PermaBASE WP® Waterproof Cement Board

DESCRIPTION

PermaBASE WP® Waterproof Cement Board combines the strength and benefits of PermaBASE® Cement Board with a proprietary waterproofing formulation. Intended for use in interior wet areas around tubs and showers, PermaBASE WP is perfect for instances where liquid waterproofing has historically been applied over cement boards.

BASIC USES

Applications

PermaBASE WP Cement Board is ideally suited as a substrate for interior tile applications in wet areas where waterproofing is required or desired. PermaBASE WP is intended for use in tubs and showers in instances where liquid waterproofing has historically been applied over cement boards. PermaBASE WP will save contractors time because they only need to waterproof the joints and fastener heads to create a waterproof installation. The increased water resistance and enhanced performance also provides peace of mind for applications outside those wet areas.

Advantages

- **Waterproof Core:** Passes ANSI A118.10 for waterproofness.
- IBC/IRC Compliant. Meets ASTM C1325.
- Eliminates the need for additional waterproofing membrane.
- EdgeTech® Technology allows for closer fastener application of nails or screws at the edge without crumbling or spinout.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Can be cut using a standard utility knife.
- To create a waterproof system, just coat finished joints and fastener heads with liquid waterproofing.
- Achieves UL GREENGUARD Gold Certification for low chemical emissions into indoor air during product usage. For more information, visit: **ul.com/gg**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **calrecycle.ca.gov/greenbuilding/specs/section01350**.

INSTALLATION RECOMMENDATIONS

General: All framing should comply with local building code requirements and be designed to provide support with a maximum allowable deflection of L/360 (L/720 for stone) under all intended loads. Wall framing members shall be spaced a maximum of 16" o.c. and shall be a minimum of 2" x 4" nominal (wood) or 20 gauge (metal). For flooring applications with 16" o.c. floor joists, 5/8" tongue-and groove exterior-grade plywood or 3/4" tongue-and-groove exterior grade OSB may be used. For 19.2" o.c. and 24" o.c. floor joists, 3/4" tongue-and-groove exterior-grade plywood or OSB must be used. Tile size for floors with 24" o.c. floor joists must be 12" x 12" or larger. The joist and subfloor assembly must meet L/360 (L/720 for stone) as well as the appropriate code tables for live and dead loads. Install tile and tile setting materials in accordance with current ANSI specifications and Tile Council of North America (TCNA) guidelines.

Control joints: Consult TCNA Handbook Installation Method EJ171. Architect, builder or design professional must specify location of all control joints. For interior installations, allow a maximum of 30 lineal feet between control joints. A control joint must be installed but not limited to the following locations: where expansion joints occur in the framing or building (discontinue all cross-furring members located behind joint); when boards abut dissimilar materials; where framing material changes; at changes of building shape or structural system; at each story separation. Place control joints at corners of window and door openings, or follow specifications of architect. Control joint cavity shall not be filled with coating or other materials.

Walls

Wall framing: Edges of PermaBASE WP parallel to framing should be continuously supported. Provide additional blocking when necessary to permit proper PermaBASE attachment. Do not install PermaBASE WP directly over protrusions from stud plane, such as heavy brackets and fastener heads. Studs above a shower floor should either be notched or furred to accommodate the thickness of the waterproof membrane or pan. The surround opening for a tub or precast shower receptor should not be more than 1/4" longer than unit to be installed. In mortar bed (mud bed) applications, PermaBASE Cement Boards can be embedded into the mud bed per TCNA Handbook method B415-19. PermaBASE WP: Apply PermaBASE WP with ends and edges closely butted but not forced together. Stagger end joints in successive courses. Drive fasteners into field of board first, working toward ends and edges. Space fasteners maximum 8" o.c. for walls, with perimeter fasteners at least 1/2" and less than 3/4" from ends and edges. Ensure PermaBASE WP is tight to framing. Install screws flush with surface, do not overdrive screws.

(*Continued on page 3)*

Job Name _____

Contractor _____ Date _____

Submittal Approvals: (Stamps or Signatures)

