

Durock® Cement Board



Backerboard for ceramic tile and exterior finish systems

- Lightest cement board in the industry
- Environmentally sustainable product—lower weight reduces embodied energy and embodied emissions
- Water-durable, mold-resistant substrate for high-moisture areas
- Suitable for use in interior or exterior applications
- Will not rot, warp, delaminate or disintegrate
- Easy to cut and fasten
- Non-combustible

Description

DUROCK cement board offers architects, builders and tile contractors a strong, water-durable tile base for tub and shower areas. Also an ideal underlayment for tile on floors and countertops in new construction and remodeling. Board is readily applied over wood or steel framing spaced 16" o.c. with corrosion-resistant wood or steel screws or hot-dipped galvanized roofing nails. After joints are treated, ceramic wall or floor tile is applied using latex fortified mortar or Type I organic adhesive.

DUROCK cement board is preferred by many applicators as a base for directly applied finishes, tile, stone and thin-brick used in building exteriors.

Product Data	Sizes and Packaging	Size (thickness x width x length) ¹	Units (pcs) ²
		1/2" x 32" x 5'	50
		1/2" x 36" x 5'	50
		1/2" x 32" x 8'	30
		1/2" x 48" x 8'	30
		5/8" x 36" x 5'	30
		5/8" x 48" x 8'	24
		5/16" x 48" x 4'	40
		5/16" x 36" x 5'	50

1. Other lengths available. Contact your USG Representative. 2. Shipped in packaging units as shown.

Standards DUROCK cement board exceeds ANSI standards for cementitious backer units (CBU). See ANSI A118.9 for test methods and specifications for CBU and ANSI A108.11 for interior installation of CBU. Exceeds industry standards as an exterior substrate for exterior finishes. Exceeds ASTM C1325 standards for non-asbestos fiber-mat reinforced cementitious backer units.

Availability DUROCK cement board is distributed throughout the United States. Contact a United States Gypsum Company sales office or sales person for additional information.

Composition and Materials DUROCK cement board is formed in a continuous process of aggregated portland cement slurry with polymer-coated, glass-fiber mesh completely encompassing edges, back and front surfaces. The edges are formed smooth. The ends are square cut.

Delivery and Storage of Materials All materials should be delivered and stored in their original unopened package and stored in an enclosed shelter providing protection from damage and exposure to the elements. Even though the stability and durability of DUROCK cement board is unaffected by the elements, moisture and temperature variations may have an effect on the bonding effectiveness of basecoats and adhesives. Store all DUROCK cement board panels flat.

Environmental Conditions In cold weather and during DUROCK cement panel and tile installation, temperatures within the building shall be maintained within the range of 40 to 100 °F. Adequate ventilation shall be provided to carry off excess moisture.

Interior Applications Wood framing shall approximate the moisture content it will reach in service by allowing the enclosed building to stand as long as possible prior to the application of the cement board. Do not install board when the board is wet.

Exterior Applications Finishes, leveling/skim coats and basecoats shall not be applied to DUROCK cement panel that is wet or frozen or that contains frost. After application, and for at least 24 hours, finishes, leveling/skim coats and basecoats shall be effectively protected from rain and excessive moisture. In cold weather and during finish applications, DUROCK cement panel, skim or basecoat, mortar, finish material and air temperature must be at least 40 °F, and must remain at this temperature or higher for at least 24 hours after application. Hot and dry weather may affect working time of leveling/skim or basecoat and finish materials. Under rapid drying conditions, dampening or light fogging of board, leveling/skim or basecoat surface may be required to improve workability.



Panel Micro-Cracking

DUROCK cement 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.

Installation

- A. Install cement board with ends and edges closely abutted, but not forced together. Stagger end joints in successive courses.
- B. For flooring applications over a wood-based substrate, laminate DUROCK to subfloor using Type 1 organic adhesive or latex-modified thin-set mortar suitable for bonding cement board. Fasten to subfloor with 1-1/4" DUROCK™ tile backer screws for wood framing (or equivalent) or 1-1/2" hot-dipped galvanized roofing nails spaced 8" o.c. in both directions with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Drive nails and screws so that bottoms of heads are flush with panel surface to ensure firm panel contact with sub floor. Do not overdrive fasteners. Prefill joints with tile-setting mortar or adhesive and then immediately embed DUROCK™ tile backer tape and level joints.
- C. For wall application, fasten DUROCK panels to framing with specified fasteners. Drive fasteners into field of panels first, working toward ends and edges. Hold panels in firm contact with framing while driving fasteners. Space fasteners maximum 8" o.c. for walls, 6" o.c. for ceilings, with perimeter fasteners at least 3/8" and less than 5/8" from ends and edges. Drive nails and screws so that bottoms of heads are flush with panel surface to ensure firm panel contact with framing. Do not overdrive fasteners. 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). Prefill joints with tile-setting mortar or adhesive and then immediately embed DUROCK™ tile backer tape and level joints.
- D. Cement board should be cut to size with a knife and straight edge. A power saw should be used only if it is equipped with a dust-collection device. Installer should wear NIOSH/MSHA-approved dust mask.
Refer to current United States Gypsum Company literature piece SA932 for complete installation information, including good design practices. For technical assistance, call USG Technical Service at 800.USG.4YOU (874.4968).

