sourcing through manufacturing and delivery to longevity and performance and reuse upon end of need, USG products are designed to be as environmentally sensitive as possible.



500-mile radius surrounding the SECUROCK roof board manufacturing plants. 500 miles is the maximum distance a product can ship and contribute to LEED points.

SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

United States Gypsum Company

121 S. Lake Street, P.O. Box 121, Gypsum, OH, United States

For the following product(s):

FIBEROCK® Interior Panel, AR; FIBEROCK® Interior Panel, VHI;
FIBEROCK® AQUA-TOUGH™ Interior Panel, AR; FIBEROCK® AQUA-
TOUGH™ Interior Panel, VHI; FIBEROCK® CLIMA-TOUGH™ Interior Panel,
AR; FIBEROCK® Underlayment Panel; FIBEROCK® Tile Backerboard;
SECUROCK™ Gypsum-Fiber Roof Board.

This product meets all of the necessary qualifications to be certified for the following claim:

**Minimum 97% Pre-consumer Recycled Gypsum and Paper
Content**

Conforms to the SCS Recycled Content Standard V6-0

Registration # SCS-MC-01185

Valid from: November 1, 2013 to October 31, 2014



A handwritten signature in blue ink that reads 'Robert J. Hrubes'.

Robert J. Hrubes, Ph.D., Executive Vice President

2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA



Environmental Design and Credits

The U.S. Green Building Council has developed a system to rate the environmental design benefits of buildings called LEED (Leadership in Energy and Environmental Design). This guideline has been adopted by many cities and states as their environmental requirements on public building design (i.e. LEED Silver). Points are obtained through the use of better environmental design with several points related to material selection. The following information may assist in discussion with the design professional on the use of SECUROCK® GYPSUM-FIBER ROOF BOARD and how their use may assist in obtaining LEED points on their project:

RECYCLED CONTENT

SECUROCK® GYPSUM-FIBER ROOF BOARD reduces the impact resulting from extraction and processing of new virgin materials:

- **95%** pre-consumer recycled content

May assist in obtaining credits 4.1 and 4.2

Scientific Certification Systems criteria pertains to the use of environmentally friendly products like SECUROCK GYPSUM-FIBER ROOF BOARD, which is made from 95% recycled materials, that have been certified and achieved their Green Cross Award.

SUSTAINABLE SITES

SECUROCK GYPSUM-FIBER ROOF BOARD can be used with highly reflective roofing membranes to reduce the urban heat island effect.

May assist in obtaining credit 7.2

INNOVATION & DESIGN PROCESS

SECUROCK GYPSUM-FIBER ROOF BOARD can be used with an organic, highly reflective roofing membrane to reduce the urban heat island effect.

May assist in obtaining credits 1.1 and 1.2

LOCAL/REGIONAL MATERIALS

If SECUROCK GYPSUM-FIBER ROOF BOARD is produced within 500 miles of the jobsite:

US Gypsum Ohio Plant
Lake Street
P.O. Box 121
Gypsum, OH 43433-0121

May assist in obtaining credit 5.1

If SECUROCK® GLASS-MAT Roof Board is produced within 500 miles of the jobsite:

US Gypsum Sweetwater, Texas
1 USG Road
Sweetwater, Texas 79556

LOCAL RAW MATERIALS

Gypsum is barged in from less than 250 miles away.
All other raw materials are obtained from 50 miles or less.

