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# Cement Board Construction



## Cement Board Products

DUROCK Brand Cement Board offers architects, builders and tile contractors a strong, water-durable base for ceramic and stone tile in tub and shower areas. It also serves as an ideal abuse-resistant and fire-resistant substrate for veneer plaster in walls, and ceramic tile, quarry tile, lugged tile, thin stone tile, thin brick, glass and ceramic mosaics, or aggregate in both walls and floors.

The board is readily applied over load-bearing or nonload-bearing wood or steel framing to produce extraordinary, high-performance systems.

A panel product, DUROCK Brand Cement Board is formed in a continuous process that consists of an aggregated portland cement core reinforced with polymer-coated, glass-fiber mesh embedded in both surfaces and wrapped around the edges. Its composition also makes it noncombustible and dimensionally stable.

DUROCK Brand Cement Board products are highly versatile. In addition to interior applications, panels are available for exterior applications such as fences, mobile home skirting, agricultural buildings, wall shields, floor protectors, exterior chimneys and garage wainscot, to name a few. See Chapter 6 for veneer plaster applications over DUROCK Brand Cement Board.

Various organizations provide information about recommended standards or tolerances for installation of cement board systems. See pages 435 and 442 in the Appendix for information about standards and tolerances.

For instructions on the safe use of cement board and related products, see Chapter 13, Safety Considerations, Material Handling.

### Cement Board Sizes<sup>(1)</sup> and Packaging

Type	Thickness	Width	Lengths	Shipping Units <sup>(2)</sup>
Cement Board	12.7 mm (1/2")	810 mm (32")	1525 mm (5')	50
	12.7 mm (1/2")	915 mm (3')	1220, 1524, 1829 mm (4', 5', 6')	50
	12.7 mm (1/2")	915 mm (3')	2440 mm (8')	30
	12.7 mm (1/2")	1220 mm (4')	2440 mm (8')	30
	15.9 mm (5/8")	1220 mm (4')	2440 mm (8')	24
Underlayment	8 mm (5/16")	1220 mm (4')	1220 mm (4')	40
	8 mm (5/16")	915 mm (3')	1525 mm (5')	40

(1) Other lengths available. Contact your CGC Representative.

(2) Stretch wrapped and shipped in packaging units as shown.

**DUROCK Brand Cement Board** Especially sized and formulated for use in interior areas that may be subject to water or high moisture/humidity conditions, such as bathtub or shower enclosures, gang showers, bathroom floors, bath and kitchen counter tops and steam rooms.

Aggregated portland cement core resists water penetration and will not deteriorate when wet.

DUROCK Brand Cement Board is a superior substrate for ceramic tile, slate and quarry tile on all interior surfaces. Panels are manufactured in three widths for minimum cutting and easy handling and installation.

Use larger panel sizes for larger projects such as commercial kitchens and gang showers. Smaller panels are designed to fit typical tub and shower enclosures. Also UL/ULC-listed as a wall shield and floor protector for room heaters and stoves.

DUROCK Brand Cement Board exceeds the ANSI Standards for cementitious backer units (CBU). See ANSI A 118.9 for Test Methods and Specifications for CBU; and ANSI A 118.9 for Interior Installation of CBU. The ASTM designation for DUROCK Brand Cement Board is C1325. See National Evaluation Service Reports No. 259 and No. 396 for fire-resistant designs and/or conditions of use. Reports are subject to re-examination, revisions and possible changes. All DUROCK Brand Cement Board Products meet ASTM Standard E136 for noncombustibility. UL listed 34L2.

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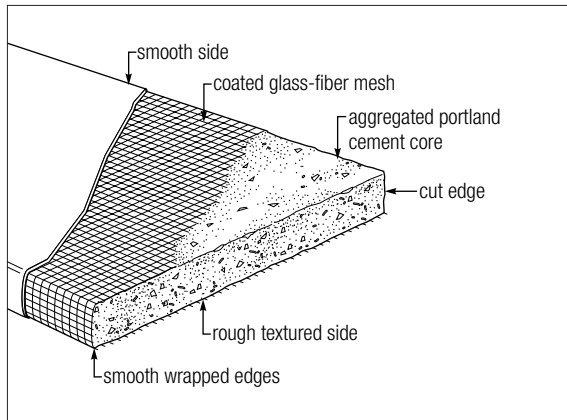
### DUROCK Brand Cement Board Limitations

1. Steel framing must be 20-ga. or heavier.
2. Systems using DUROCK Brand Exterior Cement Board are designed for positive or negative uniform loads of up to 2.4 kPa (50 psf) with studs spaced max. 400 mm (16") o.c.
3. Maximum stud spacing: 400 mm (16") o.c. (600 mm (24") o.c. for cavity shaft wall assembly, requires intermediate adhesive bead); maximum allowable deflection, L/360. Maximum fastener spacing: 200 mm (8") o.c. for wood and steel framing on floors and walls; 150 mm (6") o.c. for ceiling applications.
4. Maximum dead load for ceiling system is 37 kg/m<sup>2</sup> (7.5 psf), including cement board.
5. Do not use drywall screws or drywall nails, as they do not provide adequate holding capacity.
6. Not recommended for vinyl flooring.
7. 8 mm (5/16") thickness should not be used for walls or ceilings.
8. Drywall joint compounds must not be used directly over cement board unless it is properly sealed; see page 153.

