PermaBase® BRAND Cement Board

09 28 00/NGC

Technical Information:
800-NATIONAL
800-628-4662

Description

PermaBase® BRAND Cement Board is a rigid substrate made of Portland cement, aggregate and glass mesh. It has an exceptionally hard, durable surface that can withstand prolonged exposure to moisture.

Use it as an underlayment or backing surface in a variety of interior and exterior applications, including (but not limited to) tub and shower surrounds, countertops, flooring, and for cement board stucco and adhered masonry veneer wall systems.

Basic Uses

APPLICATIONS

Interior

PermaBase® Cement Board is a superior underlayment for many interior applications, including kitchen countertops and backsplashes; bathroom shower and tub enclosures, garden and whirlpool tubs, and steamrooms and saunas; flooring for kitchens, bathrooms, entryways, foyers and laundry rooms; walls for bathrooms, accent areas and fireplaces; and special additions, such as swimming pool and whirlpool decks and enclosures.

Exterior

PermaBase provides an excellent substrate for many in-demand exterior applications, including Cement Board Masonry Veneer Wall System (CBMV), Cement Board Stucco System (CBSS), Continuous Insulation (CI), and Exterior Insulation and Finish Systems (EIFS). PermaBase allows the combination of exterior finishes on one continuous wall sheathing, providing greater design flexibility. It works well for commercial exteriors, residential exteriors, outdoor kitchens and decks.

ADVANTAGES

- Allows for closer fastener application of nails or screws at the edge without crumbling or spinout – reinforced with patented EdgeTech® Technology.
- Use as a substrate for direct-applied finishes, tile, stone and thin brick in exterior applications (as outlined in ICC-ES Evaluation Report ESR-1510).
- Use in combustible and non-combustible construction under the IBC and IRC (as outlined in ICC-ES Evaluation Report ESR-1510).
- 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 and straightedge. With the unique PermaBase core composition, little or no additional labor is needed to clean the edge after a cut.
- Is impact resistant, extremely durable and dimensionally stable. It has excellent overall flexural, compressive and tensile strength characteristics.
- Is highly moisture resistant, and will not rot, disintegrate or swell when exposed to water.
- Use 1/2 in. (12.7 mm) PermaBase® in 1-hour and 2-hour rated assemblies (UL Classified).
- Achieves the lowest water-absorption rating of any cement board per ASTM C473, offering better installation.
- 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**.
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: **http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/**.

Heat Shield Applications

- UL approved for heat shield/wall protector per ANSI/UL 1618 and ULC 632.
- Protects combustible walls.
- Reduces required clearance from wall by 40 percent.
- Lightweight and easy to install.

Cement Board Stucco Wall System

- Appropriate for all climates and resists the growth of mold and mildew.
- Extremely durable with increased resistance to impact and inclement weather.
- Acrylic polymers provide more resistance to fading, cracking and peeling.
- Engineered system that allows a faster installation while providing superior quality control (manufactured product that must comply with ASTM product specifications).
- Provides a 15-year exterior warranty – the industry's best.

(Continued on page 3)

Job Name: _____

Contractor: _____

Date: _____

Submittal Approvals: (Stamps or Signatures)

TECHNICAL DATA

PHYSICAL PROPERTIES		
	1/2" PermaBase	**5/8" PermaBase**
Thickness[1], Nominal	1/2" (12.7 mm)	5/8" (15.9 mm)
Weight, Nominal	2.9 lbs./sq. ft. (14.2 k/m^2)	3.65 lbs./sq. ft. (17.8 k/m^2)
Edges	Round	Round
Flexural Strength[8]	≥ 750 psi	≥ 750 psi
Fastener Holding[7] (Wet and Dry)	≥ 90 lbs.	≥ 90 lbs.
Freeze/Thaw Cycles[10]	100	100
Compressive Strength[11]	1,250 psi	1,250 psi
Wind Load[12] (Studs 16" o.c.)	40 psf	40 psf
Bending Radius	5' (1,524 mm)	5' (1,524 mm)
Thermal Resistance[3]	R = .37, K = 2.7	R = .47, K = 2.7
Permeance[4]	> 10 perms	>10 perms
Water Absorption[9] (% of Weight)	< 8%	< 8%
Falling Ball Impact[7] (12" drop)	Pass	Pass
Linear Expansion with Change Moisture[7]	≤ 0.07%	≤ 0.07%
Mold Resistance[5] (ASTM D3273)	Score of 10	Score of 10
Mold Resistant[6] (ASTM G21)	Score of 0	Score of 0
Product Standard Compliance	ASTM C1325	ASTM C1325
Fire-Resistance Characteristics		
Core Type	N/A	N/A
UL Type Designation	PermaBase	PermaBase
Surface Burning Characteristics[2]	Class A	Class A
Flame Spread[2]	0	0
Smoke Development[2]	0	0
Applicable Standards and References		
ASTM 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 Non-Asbestos 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 G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi		
National Gypsum Company, *NGC Construction Guide*		