May assist in obtaining credit 5.2

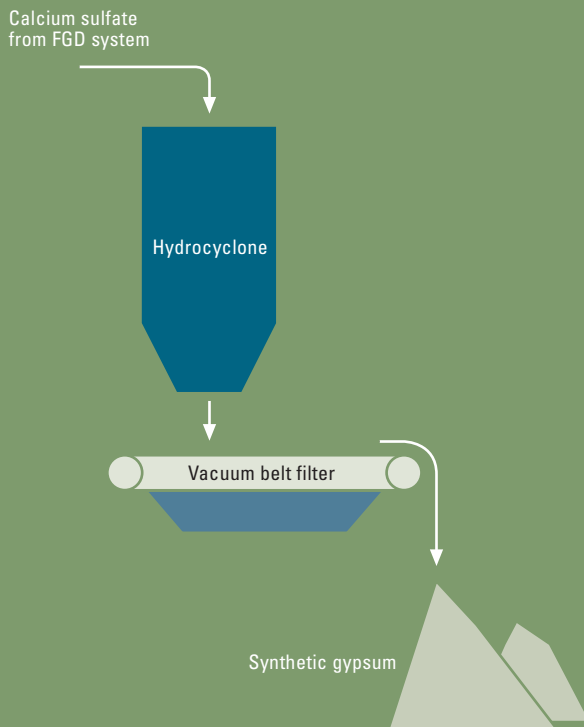
Synthetic Gypsum

Dewatering for a better product

Because the FGD process uses a lot of water, the resulting product has a high moisture content. A dewatering system removes most of the water from the calcium sulfate, making it a more marketable product.

The calcium sulfate passes through a hydrocyclone and on to a belt filter. Vacuum pumps beneath the belt literally suck the water out of the product, leaving it with a 10 percent moisture content. The synthetic gypsum is ready for use.

Gypsum Dewatering Island



How gypsum forms

Synthetic gypsum is a sulfate material that results from the flue gas desulfurization (FGD) or “scrubbing” process at coal-fired power plants. The FGD process removes up to 95 percent of the sulfur dioxide emissions from the plant flue gas.

A slurry of powdered limestone and water is sprayed into the boiler’s flue gas causing a chemical reaction. The calcium carbonate in the limestone reacts with the sulfur dioxide in the flue gas to form calcium-sulfur compounds. The newest FGD technology (forced oxidation) introduces air into the process to convert the solid product into calcium sulfate (synthetic gypsum).

Uses for synthetic gypsum

Calcium sulfate, also known as gypsum, is a harmless compound that most often occurs naturally. Natural gypsum is mined commercially in the United States and elsewhere as a raw material for use in building products such as drywall, cement additives and plaster.

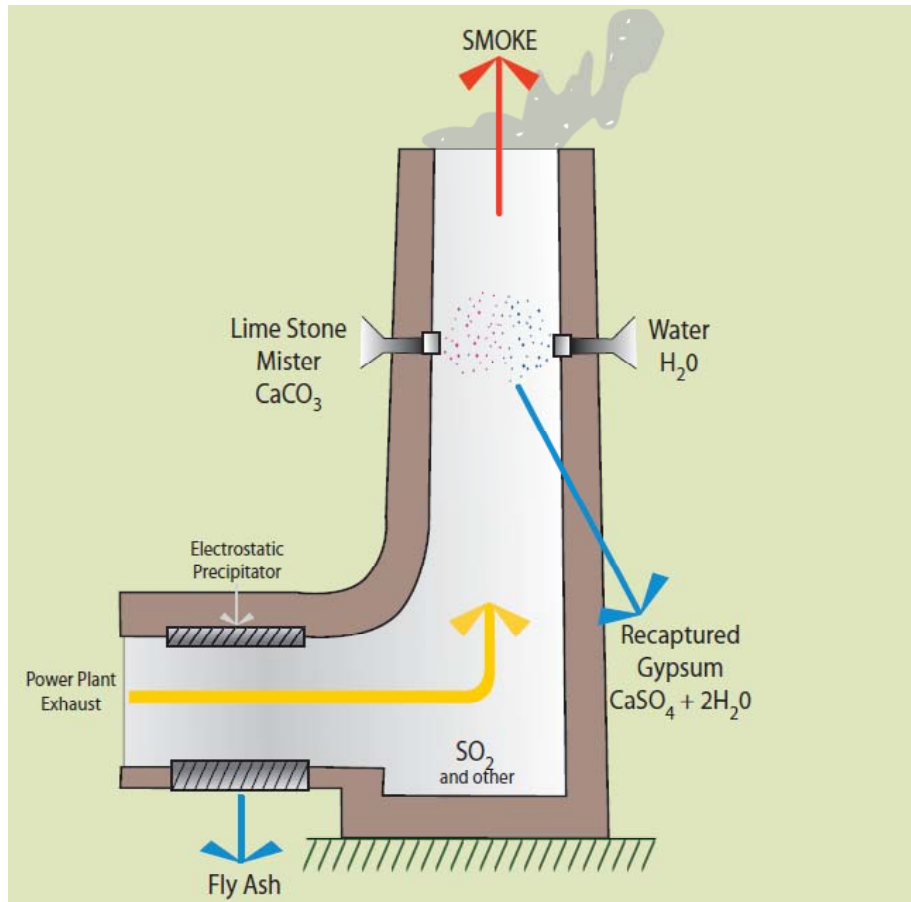
Synthetic gypsum also can be used to manufacture these same building materials, which reduces the need to mine the natural deposits. AEP is working to market the synthetic gypsum produced by its FGD systems for this purpose. Marketing the synthetic gypsum will significantly reduce the amount of material that will need to be disposed.