**Note:** DUROCK cement board product may also be used in exterior soffits, walls, privacy fences and chimney enclosures. It also has proved to be an excellent substrate for exterior insulation and finish systems (EIFS) as well as direct-applied exterior finish systems.

**DUROCK Brand Underlayment** A strong, thin substrate designed for use under ceramic or thin-cut stone tile floors and countertops. DUROCK Brand Underlayment is similar in composition to DUROCK Brand Cement Board. Because its primary use is for overlaid ceramic tile floors, it comes in convenient 1220 x 1220 mm (4' x 4') panels and is 8 mm (5/16") thick. This slimmer thickness reduces the variation in level between the ceramic tile floor and abutting carpet or wood floors. The reduced thickness also eliminates the need to cut down entry doors in threshold applications and allows easier installation of kitchen appliances such as dishwashers. Not

*Durock Brand Cement Board features.*



for use over exposed framing; requires underlaid substrate material such as plywood for structural support. May be applied directly over old substrate on countertops to save time.

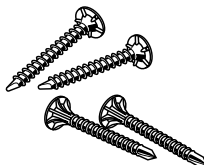
**Durock Brand Cement Board**

**Typical Physical Properties**

Property	ASTM Test reference	Cement board value	Underlayment value
Flexural strength—psi	C947	5.17 Mpa (750)	8.62 Mpa (1250)
Indentation strength—psi 1" dia. disc @ 0.02" indent.	D2394	2300	2300
Uniform load—studs 16" o.c.	—	1.44 kPa (30 max. psf)	—
Water absorption-% by wt. 24 hrs.	C473-84	10	10
Nail pull resistance—lb. 0.4" head diameter (wet or dry)	C473-84	125	—
Weight	C473-84	15 kg/m <sup>2</sup> (3 psf)	9.8 kg/m <sup>2</sup> (2 psf)
Freeze/thaw resistance—Procedure B number of cycles with no deterioration	C666-84	100	100
Surface burning characteristics—flame/smoke	E84	5/0	5/0
Thermal "R"/k value	C177	0.26/1.92	—
Standard method for evaluating ceramic floor tile installation systems	C627	Residential	Residential
Min. bending radius <sup>(1)</sup>	—	2440 mm (8 ft.)	—

(1) Requires special framing. Details available on request.

## DUROCK Brand Accessory Products

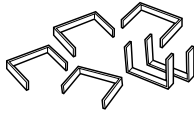


*Durock Brand Wood (above) and Steel Screws (below)*

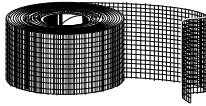
**Durock Brand Wood and Steel Screws** developed especially for use with Durock Brand Cement Boards. All Durock Brand Screws are made with a special corrosion resistant coating that is superior to cadmium plating or zinc. Wafer head design with countersinking ribs allows flush seating while preventing strip-outs. Increased bearing surface provides greater pull-through resistance. Drywall screws do not provide adequate pull-through resistance and must not be used. For 14 to 20-ga. steel framing, use 32 mm (1-1/4") and 41 mm (1-5/8") Durock Brand Steel Screws. For wood framing, use 32 mm (1-1/4"), 41 mm (1-5/8") or



Hot-Dipped Galvanized  
Roofing Nails



Galvanized Staples



Durock Brand Alkali-  
Resistant Tape

57 mm (2-1/4") DUROCK Brand Wood Screws. Packaging: 32 mm (1-1/4") screws, 5,000 pieces per carton, 41 mm (1-5/8") screws, 4,000 pieces per carton; 57 mm (2-1/4") screws, 2,000 pieces per carton. Assure minimum thread penetration of 19 mm (3/4") into steel framing and 12.7 mm (1/2") into wood framing.

**Nails** 38 mm (1-1/2") hot-dipped galvanized roofing nails may be used for DUROCK Brand Cement Board wood framing or DUROCK Brand Underlayment to wood sub floor.

**Staples** 6.4 x 22 mm (1/4" x 7/8") galvanized staples may be used only for DUROCK Brand Underlayment attachment to wood sub floor.

**Durock Brand Interior Tape** A specially designed, alkali-resistant tape for use with DUROCK Brand Cement Board. Tape is 50 mm (2")-wide, polymer-coated, open glass-fiber mesh. Packaging: 50 mm (2") (nom.) x 15 m (50') rolls; 20 rolls per carton.

**Adhesives, Mortars and Grout** Use only adhesive products compatible with alkaline or portland cement-based substrates. Multipurpose adhesive for subfloor attachment to framing must meet ASTM C557-73; ceramic tile adhesive must be Type I, meeting ANSI A136.1; dry-set mortar mixed with acrylic latex additive must meet ANSI A118.1; latex portland cement mortar must meet ANSI A118.4; and grout must meet ANSI A118.6.

## Job Preparation and Design Considerations

### Estimating

Estimate material requirements for DUROCK Brand Cement Board applications in much the same manner used for estimating gypsum drywall applications. There are, however, certain important differences.

Measure surface area "solid," ignoring cutouts for doors and windows. Use 12.7 mm (1/2") or 15.9 mm (5/8") DUROCK Brand Cement Board as necessary to match adjacent gypsum panel thickness. Both panel thicknesses may be used for wall and ceiling applications. 15.9 mm (5/8") DUROCK Brand Cement Board may be substituted for 12.7 mm (1/2") DUROCK Brand Cement Board to meet surface dimension requirements without affecting the fire-rated performance of fire-rated assemblies that call for 12.7 mm (1/2") DUROCK Brand Cement Board.

