



We protect  
what matters most™

## DensDeck® Roof Board

### PRODUCT DESCRIPTION

DensDeck® Roof Board combines exceptional fire resistance, a thermal barrier, and recovery board for use in various commercial roofing systems. The patented DensDeck® Roof Board design employs glass mat facings front and back that are embedded into a water-resistant gypsum core, providing excellent fire resistance, moisture resistance, and wind uplift properties. The unique construction of DensDeck® Roof Boards provides superior flute spanning that stiffens and provides increased foot traffic resistance to the roof deck. Additionally, DensDeck® panels have been shown to withstand delamination, deterioration, warping, and job site damage more effectively than other roofing membrane substrates such as paper-faced gypsum board, fiber board, and perlite insulation.

### PRODUCT DESCRIPTION

Roof system manufacturers and designers have found DensDeck® Roof Boards to be compatible with many types of roofing systems, including built-up, modified bitumen, single ply, metal systems, wood shingle and shake, tile, slate, and re-cover board, as well as an overlayment protection board for polyisocyanurate and polystyrene insulation. DensDeck® can also be used as a form board for poured gypsum concrete decks in roof applications as well as a substrate for spray foam roofing systems. 1/2" (13 mm) and 5/8" (16 mm) DensDeck® Prime may also be used in vertical applications as a backer board or liner for the roof side of parapet walls. Georgia-Pacific Gypsum offers a limited warranty for up to 90 days of exposure to normal weather conditions when applied vertically on parapet walls.

Some membrane manufacturers have hot mop asphalt or torch applications directly to DensDeck® without using a primer or base sheet. Refer to specific membrane system application instructions. System manufacturers and designers have found DensDeck® to be compatible with bonding adhesives for fully adhered single-ply membrane applications.

The DensDeck® panel's exceptional moisture resistance and low R-value make it the preferred substrate for vapor retarders.

Having excellent fire resistance, DensDeck® Roof Board features a noncombustible core and fiberglass mat that offers greater fire protection than other conventional commercial roofing products when applied over combustible roof decks and steel decks. DensDeck® Roof Boards are FM tested and approved as the only 1/2" (13 mm) gypsum product to meet the calorimeter requirements for conventionally insulated decks. Tested in accordance with ASTM E84, its surface burning characteristics are Flame Spread-0 and Smoke Developed-0. 5/8" (16 mm) DensDeck® panels can replace any generic type X gypsum board in any roof assembly in the UL Fire Resistance Directory under the prefix "P."

### LIMITATIONS

DensDeck® Roof Boards are designed to act with a properly designed roof system. The actual use of DensDeck® Roof Board as a roofing component is the responsibility of the roofing system's designing authority.

Conditions beyond the control of Georgia-Pacific Gypsum such as weather conditions, dew, application temperatures, and techniques may cause adverse effects with adhered roofing systems. Always consult the roofing system manufacturer's specific instructions for applying the various roofing types to DensDeck® Roof Board.

Panels must be kept dry before, during, and after installation. Apply only as much DensDeck® Roof Board as can be covered by a roof membrane system in the same day.

Accumulation of water due to leaks or condensation in or on DensDeck® Roof Boards must be avoided during construction and after construction. Avoid over-use of non-vented direct-fired heaters during winter months. Avoid application of DensDeck® Roof Board during rains, heavy fogs, and other conditions that may deposit moisture on the surface. When applying solvent-based adhesives or primers, allow sufficient time for the solvent to flash off to avoid damage to roofing components. Maximum flute span is 2-5/8" (67 mm) for 1/4" (6 mm) DensDeck®; 5" (127 mm) for 1/2" (13 mm) DensDeck®.

## HOT MOPPING OVER DENSDECK® ROOF BOARDS:

For hot mopping asphalt or coal tar directly to DensDeck® Prime Roof Board, follow the manufacturer's recommended system application temperature guidelines and good roofing practices. DensDeck® Prime Roof Board is the preferred substrate for torch application. However, the product must be dry prior to commencing installation of torch application.

- Ensure product is dry. Ensure proper torching technique.
- Limit the heat to the roof board. Maintain a majority of the torch flame directly on the roll.
- When using DensDeck® Roof Board in lieu of DensDeck® Prime Roof Board, prime the surface of the DensDeck® Roof Board and allow to dry thoroughly.
- When torching to DensDeck® Prime Roof Boards, field priming should not be required.

Note:  
DensDeck® is a registered trademark of Georgia Pacific.

Product Specifications (Nominal)	
Thickness	1/4" – 6 mm; 1/2" – 13 mm; 5/8" – 16 mm Fireguard® Type X
Width	4' – 1.22 mm standard, 1/8" – 3 mm tolerance
Lengths	8' – 2.44 mm standard, tolerance 1/4" – 6 mm; Optional: 4' – 1.22 mm available
Edges	Square
Spanning	1/4" (6 mm) DensDeck® spans flute widths up to 2 5/8" (67 mm)  1/2" (13 mm) DensDeck® spans flute widths up to 5" (127 mm)  5/8" (16 mm) DensDeck® spans flutes up to 8" wide (203 mm)

## TECHNICAL DATA

Flame spread 0, smoke developed 0, when tested in accordance with ASTM E84 or CAN/ ULC-S102. Noncombustible when tested in accordance with ASTM E136. DensDeck® Fireguard®: UL Classified when tested in accordance with ASTM E119. 1/4" (6 mm) DensDeck® panels have been tested by Factory Mutual for 60 psf and 90 psf wind uplift for BUR, EPDM, thermoplastics, and modified bitumen roof systems. Higher wind uplift ratings have been achieved by numerous membrane manufacturers using DensDeck® in their FM-approved construction designs.