Managing gypsum in a landfill

Any synthetic gypsum that is produced by the FGD systems that is not marketed can be safely managed in landfills. AEP anticipates that it will not be able to market all of the synthetic gypsum it produces and therefore will likely need to landfill some of this material.

Even though gypsum (calcium sulfate) is considered a benign material, AEP will take the steps necessary (if the material is landfilled) to control surface runoff and protect groundwater resources.

SYNTHETIC GYPSUM FACTS



Synthetic gypsum is identical to mined gypsum. Synthetic gypsum is an environmentally-friendly product made through a controlled process by which limestone and water are used to ‘scrub’ the emissions from coal-fired power plants to create the end product calcium sulfate.

Calcium sulfate is a high purity mineral identical in chemical composition to mined gypsum. This scrubbing process is called ‘flue gas desulfurization’.

The benefits of synthetic gypsum include:

- Conserving natural resources by reducing the amount of natural gypsum mined,
- Reducing disposal costs and reducing the amount of total waste by utilizing the coal emissions of the power plant that would otherwise be placed in a landfill.

CUSTOMER SERVICE
800 621.9523

TECHNICAL SERVICE
800 USG.4YOU

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<http://pinterest.com/usgcorporation/>

USG Securock® Brand Roof Board Samples and Literature

DESCRIPTION	FORM #	COMMODITY CODE
USG Securock® Gypsum-Fiber Roof Board 1/4" sample	RF2A	051155
USG Securock Gypsum-Fiber Roof Board 3/8" sample	RF2B	051156
USG Securock Gypsum-Fiber Roof Board 1/2" sample	RF2C	051157
USG Securock Gypsum-Fiber Roof Board 5/8" sample	RF2D	051158
USG Securock Glass-Mat Roof Board 1/4" sample	RF29A	051162
USG Securock Glass-Mat Roof Board 1/2" sample	RF29B	051163
USG Securock Glass-Mat Roof Board 5/8" sample	RF29C	051164
USG Securock Cement Roof Board 1/2" sample	RF50	050545
USG Securock Gypsum-Fiber Roof Board Submittal Sheet	RF5	430200
USG Securock Glass-Mat Roof Board Submittal Sheet	RF32	438163
USG Securock Cement Roof Board Submittal Sheet	RF51	438426
USG Securock Gypsum-Concrete Patch Submittal Sheet	RF53	—
USG Securock High-Performance Roof Board Product Comparison Guide	RF3	430198
USG Securock Gypsum-Fiber Roof Board Tip Sheet	RF18	900118
USG Securock Roof Board Portfolio Brochure	RF39	438271
USG Securock High-Performance Roof Board Product Binder	RF16	900074
USG Securock Gypsum-Fiber Roof Board Installation DVD - English/Spanish	RF21	437957
USG Securock High-Performance Roof Board Fastener Patterns	RF41	438335
USG Securock High-Performance Roof Board Architectural Specifications	RF43	438336
USG Securock High-Performance Roof Board Applications	RF44	438337