Fastener spacing requirements are 200 mm (8") for walls and floors and 150 mm (6") for ceilings—considerably more frequent than for drywall construction. Plan for fasteners accordingly. Average usage—1,600 pcs./100 m<sup>2</sup> (1,000 sq. ft.)

A water barrier, not a vapor retarder, may be required behind cement board in many applications. Water barrier must be Grade D building paper, No. 15 asphalt felt or equivalent. Ensure that total square footage of water barrier exceeds total square footage of cement board to take into account material overlaps required to prevent moisture penetration.

To estimate quantities of mortars, grouts and adhesives, consult packaging and coverage information for those products.

## Environmental Conditions

All materials should be delivered and stored in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Even though the stability and durability of Durock Brand Cement Board is unaffected by the elements, moisture and temperature variations may have an effect on the bonding effectiveness of basecoats and adhesives.

Various humidity and temperature conditions may require a vapor retarder. A qualified engineer should be consulted to determine the proper location of the retarder to prevent moisture condensation within the wall.

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## Control Joints

Certain interior wall surface constructions should be isolated with surface control joints (sometimes referred to by the industry as expansion joints) or other means where: (a) a wall abuts a structural element or dissimilar wall or ceiling; (b) construction changes within the plane of the wall; (c) tile and thin brick surfaces exceed 4880 mm (16') in either direction. Surface control joint width should comply with architectural specifications. Location and design of building control joints must be detailed by a professional architect. Steel framing at building control joints that extend through the wall (with top and bottom runner tracks broken) should have 38 mm (1-1/2") cold-rolled channel alignment stabilizers spaced a maximum of 1525 mm (5'0") o.c. vertically. Channels should be placed through holes in the stud web of the first two adjacent studs on both sides of the joint and securely attached to the first adjacent stud on either side of the joint. (See Durock Brand Cement Board Systems publication SA932 for further information.)

Cement board should be separated at all surface and building control joints. Where vertical and horizontal joints intersect, the vertical joint should be continuous and the horizontal joint should abut it. Splices, terminals, and intersections should be caulked with a sealant complying with architectural specifications and sealant manufacturer recommendations. Do not apply tile or finishes over caulked, sealed expansion joints.

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## High Moisture Areas

**Pool Enclosures** Cement board systems may be used for the walls and ceilings around indoor swimming pools. In areas of high moisture and chlorine content, adequate consideration should be given for ventilation to protect against deterioration of metal hangers and framing members.

**Steam Rooms and Saunas** Where temperatures exceed 49°C (120°F) for extended periods, use dry-set or latex-portland cement mortar; do not use organic adhesive.

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## Leaching and Efflorescence

Latex leaching and efflorescence are natural phenomena which occur with the use of latex modified mortars and grouts through no fault in the products. To help protect against their occurrence, follow current manufacturer guidelines and recommendations.

# Applications

## Framing

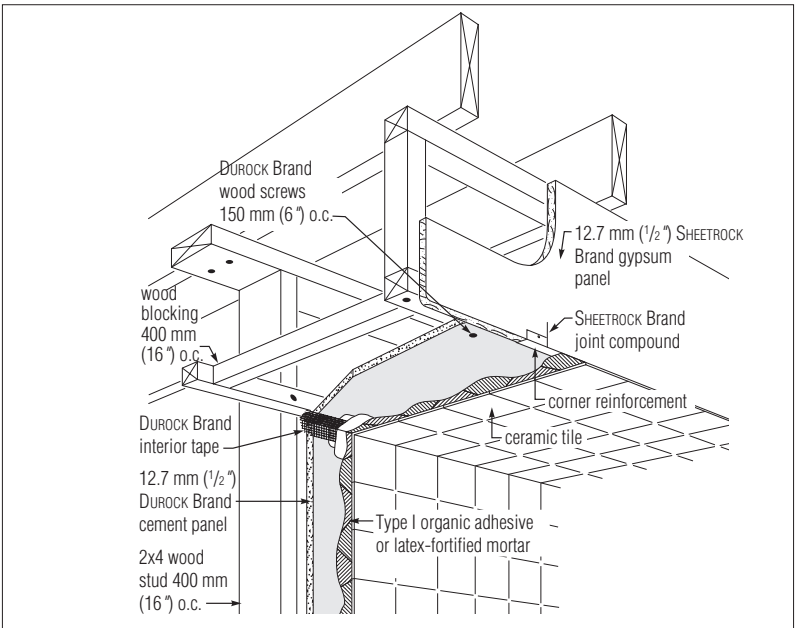


Frame spacing for Durock Brand Cement Board attachment must not exceed 400 mm (16") o.c. (600 mm (24") o.c. for UL Design U459). Studs of freestanding furred walls must be secured to exterior wall with furring brackets or laterally braced with horizontal studs or runners spaced 1220 mm (4') o.c. max. Laterally brace all steel-framed walls prior to application of joint treatment. If necessary for tub or shower surround applications, fur out studs to allow fixtures and components to be flush with ceramic tile face. Install appropriate blocking or headers to support tub and other plumbing fixtures and to receive soap dishes, grab bars, towel racks and other accessories and hardware.