1. Specified values per ASTM C1325, tested in accordance with ASTM C473.
2. Tested in accordance with ASTM E84.
3. Tested in accordance with ASTM C518.
4. Tested in accordance with ASTM E96.
5. Tested in accordance with ASTM D3273.
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 ASTME330.

(Advantages continued from page 1)

Cement Board Masonry Veneer Wall System (CBMV)

- Engineered system that allows a faster installation while providing superior quality control (manufactured product that must comply with ASTM product specifications).
- Increased performance by utilizing polymer modified adhesive mortars.
- Extremely durable with increased resistance to impact and inclement weather.
- Approved for use in ASTM C1780, and cement board is cited as an approved substrate for this system by the Masonry Veneer Manufacturers Association (MVMA): Installation Guide and Detailing Options for Compliance with ASTM C1780.
- Easily allows for the inclusion of continuous insulation into the assembly.
- Appropriate for all climates and resists the growth of mold and mildew.
- Speed up your schedule – faster, easier and cleaner than traditional metal lath/scratch coat method.
- IBC/IRC Compliant. Meets ASTM C1325.
- PermaBase is approved as a substrate for direct-applied finishes, tile, stone and thin brick in exterior applications, as outlined in ICC-ES Evaluation Report ESR-1510.
- PermaBase is suitable for use in combustible and non-combustible construction under the IBC and IRC, as outlined in ICC-ES Evaluation Report ESR-1510.

SIZES AND PACKAGING

Thickness, Width and Length per Unit		# of Pcs.
PermaBase		
1/2" x 32" x 5'	(12.7 mm x 813 mm x 1,524 mm)	50
1/2" x 32" x 8'	(12.7 mm x 813 mm x 2,438 mm)	50
1/2" x 36" x 4'	(12.7 mm x 914 mm x 1,219 mm)	50*
1/2" x 36" x 5'	(12.7 mm x 914 mm x 1,524 mm)	50
1/2" x 36" x 6'	(12.7 mm x 914 mm x 1,829 mm)	50*
1/2" x 36" x 8'	(12.7 mm x 914 mm x 2,438 mm)	30
1/2" x 48" x 8'	(12.7 mm x 1,219 mm x 2,438 mm)	30
5/8" x 36" x 5'	(15.9 mm x 914 mm x 1,524 mm)	35
5/8" x 48" x 8'	(15.9 mm x 1,219 mm x 2,438 mm)	24
3/8" x 48" x 8'	(9.5 mm x 1,219 mm x 2,438 mm)	40*
3/8" x 36" x 5'	(9.5 mm x 914 mm x 1,524 mm)	50*
3/4" x 48" x 8'	(19.1 mm x 1,219 mm x 2,438 mm)	20*
PermaBase Underlayment		
1/4" x 48" x 4'	(6.4 mm x 1,219 mm x 1,219 mm)	60
1/4" x 36" x 5'	(6.4 mm x 914 mm x 1,524 mm)	60

*Special Order

For More Information

ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI Master Format® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: **nationalgypsum.com.**

LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: **nationalgypsum.com.**

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

Perma BASE® BRAND Cement Board

National Gypsum®

2001 Rexford Road
Charlotte, NC 28211

(704) 365-7300

NationalGypsum.com
AskForPurple.com
permabase.com