

GEORGIA-PACIFIC DENS-SHIELD® TILE BACKER INSTALLATION, FRAMING & FASTENERS

Installation on Walls and Ceilings:

Position Dens-Shield® tile backer next to framing with the coated (grey) face away from studs. Pre-cut panel to required size and make cutouts. Fit ends and edges closely.

Dens-Shield may be cut by scoring and snapping, working from the gray face side. Board may be installed either parallel or perpendicular to framing for both wall and ceiling applications.

Framing Construction:

- Minimum bending radii is 12' for 1/2" Dens-Shield panels and 16' for 5/8" Dens-Shield Fireguard® panels. (Additional fasteners and decreased framing spacing should accompany curved surface installations.)
- Steel or wood framing should be spaced no greater than 16" o.c. for normal installation with 1/2" Dens-Shield, or 24" o.c. with 5/8" Dens-Shield Fireguard.
- With 1/2" Dens-Shield, framing may be spaced up to 24" o.c. with proper blocking or backing located approximately 1" above the top of the tub or receptor, and at horizontal joints where tile is to be installed.
- If necessary, fur framing around the tub or shower receptor to properly align Dens-Shield panel. (Not necessary with 5/8" Dens-Shield.)
- Provide appropriate blocking, headers or supporters for tub, plumbing fixtures, soap dishes, grab bars, towel racks and other accessories.

Wood Framing: Secure panels to wood framing with minimum 1-1/2" - 1-7/8" corrosion-resistant drywall nails, 11 gauge, hot-dipped galvanized, 7/16" head roofing nail, or 1-1/4" – 1-7/8", corrosion-resistant, coarse thread (Type W) or multilevel thread (Type S Hi-Lo), sharp point drywall screws.) See chart – choice of fasteners for single-thickness application will depend on board thickness.)

Metal Framing: In accordance with TCA recommendations for single panel layer tiled applications, secure panels to 20 gauge steel or heavier framing with minimum 1-1/4" – 1-7/8", waferhead or buglehead, multilevel thread, sharp point drywall screws (Type S Hi-Lo) or to heavy gauge steel with 1" – 1-1/4" waferhead or buglehead, fine thread, drill point drywall screws (Type S-12). (See chart – choice of fastener size for single-thickness application will depend on board thickness.) Fasteners should be spaced 6" o.c. for walls and ceilings for both wood and metal framing. **Drive fasteners flush with coated surface. Do not countersink.**

Residential Floors and Counters: See "Tile Application" in [Sweet's Catalog File, General Building & Renovation](#).

LIMITATIONS OF USE:

Applications: Dens-Shield tile backer must be installed so that tile is applied on the coated gray

side of the board. Do not use where there is prolonged exposure to temperatures exceeding 120 degrees F and/or there is continuous exposure to extreme humidity, i.e. fireplaces (radiant barriers), saunas, or steam rooms. Vapor retarders should never be installed directly behind Dens-Shield. In retrofit, some paints or other wall coverings may constitute a vapor barrier. Such coatings or covering must be removed or effectively penetrated. Dens-Shield tile backer should not be used as a base for nailing or mechanical fastening. Panels should not be installed using staples or adhesives by themselves – use nails or screws alone or in combination with adhesive.

Tile Setting Material: The Dens-Shield surface should be clean and dry before tile is set. Use Type I ANSI A-136.1 ceramic tile mastic adhesive, ANSI A118.4 latex Portland cement mortar, A118.1 dry set Portland cement mortar, or other products recommended by the mastic, mortar or tile manufacturer.(1)

With non-absorptive tiles such as quarry tile, marble tile, or ceramic mosaic, use dry set or latex Portland cement mortar as described above. Tile mastic that requires water loss for curing requires additional drying time when used with Dens-Shield and non-absorptive tile.

Framing: Maximum framing spacing for 1/2" Dens-Shield is 16" o.c. without blocking, or 24" o.c. with blocking. Maximum framing spacing with 5/8" Dens-Shield Fireguard is 24" o.c. with or without blocking. As a result of the material's water resistant qualities, no other vapor retarder should be used.

Storage: Dens-Shield tile backer may be stored outside prior to installation, but should be under protective covering and stacked off the ground.

A. Fastener Length: 1/2", 5/8", 1", 1-1/4"

Description: Fine thread, rust resistant, drill point dry wall screw (Type S-12).

Applications: Dens-Shield to heavy steel gauge (12 to 22 gauge).