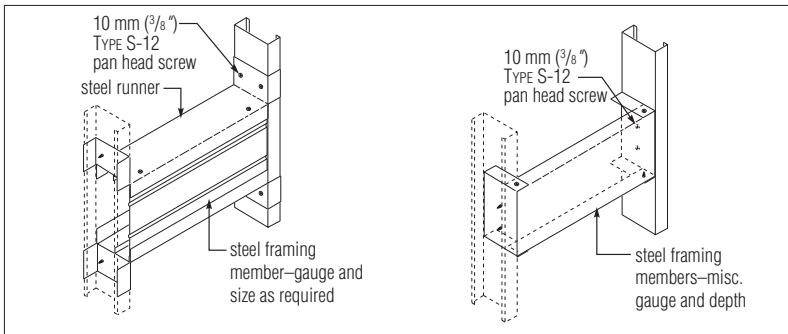
Ceiling framing must be capable of supporting the total ceiling dead load, including insulation, ceramic tile, bonding materials and tile-backer board, with deflection not exceeding  $L/360$ .

Floor framing must be covered with min. 19 mm (3/4") exterior grade plywood subfloor firmly attached to assure stability. Apply 9.5 mm (3/8") bead of multipurpose adhesive to center of top flange of joists. Place plywood panels with long dimension across or parallel to wood or steel joists spaced max. 400 mm (16") o.c. Fasten to steel joists with 49 mm (1-15/16") pilot point TYPE S-12 screws spaced 400 mm (16") o.c. Fasten plywood to wood joists with suitable nails or screws spaced 300 mm (12") o.c. or as required by code.

For countertops, install min. 19 mm (3/4") exterior grade plywood base across wood cabinet supports spaced 400 mm (16") o.c. Position ends and edges over supports.



Wood soffit framing



Fixture attachment—steel framing

## Fixture Attachment

Framing and bracing must be capable of supporting the partition elements and fixture additions within L/360 allowable deflection limit. Install bracing and blocking flush with the face of the framing to keep the stud faces smooth and free of protrusions.

Heavy gauge metal straps mounted on the studs are not recommended supports because the metal thickness and/or screwheads used to attach them cause bowing in the board and interfere with the flat, smooth application of the cement board and ceramic tile. When heavy anchor plates must be used, fur out studs with a metal strap or wood shim to provide an even base for the cement board.

If required, the board may be ground or drilled to provide relief for projecting bolts and screwheads.

### Fixture Attachment Load Table—Cement Board

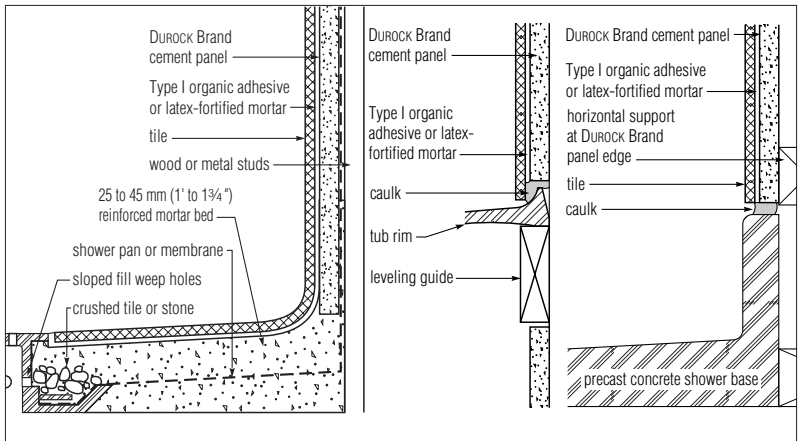
Fastener type	size		Base assembly	Allowable withdrawal resistance		Allowable shear resistance	
	mm	in.		N <sup>(1)</sup>	lb.	N <sup>(1)</sup>	lb.
toggle bolt or hollow wall anchor	3	1/8	12.7 mm (1/2") cement board & steel stud	311	70	445	100
	5	3/16		356	80	556	125
	6	1/4		689	155	778	175
9.5 mm (3/8") TYPE S-12 pan head screw	10	3/8	20-ga. steel to 20-ga. steel	236	53	680	133
two bolts welded to steel insert	5	3/16	12.7 mm (1/2") cement board, plate and steel stud	778	175	890	200
	6	1/4		890	200	1112	250
bolt welded to 38 mm (1-1/2") chan.	6	1/4	See "Bolt and 38 mm (1-1/2") Channel," page 133	890	200	1112	250

(1) Newtons

## Panel Fabrication

Cutting and shaping of DuRock Brand Cement Board panels is similar to cutting and shaping gypsum panels. A utility knife or cement board cutting tool is used to cut through the glass-fiber mesh scrim on both sides of the board. Then it is snapped in the same manner used for gypsum board. Cutouts for penetrations must be made on both sides of the board and then may be tapped out with a hammer. To ensure





Tub and shower—single layer board

### Tip

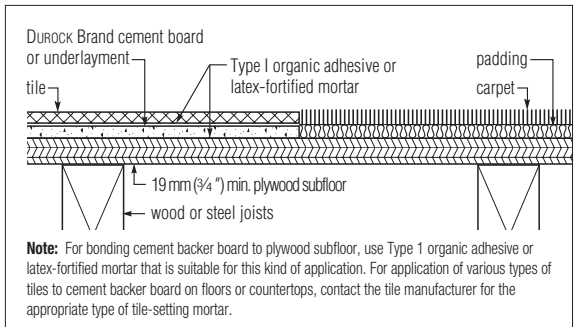
See Chapter 13, for safety considerations.

that the cuts occur at the right locations on both sides, it is often useful to drive nails through the board at key locations such as the center or corners of required penetration locations. A wood rasp is useful for shaping cutouts and board edges. For Safety: Wear eye protection while cutting or shaping; gloves are recommended when handling.