Limitations

1. Designed for positive or negative uniform loads up to 60 psf. For complete information on the use of DUROCK panels in exterior systems, consult uniform load table on page 3 for applicable positive or negative uniform loads on wall systems.
2. Wall applications: Maximum stud spacing: 16" o.c. (24" o.c. for cavity shaft wall assembly). Framing shall be designed (based on stud properties alone) not to exceed L/360 deflection for tile and thin brick, L/240 for direct-applied exterior finish systems. Maximum fastener spacing: 8" o.c. for wood and steel framing; 6" o.c. for ceiling applications.
3. Floor applications: Maximum joist spacing 24" o.c. The subfloor system should be designed with a minimum deflection limit of L/360 for the span. Some finish materials may require a more rigid sub-assembly (such as large format tile and natural stone products). In these cases, follow the manufacturer's minimum requirements. The subfloor should be APA Span-Rated Plywood or OSB with an Exposure 1 classification or better with tongue and groove or back blocked at the unsupported edges.
4. Maximum dead load for ceiling system is 7.5 psf.
5. Steel framing must be 20-gauge equivalent or heavier.
6. Do not use drywall screws or drywall nails. Do not use drywall joint tape.
7. Do not use 5/16" DUROCK cement board for wall or ceiling applications.
8. Do not use DUROCK cement board with vinyl flooring.
9. Durock cement board is not designed for use as a structural panel.

Technical Data

Property	Unit of Measure	ASTM Test Method	1/2" Cement Board Typical Value	5/16" Underlayment Typical Value
Flexural strength	psi	C947	> 750	> 1000
Indentation strength	psi	D2394	> 1250	> 1250
Shear bond strength	psi	ANSI A118.4	> 50	> 50
Water absorption	% by wt. 24 hrs.	C473	15	15
Nail-pull resistance	lb. (0.4" head diameter, wet or dry)	C473	> 90	—
Weight	psf	C473	2.4	2.0
Freeze/thaw resistance	procedure B, number of cycles with no deterioration	C666	100	100
Mold resistance	—	G21	No growth	No growth
Non-combustibility	Pass/Fail	E136	Pass	Pass
Surface burning characteristics	flame/smoke	E84	0/0	0/0
Thermal	"R"/k value	C518	0.39/1.27	—
Standard method for evaluating ceramic floor tile installation systems	Passes cycles 1-6	C627	Light Commercial	Light Commercial
Minimum bending radius	ft. (requires special framing—details available upon request)	—	6	—

**Uniform Load —
1/2" Durock
Cement Board**

Stud Spacing	Fastener Spacing	Design Wind Load (I/240)	Design Wind Load (I/360)
12" o.c.	8" o.c.	45 psf	45 psf
	6" o.c.	60 psf	60 psf
16" o.c.	8" o.c.	33 psf	30 psf
	6" o.c.	45 psf	30 psf
24" o.c. (for shaft wall assemblies only)	8" o.c.	13 psf	9 psf
	6" o.c.	13 psf	9 psf

Submittal Approvals:

Job Name		
Contractor		Date

Product Information

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

Warning

Portland cement is strongly alkaline. Direct contact can be corrosive and cause severe damage or chemical burns to the eyes and wet or moist skin. Avoid contact with eyes and skin. Wear eye protection, alkali-resistant protective gloves, long-sleeved shirts and pants to prevent direct contact. If eye contact occurs, immediately flush thoroughly with water for 30 minutes and

seek medical advice. Inhalation of dust may be corrosive or cause chemical burns or irritation to nose, throat and respiratory tract. Avoid breathing dust. Use in a well-ventilated area or provide sufficient local ventilation. If dusty, wear a NIOSH/MSHA-approved dust respirator. Wash thoroughly with soap and water after use. Do not ingest. If ingested, call physician. If cutting board with a power tool, use a wet or vacuum saw to reduce the amount of dust generated. Panels are heavy and can fall over, causing

serious injury or death. Avoid creating a tripping hazard and do not exceed floor limit loads. Long-term breathing of respirable crystalline silica dust can cause permanent lung damage and/or cancer. 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: USG, Durock and USG in stylized letters.

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 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.

