PermaBASE CI™ Insulated Cement Board

06 16 63 / NGC

Technical Information
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DESCRIPTION

PermaBASE CI™ Insulated Cement Board is a composite cement board combining the strength and benefits of PermaBASE® Cement Board combined with rigid insulation to create an ideal substrate for exterior finishes that meet or exceed most continuous insulation requirements. Manufactured in convenient 1, 2 and 3 in. overall thickness, PermaBASE CI utilizes common trims and accessories.

BASIC USES

Applications

PermaBASE CI Insulated Cement Board provides an excellent substrate for many exterior applications, including Cement Board Masonry Veneer Wall System (CBMV) and Cement Board Stucco System (CBSS) where continuous exterior insulation is required. PermaBASE CI allows the combination of exterior finishes on one continuous substrate, providing greater design flexibility. It works well for both commercial exterior and residential exteriors.

Advantages

- Laminated with a R-4, R-10 and R-16 Insulation, PermaBASE CI offers a solution that meets or exceeds energy code requirements.
- NFPA 285 approvals for adhered veneer finishes, such as manufactured and natural stone, thin brick and tile as well as direct applied coatings of synthetic stucco.
- Faster Installation: PermaBASE CI will save time and labor over installing separate insulation and cement board solutions.
- Performance: Made with PermaBASE Cement Board and high-density polyiso insulation that provides durability and highly efficient insulation in one convenient package.
- Mold resistant
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.

INSTALLATION RECOMMENDATIONS

Wall framing: All framing should comply with local building code and design requirements and be designed to provide support with a maximum allowable deflection of at least L/360 under all intended loads. Framing members should be spaced a maximum of 16 in. o.c. Edges of PermaBASE CI parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper PermaBASE CI attachment.

Note: PermaBASE CI can be cut using three methods –

1. Score PermaBASE CI from the foam side using a utility knife to score/cut completely through the insulation and into the back of the cement board. The board can then be snapped. Cut through the mesh on the front of board to complete the cut.
2. While wearing the proper protective equipment, such as safety glasses and approved respirator, use a power saw with the appropriate blade to cut through the entire panel. Penetrations can be created in the panel with a drywall saw.
3. While properly and securely supporting PermaBASE CI, the board can be cut with a traditional hand saw.

Apply PermaBASE CI with ends and edges closely butted, but not forced, together. Stagger end joints in successive courses. Drive fasteners into field of cement board first, working toward ends and edges. Space fasteners maximum 8 in. o.c. with perimeter fasteners at least 3/8 in. and less than 5/8 in. from ends and edges. Ensure PermaBASE CI is tight to framing. Do not overdrive screws to the point they penetrate the fiberglass mesh in PermaBASE CI.

Joint reinforcement: Trowel bonding material to completely fill the tapered recessed board joints and gaps between each panel. On non-tapered joints, apply a 6 in. wide, approximately 1/16 in. thick, coat of bonding material over entire joint. For all joints, immediately embed 4 in. alkali-resistant fiberglass mesh tape fully into applied bonding material and allow to cure. Same bonding material should be applied to corners, control joints, trims or other accessories. Feather bonding material over fasteners to fully conceal.

Control Joints: For exterior installations, consult finish manufacturer for spacing requirements. For exterior tile applications, control joints should be spaced a maximum of every 12 ft. If no recommendation is available, allow a maximum of 16 lineal ft. between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross-furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

Job Name _____

Contractor _____ Date _____

Submittal Approvals: (Stamps or Signatures)

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TECHNICAL DATA

Physical Properties	Method	1"	2"	3"
Dimensional Stability	ASTM D2126	< 0.5%	< 0.5%	< 0.5%
Water Absorption	ASTM C209	< 5.0%	< 5.0%	< 5.0%
Water Vapor Transmission	ASTM E96	< 1.5 perms	< 1.5 perms	< 1.5 perms
Flame Spread	ASTM E84	< 25	< 25	< 25
Smoke Developed	ASTM E84	< 450	< 450	< 450
R-Value	ASTM C518	4	10	16
Dimensions	ASTM C473	1" x 4' x 8'	2" x 4' x 8'	3" x 4' x 8'
Weight		2.2 lbs. / sq. ft	2.4 lbs. / sq. ft	2.6 lbs. / sq. ft

LIMITATIONS

- Treat joints with 4 in. wide alkali-resistant fiberglass mesh tape set in a polymer-modified mortar or stucco basecoat.
- Do not use conventional paper gypsum board tape, joint compound and gypsum board nails or screws.
- Do not exceed 16 in. (406 mm) o.c. as maximum wall framing spacing. Must be designed to limit deflection to L/360 under all live and dead loads.
- Steel framing must be minimum 20-gauge (galvanized) (.0312 in. design thickness) or heavier.
- Do not expose PermaBASE CI to temperatures over 220˚F (105˚C).
- To install properly, follow the instructions of the finish material manufacturer.
- Install a code-approved Weather Resistant Barrier (WRB) to protect the cavity. The type and placement will vary per local building codes and/or manufacturer's specifications, installation guidelines and warranties.
- Do not use PermaBASE CI as a nailing base for other finishes.

Cement Board Stucco Wall System (CBSS)

- Follow finish material manufacturer's instructions for proper installation.
- Treat joints in PermaBASE CI with mesh tape and basecoat.
- Thin veneer construction can reveal planar irregularities in framing.
- Minor cracking at joints may become visible in finished exterior surface.
- Exterior finishes applied directly to PermaBASE CI: Reinforcing mesh must be embedded in basecoat (consult exterior finish manufacturer for additional installation requirements).
- Code-Approved Weather Resistant Barrier (WRB) must first be installed to protect the cavity (type and placement will vary per local building codes and/or manufacturer's specifications, installation guidelines and warranties).