## Panel Application

**For Floors** Laminate 8 mm (5/16") DuROCK Brand Underlayment to subfloor using Type I ceramic tile adhesive, latex fortified mortar or thin-set mortar mixed with acrylic latex additive. Apply it to subfloor with 6 mm (1/4") square-notched trowel for thin set mortar, 4 mm (5/32") V-notched trowel for mastic. DuROCK Brand Underlayment has both a rough and a smooth surface. Typically, the smooth side is used for mastic applications of tile; the rough side for mortar applications. Place underlayment with joints staggered from subfloor joints. Fit ends and edges closely but not forced together. Fasten to subfloor with 32 mm (1-1/4") DuROCK Brand Wood Screws or 38 mm (1-1/2") galvanized roofing nails spaced 203 mm (8") o.c. in both directions with perimeter fasteners at least 10 mm (3/8") and less than 16 mm (5/8") from ends and edges; or with 6 x 22 mm (1/4"x 7/8") galvanized staples spaced 100 mm (4") o.c. in both directions.

Floors, wood or steel joists

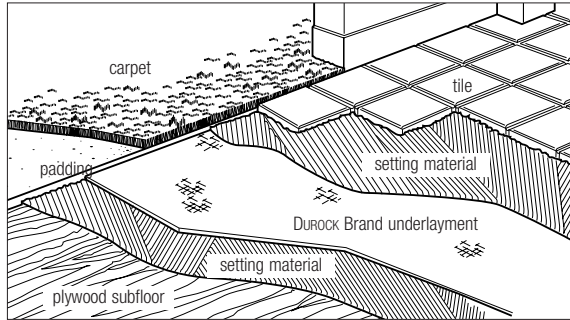


**Note:** For bonding cement backer board to plywood subfloor, use Type I organic adhesive or latex-fortified mortar that is suitable for this kind of application. For application of various types of tiles to cement backer board on floors or countertops, contact the tile manufacturer for the appropriate type of tile-setting mortar.

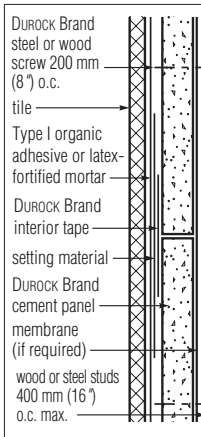
12.7 mm (1/2") Durock Brand Cement Board may be used instead of Durock Brand Underlayment. Use the same procedure, except fastening with staples is not recommended.

**Note:** for bonding cement backer board to plywood subfloor, use Type I organic adhesive or latex-fortified mortar that is suitable for this kind of application. For application of various types of tiles to cement backer board on floors or counter tops, contact the tile manufacturer for the appropriate type of tile-setting mortar.

*Tile/carpet underlayment*

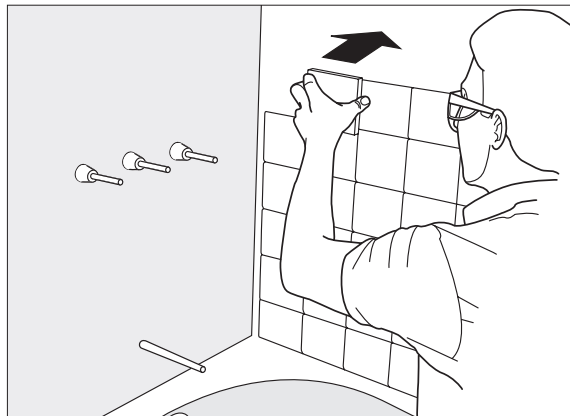


**For Walls** After tub, shower pan or receptor is installed, place temporary 6 mm (1/4") spacer strips around lip of fixture. Installation of a water barrier over studs and overlapping the vertical flange of the fixture is highly recommended.