## INSTALLATION

1. DensDeck® panels should be used with fasteners specified in accordance with FM requirements and roof membrane manufacturer's written recommendations.
2. For wind uplift/FMRC compliance where DensDeck® Roof Boards are mechanically attached to metal decks, DensDeck® Roof Boards shall be installed to the specifics of the FMRC design assembly.
3. For installations involving BUR, EPDM, thermoplastics, and modified bitumen roof systems, call BMI's Technical Hotline for fastener patterns of GP's FM uplift assemblies.
4. In accordance with approved shop drawings, FM-approved fasteners shall be installed with plates through the DensDeck® panels, flush with the surface.
5. Where DensDeck® is installed over combustible wood decks or insulation, all joints should be staggered. The optional separator sheet should be installed prior to the installation of DensDeck® Roof Boards.
6. Edge joints should be located on, and parallel to, deck ribs. End joints of adjacent lengths of DensDeck® should be staggered.
7. DensDeck® shall be installed with ends and edges butted tightly.
8. DensDeck® is manufactured to meet ASTM C1177.

Properties	1/4" (6.4 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Thickness, nominal	1/4" (6.4 mm) ± 1/16" (1.6 mm)	1/2" (12.7 mm) ± 1/32" (0.8 mm)	5/8" (15.9 mm) ± 1/32" (0.8 mm)
Width, standard	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)
Length, standard	8' (2438 mm) ± 1/4" (6.4 mm)	8' (2438 mm) ± 1/4" (6.4 mm)	8' (2438 mm) ± 1/4" (6.4 mm)
Weight nominal, lbs./sq. ft. (Kg/m <sup>2</sup> ) <sup>1</sup>	1.2 (5.9)	2.0 (9.8)	2.5 (12.2)
Surfacing	Fiberglass mat	Fiberglass mat	Fiberglass mat
Flexural Strength <sup>2</sup> , parallel, lbf. min. (N)	≥40 (178)	≥80 (356)	≥100 (444)
Flute Spanability <sup>3</sup>	2-5/8" (67 mm)	5" (127 mm)	8" (203 mm)
Permeance <sup>4</sup> , Perms (ng/Pa•S•m <sup>2</sup> )	50 (>2850)	>35 (>1995)	>32 (>1824)
R Value <sup>5</sup> , ft <sup>2</sup> •°F•hr/BTU (m <sup>2</sup> •K/W)	0.28	0.56	0.67
Linear Variation with Change in Temp., in/in/°F (mm/mm/°C)	8.5x10 <sup>6</sup> (15.3x10 <sup>6</sup> )	8.5x10 <sup>6</sup> (15.3x10 <sup>6</sup> )	8.5x10 <sup>6</sup> (15.3x10 <sup>6</sup> )
Linear Variation with Change in Moisture	6.25 x 10 <sup>6</sup>	6.25 x 10 <sup>6</sup>	6.25 x 10 <sup>6</sup>
Water Absorption <sup>6</sup> , % max	<10.0	<10.0	<10.0
Compressive Strength <sup>7</sup> , psi nominal	900	900	900
Surface Water Absorption, grams, nominal <sup>2</sup>	<2.5	<2.5	<2.5
Flame Spread, Smoke Developed (ASTM E84, UL 723, ULC CAN-S102)	0/0	0/0	0/0
Fire Classification	UL Classified, FM Approvals	UL Classified, FM Approvals	UL Classified, FM Approvals
Bending Radius	5' (1524 mm)	8' (2438 mm)	12' (3658 mm)

<sup>1</sup> Tested in accordance with ASTM C473, method B.

<sup>2</sup> Tested in accordance with ASTM E661.

<sup>3</sup> Tested in accordance with ASTM E96 (dry cup method).

<sup>4</sup> Tested in accordance with ASTM C518 (heat flow meter).

<sup>5</sup> Specified values per ASTM C1177.

<sup>6</sup> Tested in accordance with ASTM C473.

<sup>7</sup> Represents approximate weight for design and shipping purposes. Actual weight may vary based on manufacturing location and other factors.

**MOLD RESISTANCE.** When tested, as manufactured, in accordance with ASTM D3273, DensDeck® Roof Boards have scored a 10, the highest level of performance for mold resistance under the ASTM D3273 test method. The score of 10, in the ASTM D3273 test, indicates no mold growth in a 4-week controlled laboratory test. The mold resistance of any building product when used in actual job site conditions may not produce the same results as were achieved in the controlled, laboratory setting. No material can be considered mold proof.

