

Dens-Deck®  
Prime™  
Roof Board

Data Sheet

Updated: 1/10



*Quality You Can Trust Since 1886...  
From North America's Largest Roofing Manufacturer™*

Distributed by:



# DENS-DECK® PRIME™ ROOF BOARD (1 of 2)

Manufactured by:



133 Peachtree Street, N.E.  
Atlanta, GA 30303  
Technical: 1-800-225-6119

### Description

Dens-Deck® Prime™ Roof Board combines an exceptional fire barrier, thermal barrier and recovery board used in various commercial roofing systems with a pre-primed surface to make the bond even stronger. The patented Dens-Deck® design employs glass mat facings front and back that are embedded into a water resistant and moisture resistant treated gypsum core, providing excellent fire resistance, moisture resistance and wind uplift properties. The unique construction of Dens-Deck® Prime™ provides superior flute spanning and will help stiffen and stabilize the roof deck. Additionally, Dens-Deck® Prime™ has been shown to withstand delamination, deterioration, warping and job-site damage more effectively than roofing membrane substrates such as paper-faced gypsum board, fiberboard and perlite insulation.

### Primary Uses

Roof system manufacturers and designers have found Dens-Deck® Prime™ roof board to be compatible with many types of roofing systems, including: modified asphalt, single ply, metal systems, recover board, as well as an overlayment for polyisocyanurate and polystyrene insulation. Dens-Deck® Prime™ can also be used as a form board for poured gypsum concrete deck in roof applications as well as a substrate for spray foam roofing systems. 1/2" and 5/8" Dens-Deck® Prime™ may also be used in vertical applications as a backer board or liner for the roof side of parapet walls.

Dens-Deck® Prime™ allows the bonding of cold mastic modified bitumen and torching directly to the surface. **Refer to specific membrane system application instructions.** System manufacturers and designers have found Dens-Deck® Prime™ to be compatible with bonding adhesives for fully-adhered single-ply membrane applications and has been shown to extend the adhesive usage.

Dens-Deck® Prime's exceptional moisture resistance and low R-value make it the preferred substrate for vapor retarders. An excellent fire barrier, Dens-Deck® Prime™ features a noncombustible core and inorganic surface that offers greater fire protection than other conventional commercial roofing products when applied over combustible roof decks and steel decks. Dens-Deck® Prime™ is FM tested and approved as the only 1/2" 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" Dens-Deck® Prime™ can replace any generic type X gypsum board in any roof assembly in the UL Fire Resistance Directory under the prefix "P".

### Limitations

Dens-Deck® Prime™ is designed to act with a properly designed roof system. The actual use of Dens-Deck® Prime™ roof board as a roofing component is the responsibility of the roofing system's designing authority.

Conditions beyond the control of G-P Gypsum such as weather conditions, dew, application temperatures and techniques may cause adverse effects with adhered roofing systems. Always consult the roofing system specific manufacturer's instructions for applying the various roofing types to Dens-Deck® Prime™ roof board.

Panels must be kept dry before, during and after installation. Apply only as much Dens-Deck® Prime™ as can be covered by a roof membrane system in the same day.

Accumulation of water due to leaks or condensation in or on Dens-Deck® Prime™ roof board must be avoided during construction and after construction. Avoid over-use of non-vented direct-fired heaters during winter months. Avoid application of Dens-Deck® Prime™ 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" for 1/4" Dens-Deck® Prime™; 5" for 1/2" Dens-Deck® Prime™; and 8" for 5/8" Dens-Deck® Prime™ Fireguard® Type X.

Refer to the installation instructions for the specific roof system to be installed for additional requirements.

### 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.

Dens-Deck® Prime™ Fireguard: UL Classified when tested in accordance with ASTM E119.

1/4" Dens-Deck® Prime™ has been G-P sponsored tested with 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 Dens-Deck® Prime™ in their FMRC-approved construction designs.