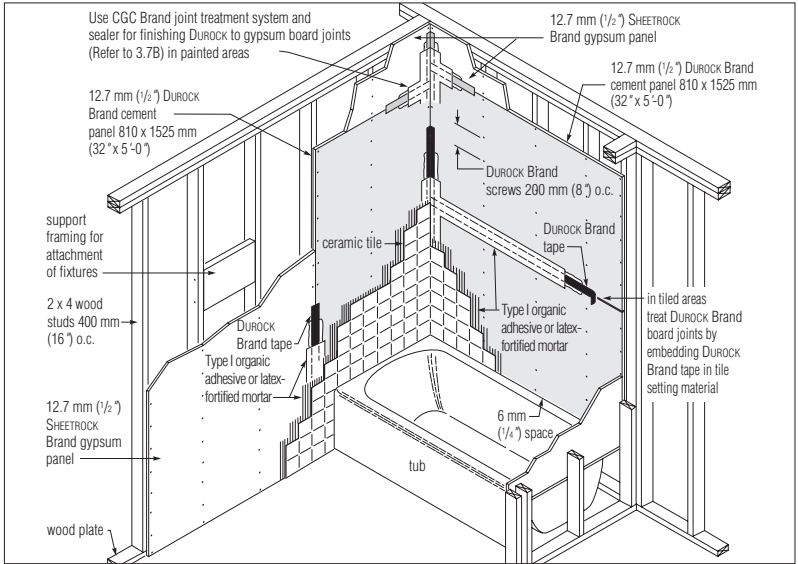


*Walls, interior—wood or steel studs*

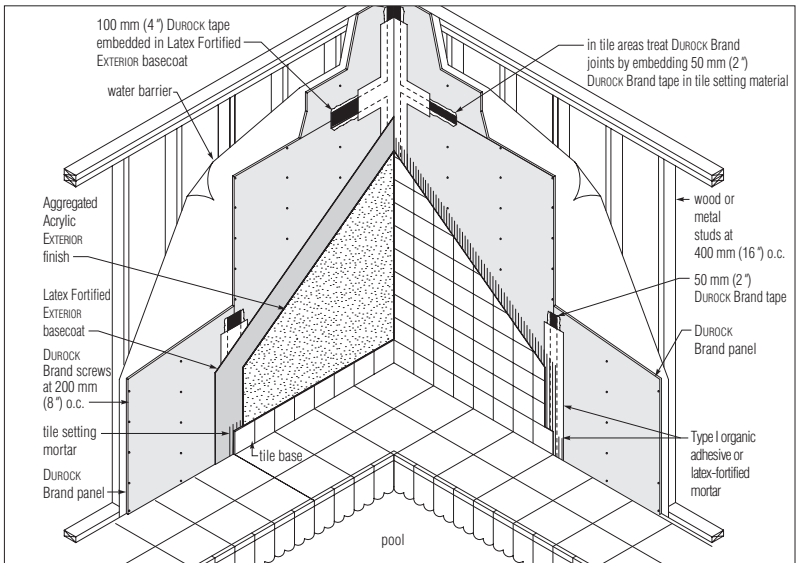
Durock Brand Cement Board has both a rough and a smooth surface. Typically, the smooth side is used for mastic applications of tile; the rough side for mortar applications. Cut the cement board to required sizes and make necessary cut-outs. Fit ends and edges closely, but not forced together. Install board abutting top of spacer strip. Stagger end joints in successive courses. Fasten boards to wood studs spaced max. 400 mm (16") o.c. and bottom plates with 32 mm (1-1/4") Durock Brand Wood Screws or 38 mm (1-1/2") galvanized roofing nails spaced 200 mm (8") o.c. Fasten boards to steel studs spaced max. 400 mm (16") o.c. and bottom runners only with



32 mm (1-1/4") Durock Brand Steel Screws spaced 200 mm (8") o.c. with perimeter fasteners at least 10 mm (3/8") and less than 16 mm (5/8") from ends and edges. Do not fasten to, or within 25 mm (1") of, top runner. In double-layer walls where cement board is installed over base-layer gypsum boards, apply a water barrier (not a vapor retarder) between gypsum board and cement board. If water barrier was installed, trim overlap back so that it can be concealed by tile and caulk application.

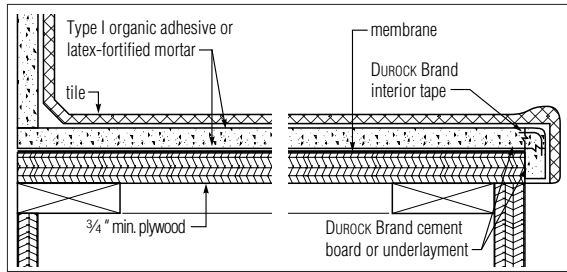


Typical bathtub installation



Typical swimming pool installation (tile or exterior finish)

## Counter tops

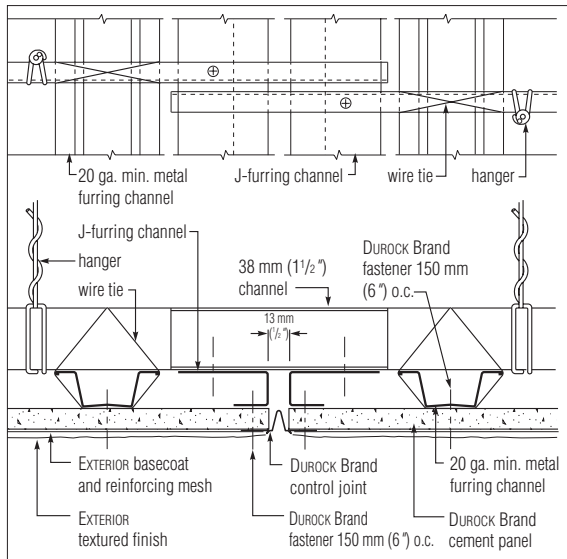


**For Countertops** Staple-attach #15 felt or 0.1 mm (4-mil) polyethylene film to 19 mm (3/4") exterior plywood base with galvanized staples. Laminate 8 mm (5/16") DuRock Brand Underlayment to membrane using ceramic tile mastic, latex fortified mortar or thin-set mortar mixed with acrylic latex additive applied to felt-covered plywood with 6 mm (1/4") square-notched trowel for thin set mortar, 4 mm (5/32") V-notched trowel for mastic. Fasten to plywood with 32 mm (1-1/4") DuRock Brand Wood Screws or 38 mm (1-1/2") galvanized roofing nails spaced 200 mm (8") o.c. in both directions and around edges; or with 6 x 22 mm (1/4" x 7/8") galvanized staples spaced 100 mm (4") o.c. in both directions and around edges.