Cement Board Masonry Veneer Wall System (CBMV)

- Sheathing selection and installation varies according to type of wall construction.
- Code-approved Weather Resistant Barrier (WRB) must be installed to protect the cavity (type and placement will vary per local building codes and/or manufacturer's specifications, installation guidelines and warranties).
- Treat joints with alkali-resistant fiberglass mesh tape set in a modified mortar.
- Follow mortar manufacturer's instructions for proper installation.

Handling and Project Conditions

- Avoid water exposure during shipping, handling, storage, installation and after installation of PermaBASE CI to avoid the formation of mold or mildew.
- Store PermaBASE CI off the ground and under cover. Store boards flat. Use sufficient supports extending under the entire length of cement boards to prevent sagging.
- Keep PermaBASE CI dry to minimize the potential for mold growth. Take adequate care while transporting, storing, applying and maintaining PermaBASE CI.
- Do not apply PermaBASE CI with visible signs of moisture damage or mold growth. Do not apply PermaBASE CI over other building materials where conditions exist that are favorable to mold growth.

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, windows and flashings.
- Take immediate and appropriate remediation measures as soon as water leaks or condensation sources are identified.
- Perform routine cleaning and maintenance operations using methods that prevent moisture saturation of cement boards.
- Maintain final wall finishes to protect the cement board as well as the supporting structure.

SIZES AND PACKAGING

Thickness, Width and Length	# of Pcs. per Unit
1" x 48" x 8' (25.4 mm x 1,219 mm x 2,438 mm)	40
2" x 48" x 8' (50.8 mm x 1,219 mm x 2,438 mm)	20
3" x 48" x 8' (76.2 mm x 1,219 mm x 2,438 mm)	16

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RECOMMENDED FASTENERS

The following fasteners have been evaluated for use with PermaBase CI. Refer to screw manufacturer technical data for required spacing and installation instructions.

Manufacturer Recommendations 1" PermaBase CI

	Product Description	Item Number	Website/Phone Number
Triangle Fasteners	3" Concealor Pancake Head Self-Drilling Screw	#14-13x3 in. DP1	*www.trianglefastener.com/ 800-486-1832*
TRUFAST	3" TRUFAST SIP & Nail Base Fastener (for wood installations)	SIPTP-3000	*www.trufast.com 800-443-9602*
TRUFAST	3" TRUFAST SIP & Nail Base Fastener (for steel stud installations)	SIPLD-3000	*www.trufast.com 800-443-9602*
OMG/FastenMaster	3-1/2" Fastenmaster HeadLOK Fastener (for wood installations)	FMHLGM278-500	*www.fastenmaster.com 800-518-3569*
OMG/FastenMaster	3" Fastenmaster HeadLOK Fastener (for steel stud installations)	FMHLSP278-500	*www.fastenmaster.com 800-518-3569*

Manufacturer Recommendations 2" PermaBase CI

	Product Description	Item Number	Website/Phone Number
Triangle Fasteners	4" Concealor Pancake Head Self-Drilling Screw	#14-13x4 in. DP1	*www.trianglefastener.com/ 800-486-1832*
TRUFAST	4" TRUFAST SIP & Nail Base Fastener (for wood installations)	SIPTP-4000	*www.trufast.com 800-443-9602*
TRUFAST	4" TRUFAST SIP & Nail Base Fastener (for steel stud installations)	SIPLD-4000	*www.trufast.com 800-443-9602*
OMG/FastenMaster	4-1/2" Fastenmaster HeadLOK Fastener (for wood installations)	FMHLGM412	*www.fastenmaster.com 800-518-3569*
OMG/FastenMaster	4" Fastenmaster HeadLOK Fastener (for steel stud installations)	FMHLSP004-250	*www.fastenmaster.com 800-518-3569*

Manufacturer Recommendations 3" PermaBase CI

	Product Description	Item Number	Website/Phone Number
Triangle Fasteners	5" Concealor Pancake Head Self-Drilling Screw	#14-13x5 in. DP1	*www.trianglefastener.com/ 800-486-1832*
TRUFAST	5" TRUFAST SIP & Nail Base Fastener (for wood installations)	SIPTP-5000	*www.trufast.com 800-443-9602*
TRUFAST	5" TRUFAST SIP & Nail Base Fastener (for steel stud installations)	SIPLD-5000	*www.trufast.com 800-443-9602*
OMG/FastenMaster	5-1/2" Fastenmaster HeadLOK Fastener (for wood installations)	FMHLGM005-250	*www.fastenmaster.com 800-518-3569*
OMG/FastenMaster	5" Fastenmaster HeadLOK Fastener (for steel stud installations)	FMHLSP005-250	*www.fastenmaster.com 800-518-3569*

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FOR MORE INFORMATION

Architectural Specifications

PermaBASE Building Products CSI MasterFormat®
3-part guide specifications are downloadable as
editable Microsoft® Word documents at: **permabase.com**.

Latest Technical Information and Update

Visit **permabase.com** or call National Gypsum Company Construction Services: 1-800-NATIONAL (628-4662).

Technical Information *Información Técnica*

1-800-NATIONAL®

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

GREENGUARD GOLD

National Gypsum®

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PermaBASE® Building Products

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