### Products Specifications (nominal)

Thickness	1/4" – 6.4mm; 1/2" – 12.7mm; 5/8" – 15.9mm Fireguard® type X
Widths	4' – 1220mm standard, 1/8" – 3mm tolerance
Lengths	8' – 2440mm standard, tolerance 1/4 – 6.4mm; Optional: 4' – 1220mm available
Edges	Square
Spanning	1/4" Dens-Deck Prime spans flute widths up to 2 5/8" 1/2" Dens-Deck Prime spans flute widths up to 5" 5/8" Dens-Deck Prime spans flutes up to 8" wide

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### Installation

- Dens-Deck® Prime™ should be used with fasteners specified in accordance with FM requirements and roof membrane manufacturer's written recommendations.
- For wind uplift/FMRC compliance where Dens-Deck® Prime™ is mechanically attached to metal decks, Dens-Deck® Prime™ shall be installed to the specifics of the FMRC design assembly.
- For installations involving BUR, EPDM, thermoplastics and modified bitumen roof systems, call Technical Hotline at 1-800-ROOF-411 for fastener patterns of G-P's FMRC uplift assemblies.
- In accordance with approved shop drawings, FM-approved fasteners shall be installed with plates through the Dens-Deck® Prime™, flush with the surface.
- Where Dens-Deck® Prime™ is installed over combustible wood decks or insulation, all joints should be staggered. The optional separator sheet should be installed prior to Dens-Deck® Prime™ installation.
- Edge joints should be located on, and parallel to, deck ribs. End joints of adjacent lengths of Dens-Deck Prime should be staggered.
- For FM Class I-60, fastener density typically is increased by 50% at the roof corners, in conjunction with FM-approved covering.
- For FM Class I-90, fastener density typically is increased by 50% at the roof corners and roof perimeter, in conjunction with FM-approved covering.
- Adhered Systems: Insta-Foam Products, Inc.'s Insta-Stik Adhesive used with 1/4" Dens-Deck® Prime™ achieved a FMRC Class I-180 according to test report 1Y7A5.AM in selected Class 1 insulated steel and concrete deck roof construction. Contact Insta-Foam Products, Inc. for details at 1-800-800-FOAM.
- Dens-Deck® Prime™ shall be installed with ends and edges butted tightly.
- Dens-Deck® Prime™ is manufactured to conform to ASTM C 1177.

PHYSICAL PROPERTIES			
PROPERTIES	1/4" DENS-DECK® PRIME	1/2" DENS-DECK® PRIME	5/8" DENS-DECK® FIREGUARD®
Thickness, nominal inches	5/16"	1/2"	5/8"
Width, standard	4'	4'	4'
Length, standard	8' ± 1/4"	8' ± 1/4"	8' ± 1/4"
Weight, lbs./M sq. ft., nominal	1100	1950	2500
Surfacing	Glass mat/primed	Glass mat/primed	Glass mat/primed
Flexural Strength, Parallel, lbs. min. <sup>4</sup>	40	80 <sup>5</sup>	100 <sup>5</sup>
Flexural Strength, Perpendicular, lbs. min. <sup>4</sup>	50	100 <sup>5</sup>	140 <sup>5</sup>
Flute Spanability <sup>1</sup>	2-5/8"	5"	8"
Permeance Perms <sup>2</sup>	50	35	32
R Value <sup>3</sup>	.28	.56	.67
Coefficient of Thermal Expansion, Inches/inch/°F	8.5 x 10 <sup>-6</sup>	8.5 x 10 <sup>-6</sup>	8.5 x 10 <sup>-6</sup>
Linear Variation with Change in Moisture in/in/%RH	6.25 x 10 <sup>-6</sup>	6.25 x 10 <sup>-6</sup>	6.25 x 10 <sup>-6</sup>
Absorption, % max <sup>4</sup>	10.0	10.0	10.0
Compression, psi	500	500	500
Surface Water Absorption, grams <sup>4</sup>	2.5	2.5	2.5
Flame Spread Smoke Developed (ASTM E84)	0	0	0
Fire Classification	UL Class A, ULC S-102 UL 1256, ULC S-126	FMRC Class 1 UL 1256, ULC S-126 UL Class A, ULC 102	FMRC Class 1 UL Classified "P" assemblies ULC S-101
FM Uplift Approvals	60 and 90 psf uplift	FMRC 1-60, 1-90	FMRC 1-60, 1-90
<sup>1</sup> Tested in accordance with ASTM E661 (400 lb. conc. load).		<sup>4</sup> Tested in accordance with ASTM C473.	
<sup>2</sup> Tested in accordance with ASTM C355 (dry cup method).		<sup>5</sup> ASTM C1177 minimums.	
<sup>3</sup> Tested in accordance with ASTM C518 (heat flow meter).			