12.7 mm (1/2") DuRock Brand Cement Board may be used instead of DuRock Brand Underlayment. use the same procedure, except fastening with staples is not recommended. In each case, select the rough or smooth side of the board for tile application depending on whether mortar or mastic will be used.

**For Ceilings** Assure that ceiling joists, furring channels or strips are spaced max. 400 mm (16") o.c. and are capable of supporting the total ceiling system dead load, including insulation, ceramic tile, bonding materials and cement board, with deflection not exceeding L/360 of the span. When steel is used,

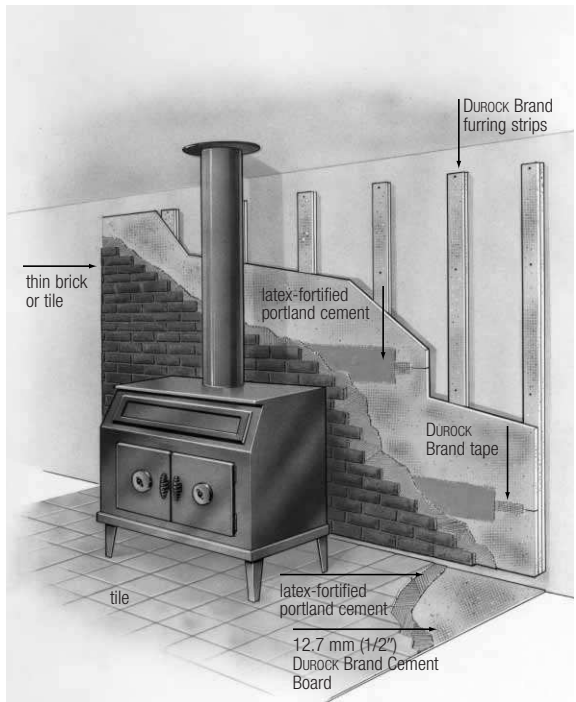
## Suspended ceiling



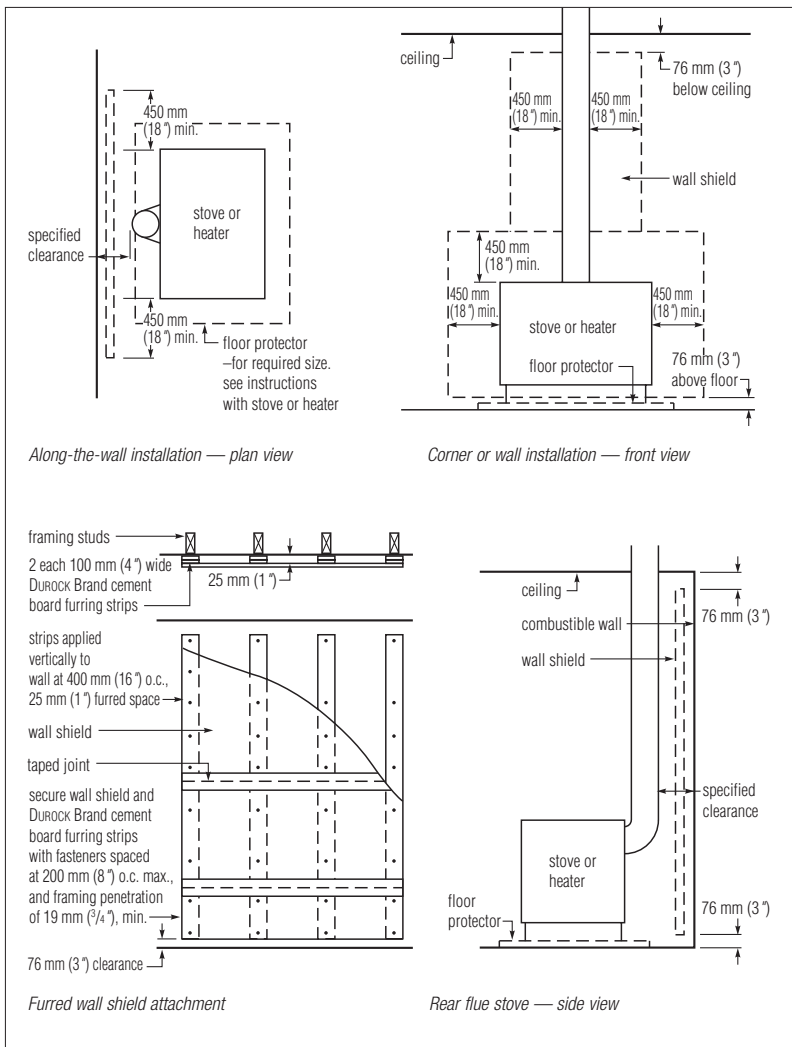
min. 20-ga. is required. Apply 12.7 mm (1/2") DUROCK Brand Cement Board to framing with long dimension across framing. Center end or edge joints on framing and stagger joints in adjacent rows. Fit ends and edges closely, but not forced together. Fasten boards to steel framing with 32 mm (1-1/4") DUROCK Brand Steel Screws spaced 150 mm (6") o.c. and to wood framing with 41 mm (1-5/8") DUROCK Brand Wood screws spaced 152 mm (6") o.c. with perimeter fasteners at least 9.5 mm (3/8") and less than 15.9 mm (5/8") from ends and edges. If necessary, provide additional blocking to permit proper attachment. Make sure edges or ends are continuously supported.