PermaBASE WATERPROOF CEMENT BOARD WP

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TECHNICAL DATA

Physical Properties	PermaBASE WP
Thickness[1], Nominal	1/2" (12.7 mm)
Weight, Nominal	2.5 lbs./sq. ft. (12.2 k/m^2)
Edges	Round
Flexural Strength[1]	≥ 750 psi
Fastener Holding[1] (Wet and Dry)	≥ 90 lbs.
Freeze/Thaw Cycles[10]	> 100
Compressive Strength[11]	1,250 psi
Wind Load[12] (Studs 16" o.c.)	35 psf
Bending Radius	5' (1,524 mm)
Thermal Resistance[3]	R = .37, K = 2.7
Permeance[4]	> 10 perms
Water Absorption[9] (% of Weight)	< 8%
Falling Ball Impact[7] (12" Drop)	Pass
Linear Expansion with Change Moisture[7]	≤ 0.07%
Mold Resistance[5] (ASTM D3273)	Score of 10
Mold Resistance[6] (ASTM G21)	Score of 0
Shear Bond Strength 7 days (psi) **Dry-Set Portland Cement Mortar** **Latex-Portland Cement Mortar** **Organic Adhesives Type 1**	**Test Method** ANSI A118.1 ANSI A118.4 ANSI A136.1
Product Standard Compliance	ASTM C1325
Fire-Resistance Characteristics	
Core Type	N/A
UL Type Designation	PermaBASE PLUS
Surface Burning Characteristics[2]	Class A
Flame Spread[2]	0
Smoke Development[2]	0
Applicable Standards and References	
ANSI A118.9 *Test Methods and Specification for Cementitious Backer Units*	
ASTM C473 *Standard Test Methods for Physical Testing of Gypsum Panel Products*	
ASTM C518 *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*	
ASTM C666 *Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing*	
ASTM C947 *Standard Test Method for Flexural Properties of Thin-Section Glass-Fiber-Reinforced Concrete (Using Simple Beam with Third-Point Loading)*	
ASTM C1325 *Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units*	
ASTM D1037 *Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials*	
ASTM D2394 *Standard Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring*	
ASTM D3273 *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*	
ASTM E84 *Standard Test Method for Surface Burning Characteristics of Building Materials*	
ASTM E96 *Standard Test Methods for Water Vapor Transmission of Materials*	
ASTM E330 *Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference*	
ASTM G21 *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*	
PermaBASE Building Products, LLC Manufacturer Standards, *NGC Construction Guide*	

1. Specified values per ASTM C1325.
2. Tested in accordance with ASTM E84.
3. Tested in accordance with ASTM C518.
4. Tested in accordance with ASTM E96.
5. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
6. Tested in accordance with ASTM G21.
7. Specified values per ASTM C1325, tested in accordance with ASTM D1037.
8. Specified values per ASTM C1325, tested in accordance with ASTM C947.
9. Tested in accordance with ASTM C473, 24-hour immersion.
10. Per ANSI A118.9 procedure B. Tested in accordance with ASTM C666.
11. Tested in accordance with ASTM D2394.
12. Tested in accordance with ASTM E330.

PermaBASE WATERPROOF CEMENT BOARD WP

(*Continued from page 1)*

Joint Reinforcement: Trowel bonding material to completely fill the board joints and gaps between each panel. Apply a 6" wide, approx. 1/16" thick coat of bonding material over entire joint. For all joints, immediately embed 2" alkali-resistant fiberglass mesh tape fully into applied bonding material and allow it to cure. For outside corners, 4" wide alkali-resistant mesh tape is recommended. Same bonding material should be applied to corners, control joints, trims and other accessories. Feather bonding material over fasteners to fully conceal. Bonding material to be modified dry set mortar compliant with ANSI A118.4 standards. To create a waterproof system in wet-area applications, just coat finished joints and fastener heads with liquid waterproofing per manufacturer's recommendations.

Alternate Sealant/Waterproofing Application: (For residential shower and tubs only.) Apply continuous bead of approved sealant to the bottom edge of PermaBASE WP. Install board and ensure that when it is butted at the base, the sealant squeezes out. There must be at least 1/8" gap between PermaBASE WP and base that is completely filled with sealant. Sealant must extend onto PermaBASE WP surface a minimum of 1" beyond joint on either side. Fasten PermaBASE WP to the studs with approved cement board fasteners flush to the surface of the board at a maximum spacing of 6" and within 1/2"–1" of the perimeter edges.

Apply a continuous bead of sealant to the top edge so that when PermaBASE WP is butted the sealant squeezes out. Ensure a tight seal at the joint. Fasten PermaBASE WP to the studs and spread any excess sealant with a putty knife across both sides of joint. Sealant must cover joints to at least 1" beyond either side of the joint.

Once all boards have been installed following this procedure, seal all fasteners with approximately a 2" diameter coating of sealant. Seal all corner joints. All joints should be completely filled with sealant and sealant spread minimum 1" beyond either side of joint.

Handling and Project Conditions

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

Maintenance Following Application

- Maintain essential elements of sound weather-tight building envelope, including roofing, joint sealants, 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 board as well as support the structure.

LIMITATIONS

Interior

- Treat joints with alkali-resistant fiberglass mesh tape set in a modified mortar.
- Do not use conventional paper gypsum board tape, joint compound and gypsum board nails or screws.
- Do not exceed 16" (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" design thickness) or heavier.
- Do not use with vinyl flooring.
- Do not expose PermaBASE WP to temperatures over 220˚F (105˚C).
- Do not use PermaBASE WP as a nailing base for other finishes.

SIZES AND PACKAGING

Thickness, Width and Length	# of Pcs. per Unit
1/2" x 36" x 5' (12.7 mm x 914 mm x 1,524 mm)	50
1/2" x 48" x 8' (12.7 mm x 1,219 mm x 2,438 mm)	40

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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®
1-800-628-4662

National Gypsum Company is the exclusive service provider for products manufactured by PermaBASE Building Products, LLC.

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

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

National Gypsum®

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PermaBASE®
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