B. Fastener Length: 1-1/4", 1-7/8"

Description: Fine thread, sharp point rust resistant dry wall screw (Type S).

Applications: Dens-Shield to light gauge metal framing or furring.

C. Fastener Length: 1-1/4", 1-7/8"

Description: Rust resistant coarse thread sharp point screw (Type W).

Applications: Dens-Shield to wood framing.

D. Fastener Length: 1-1/4", 1-7/8"

Description: Waferhead, rust resistant, screws, drill or sharp point.

Applications: Dens-Shield to heavy or light gauge metal, respectively.

E. Fastener Length: 1-1/4", 1-7/8"

Description: Hot-dip 11 gauge, galvanized, 7/16" head nail.

Applications: Dens-Shield to wood framing.

DENS-SHIELD® TILE BACKER INSTALLATION, FIRE RATINGS

Fire-Rated Wall Assemblies

Dens-Shield tile backer is rated for both 1-hour and 2-hour wall assemblies. This provides significant advantages to specifiers, installers and owners:

- Insulation is not required for the 2-hour assembly, demonstrating superior performance. The 1-hour assembly uses glass fiber insulation, as opposed to mineral wool, lowering cost with a more readily available product.
- Tile is not required to achieve the fire rating in either the 1-hour or 2-hour back units. Meeting the tests requirements without tile is an indication of Dens-Shield tile backer's superior product properties.
- Narrow (2-1/2"), light gauge (25 ga.) metal studs were used in both assemblies. The result is a thinner wall, which allows greater design flexibility.

One-Hour Fire-Rated Wall Assembly (Application to metal studs)

Application

- 1/2" G-P Dens-Shield tile backer applied parallel to both sides of metal studs 16" o.c., minimum 20 gauge.
- Attached with 1" Type S screws 8" o.c. at board edges and 12" o.c. on intermediate studs.
- Joints covered with 10 x 10 glass mesh tape and embedded with mastic tile adhesive.
- Alternate: 5/8" G-P Gypsum Fireguard® may be used with Dens-Shield on one side only.

One-Hour Fire-Rated Wall Assembly (Application to wood studs)

Application

- 5/8" Georgia-Pacific Dens-Shield Fireguard applied parallel or perpendicular to framing with corrosion resistant 6d drywall nails or 1-3/4" galvanized roofing nails.
- Joints covered with 10 x 10 glass mesh tape and embedded with tile adhesive. Tile is not necessary.
- Alternate: Other 5/8" G-P Gypsum Fireguard products may be used with Dens-Shield on one side only.

*Qualifying test for TYPE X rating. 5/8" Dens-Shield Fireguard® can be substituted in many assemblies using a 5/8" Type X gypsum board. This permits the use of numerous 1 hour and 2 hour assemblies for both wood and metal frame construction.

Two-Hour Fire-Rated Wall Assembly (Application of metal studs)

Application

- Base layer: 1/2": G-P Fireguard applied parallel to metal stud spaced 24": o.c.
- Base layer attached with 1" Type S screws 24" o.c. to all framing members.
- Face Layer: 1/2" G-P Dens-Shield Tile Backer. Applied parallel to framing with joints staggered 24" from base layer.
- Face Layer attached with 1-5/8" Type S screws 8" o.c. at edges/joints and 1/2" o.c. on intermediate studs and perimeter.
- All joints covered with 10 x 10 glass mesh tape and embedded with mastic tile adhesive.

Important Notes: Tests were conducted under more demanding conditions than necessary to meet minimum requirements. Design and structural considerations may dictate the use of deeper and/or heavier gauge studs than those used in assemblies shown.

For more information contact Georgia-Pacific at 1-800-225-6119, in Georgia call 770-521-5587.

Handling Precautions: For personal protection when installing Dens-Shield, certain precautions are recommended. Due to the possibility of skin, eye and respiratory irritation from glass fibers, wear long-sleeved loose-fitting clothes, a dust mask, gloves and eye protection. Use a respirator, such as 3M model 9900 or equivalent. Operations which generate high airborne fiber concentrations (over 10 fibers/cc) require additional respiratory protection. In case skin irritation occurs, wash gently with soap and warm water. Wash clothes separately from other clothing. Rinse washer thoroughly.

Code Compliance

SBCCI #9045 BOCA #90-30 ICBO #4465 LOS ANGELES RR 24917
NEW YORK CITY MEA 65-88-M
WISCONSIN DIHL 910014-S