**For Wall Shield** Cut 12.7 mm (1/2") DUROCK Brand Cement Board into furring strip sizes using a carbide scoring tool or a circular saw with a carbide-tipped blade. Attach a double layer of furring strips to wall framing with 57 mm (2-1/4") DUROCK Brand Wood Screws or 57 mm (2-1/4") galvanized roofing nails with 19 mm (3/4") minimum framing penetration. Then attach 12.7 mm (1/2") DUROCK Brand Cement Board panels through furring strips to wall framing with 70 mm (2-3/4") galvanized roofing nails with 19 mm (3/4") minimum framing penetration.

*Wall shield and floor protector*



**For Floor Protectors and Hearth Extensions** Apply 3 mm (1/8") to 6 mm (1/4") thick latex-fortified portland cement to solid surface—never on top of carpeting or padding. Attach 12.7 mm (1/2") DUROCK Brand Cement Board with 32 mm (1-1/4") DUROCK Brand Wood Screws or 38 mm (1-1/2") galvanized roofing nails at 200 mm (8") o.c. both directions and with 19 mm (3/4") minimum flooring penetration. See the illustration on page 152 for minimum wall shield or floor protector extensions beyond the room heater or stove.



Minimum wall shield/floor protector extensions

**Hearth Extensions** Extend hearths with DuRock Brand Cement Board in accordance with local building codes and fireplace manufacturer recommendations. The thickness of cement board panels is determined using the following formula:

$$\frac{k\text{-value DuRock}}{k\text{-value specified}} \times \text{Hearth extension thickness (specified)} = \text{Thickness of DuRock Brand Cement Board (not less than hearth extension specified)}$$

For example, if the fireplace manufacturer or code requires one layer of 19 mm (0.75-in.) millboard with a k-value of 0.84, use the formula as follows to determine the required layers of cement board panels:

$$\frac{1.92}{0.84} \times 19 \text{ mm (0.75 in.)} = 43 \text{ mm (1.71 in.) of Durock Brand Cement Board, or 4 layers.}$$

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### Joint Treatment

Fill joints with tile-setting mortar or adhesive and then immediately embed tape and level joints.

For small areas where the Durock Brand Cement Board will not be tiled, such as a board extending beyond the tiled area and abutting another surface, treat joints as follows: Seal Durock Brand Cement Board with Type I Ceramic Tile Adhesive. (Mix four parts adhesive with one part water.) Embed CGC Brand Joint Tape over joints and treat fasteners with SHEETROCK Brand Setting-Type Joint Compound (DURABOND 45 or 90) applied in a conventional manner. Flat trowel SHEETROCK Brand Setting-Type Joint Compound over board to cover fasteners and fill voids to a smooth surface. Finish joints with at least two coats of SHEETROCK Brand Ready-Mixed Joint Compound. Do not apply ready-mixed or setting-type joint compound over unsealed board.

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### Panel Surfacing

Install tile or thin brick and grout in accordance with ANSI A108.4 for Type I organic adhesive or ANSI A108.5 for dry-set or latex portland cement mortar and ANSI A108.10 for grouts. Before tile application begins, the moisture content of the Durock Brand Cement Board should be allowed to adjust as closely as possible to the level it will reach in service. Avoid extreme changes in environmental conditions during the curing of the tile setting material. Provide adequate ventilation to carry off excess moisture. Note: Durock Brand Cement Board used in floor-protector applications will still perform its protective function unfinished, so long as the integrity of the board surface is not compromised.

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### Abuse-Resistant Walls

In addition to its use as a moisture-resistant backing for interior ceramic tile, Durock Brand Cement Board has also become a suitable substrate for veneer plaster to produce rugged, fire-rated, abuse resistant walls. The extraordinary strength and durability of Durock Brand Cement Board offers uncommon advantages for walls in high-traffic and abuse-prone areas. Combined with a two-coat veneer plaster application, the wall system looks as good as it performs. It is particularly well suited for institutional and commercial applications.

In this two-coat veneer plaster system, DIAMOND Brand Veneer Basecoat Plaster and IMPERIAL Brand Finish Plaster are applied over Durock Brand Cement Board attached to framing spaced 400 mm (16") o.c. Apply panels with long edges either parallel or perpendicular to the framing and with the rough side of the panels exposed. Attach board with Durock Brand Screws or galvanized roofing nails spaced max. 200 mm (8") o.c. Prior to treatment of joints, apply USG Plaster Bonder in a continuous film

to the joint area in accordance with application directions. Treat joints with DURABOND or SHEETROCK Brand Setting-Type Joint Compound and CGC Brand joint Tape.

Joint surfaces must be treated with a separate coat of joint compound to fully conceal the paper tape. When joints are completely dry, treat entire wall surface with USG Plaster Bonder according to application directions. Then apply DIAMOND Brand Veneer Basecoat Plaster from 1.6 mm (1/16") to 2.4 mm (3/32") thickness using a scratch and double-back technique. This is accomplished by applying a tight, thin coat over the entire area, and immediately doubling back with plaster from the same batch to achieve full thickness. When basecoat plaster is firm, broom the surface to leave it rough and open for finish. With basecoat set and partially dry, apply IMPERIAL Finish Plaster using a scratch and double-back technique. Complete finishing when material is firm. Leave finished surface smooth and dense for decorating.

DUROCK Brand Cement Board also may be employed as the base layer in two-layer wall systems that use SHEETROCK Brand Gypsum Panels for the top layer. These systems, too, are exceptionally durable and provide fire-rated protection.