

## Product Description

DensDeck® Roof Board features a high-density gypsum core with fiberglass mats that are mechanically bonded to both sides of the board. It is used as a substrate board, thermal barrier, or cover board in Kingspan roofing systems, providing excellent fire resistance and wind uplift properties. Kingspan's system approvals can be found in FM Roofnav. DensDeck® Roof Boards meet ASTM C 1177 test requirements.

## Manufactured in the U.S.A.

DensDeck® Roof Board is manufactured in the U.S.A. with globally sourced materials.



## Features & Benefits

- **Provides enhanced strength and impact resistance** to protect against extreme hail, wind uplift, punctures, and fire, when used as a cover board.
- **Excellent Fire Performance:** features a non-combustible gypsum panel with zero flame spread and zero smoke developed when tested in accordance with ASTM E 84.
- **Meet ASTM C 1177 test requirements.**
- **Codes Approvals:** included in Kingspan system FM and UL assemblies.
- Available in 4' x 8' board dimensions with 1/4", 1/2", and 5/8" thickness.

## System Installation Options

- **Mechanically Attached System (Fasteners & Plates)** – most common attachment method where fasteners and plates are used to attach TPO membrane, insulation, and/or other roofing materials to the roof deck, including DensDeck® Roof Board, in accordance with Kingspan's TPO fastening rate requirements.



- **Mechanically Attached System (Induction-Welded)** – where the membrane is attached over an approved substrate, including DensDeck® Roof Board and Kingspan polyiso insulation, using induction welded plates.
- **Adhered System** – where DensDeck® Roof Board is used as a cover board with a Kingspan TPO membrane adhered on top of it.

## Codes & Approvals

DensDeck® Roof Boards are manufactured to meet ASTM C 1177 and meet the following standards and classifications:

- UL 790 classified as a fire barrier over combustible and non-combustible roof decks, including steel decks.
- UL 1256 classified in roof deck constructions for internal (under deck) fire exposure.
- FM Class 1 Approvals: DensDeck® Roof Boards are included in numerous roofing assemblies with a Factory Mutual (FM) Class 1 fire rating.
- Flame Spread and Smoke Performance: When tested in accordance with ASTM E 84, DensDeck® Roof Boards had Flame Spread 0, Smoke Developed 0.

## Application

- Avoid application of DensDeck® Roof Boards during rain, heavy fog and any other conditions that may deposit moisture on the surface, and avoid the overuse of non-vented, direct-fired heaters during winter months. When Kingspan TPO roofing systems are installed on new poured concrete or light weight concrete decks or when re-roofing over an existing concrete deck, the Kingspan Vapor Barrier SAR should be installed above the concrete to limit the migration of water from the concrete into the roof assembly.
- Always consult the Kingspan Application Guide to install DensDeck® Roof Board in accordance with Kingspan's TPO specifications and requirements.

## Safety Precautions

- Use proper equipment and assistance when moving, lifting, handling, or transporting DensDeck® Roof Board to avoid personal injuries as well as damage to the material.
- Reference the Kingspan product Safety Data Sheet for additional safety information.

## Storage & Moisture Management

- DensDeck® Roof Boards, like other components used in Kingspan TPO roofing systems, must be protected from exposure to moisture before, during and after installation.
- Remove the plastic packaging from all DensDeck® Roof Boards immediately upon receipt of delivery. Failure to remove the plastic packaging may result in entrapment of condensation or moisture.
- DensDeck® Roof Boards stored outside must be stored level and off the ground and protected by a breathable waterproof covering.
- Provide means for air circulation around and under stored bundles of DensDeck® Roof Boards.
- DensDeck® Roof Boards must be covered the same day as installed.
- Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DensDeck® Roof Boards containing excessive free moisture content may need to be evaluated for structural stability to assure wind uplift performance.

## Typical Physical Properties

Properties	DensDeck® Roof Board Thickness		
	1/4"	1/2"	5/8"
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 ft. (1,219 mm) ± 1/8" (3 mm)	4 ft. (1,219 mm) ± 1/8" (3 mm)	4 ft. (1,219 mm) ± 1/8" (3 mm)
Length, standard	8 ft. (2,438 mm) ± 1/4" (6.4 mm)	8 ft. (2,438 mm) ± 1/4" (6.4 mm)	8 ft. (2,438 mm) ± 1/4" (6.4 mm)
Weight, nominal lbs./sq. ft. (kg/m <sup>2</sup> )	1.2 (5.9)	2.0 (9.8)	2.5 (12.2)
Surfacing	Fiberglass mat	Fiberglass mat	Fiberglass mat
Flexural Strength <sup>1</sup> , parallel, lbf. min. (N)	≥40 (178)	≥80 (356)	≥100 (444)
Flute Spanability <sup>2</sup>	2-5/8" (67 mm)	5" (127 mm)	8" (203 mm)
Permeance <sup>3</sup> , Perms (ng/Pa·S·m <sup>2</sup> )	>50 (>2,850)	>35 (>1,995)	>32 (>1,824)
R Value <sup>4</sup> , ft <sup>2</sup> ·°F·hr/BTU	0.28	0.56	0.67
Linear Variation with Change in Temperature, in/in °F (mm/mm/°C)	8.5 x 10 <sup>-6</sup> (15.3 x 10 <sup>-6</sup> )	8.5 x 10 <sup>-6</sup> (15.3 x 10 <sup>-6</sup> )	8.5 x 10 <sup>-6</sup> (15.3 x 10 <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>5</sup> , % max.	<10	<10	<10
Compressive Strength <sup>6</sup> , psi nominal	900	900	900
Surface Water Absorption, grams, nominal	<2.5	<2.5	<2.5
Flame Spread, Smoke Developed (ASTM E 84)	0/0	0/0	0/0
Bending Radius	5 ft. (1,524 mm)	8 ft. (2,438 mm)	12 ft. (3,658 mm)

1 Tested in accordance with ASTM C 473 method B.

2 Tested in accordance with ASTM E 661.

3 Tested in accordance with ASTM E 96 (dry cup method).

4 Tested in accordance with ASTM C 518 (heat flow meter).

5 Specified values in accordance with ASTM C 1177.

6 Tested in accordance with ASTM C 473.

## Product & Packaging Information

Ordering SKU	Board Thickness	Board Dimensions
600000001373	1/4"	4 ft. x 8 ft.
600000001061	1/2"	4 ft. x 8 ft.
600000001374	5/8"	4 ft. x 8 ft.

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