

### Meets the requirements of ASTM C 1289, Type II, Class 4, Grade 1

#### Features and Components

**High-Density Polyisocyanurate Foam Core:** Closed cell polyisocyanurate foam technology provides additional insulation value (R-value of 2.5), with lightweight and low water absorption characteristics.

**Inorganic Coated Glass Facers:** (With no cellulose) Provide improved resistance to mold growth, as well as a smooth surface that performs well with self-adhering systems, and efficient adhesive application in adhered single ply systems.

**Lightweight:** Offers labor and installation efficiencies and allows more options for situations where the overall weight is a concern. This also means easy hoisting, staging and maneuvering around the roof.

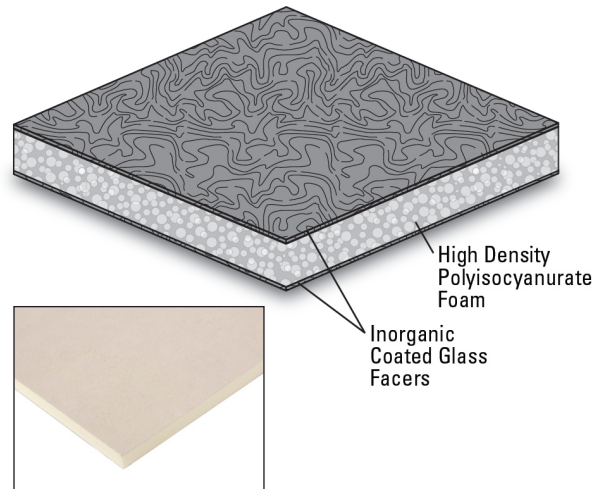
**High R-Value (2.5 R):** Provides significantly more thermal insulation (R-value) than wood fiber or gypsum boards.

**User Friendly:** ProtectoR HD allows easy & efficient scoring, cutting and snapping which permits fast, tight fabrication and all in a low dust environment.

**Resistance To Damage:** High impact, flexural and compressive strength provides a protective layer for insulation while working with the membrane above to ensure maximum performance and longevity.

**Up to 50% Fewer Fasteners:** Achieves FM 1-90 utilizing 8 fasteners per 4' x 8' board with an adhered reinforced membrane and 11 fasteners per 4' x 8' board with an adhered non-reinforced membrane over a min. 22 ga steel deck or structural concrete deck. Refer to fastening patterns on page 2.

**Fire Resistance:** Achieves UL Class A approval directly over a combustible wood deck up to 1/2:12" slope.



Component

**B**  
Cover Board

Multi-Ply  
Single Ply

Type

**PF**  
Poly Foam

**HD**  
High Density

**System Compatibility** This product may be used as a component in the following systems. Please reference product application for specific installation methods and information.

Multi-Ply	BUR		APP		SBS			
	HA	CA	HW	HA	CA	HW	SA	MF
Compatible with the selected Multi-Ply systems above								

Single Ply	TPO				PVC			EPDM	
	MF	AD	SA	IW	MF	AD	IW	MF	AD
Compatible with the selected Single Ply systems above									

**Key:** HA = Hot Applied CA = Cold Applied HW = Heat Weldable SA = Self Adhered MF = Mechanically Fastened IW = Induction Weld BA = Ballasted AD = Adhered

#### Energy and the Environment

LEED®	Recycled Content	Pre-Consumer: 8.6%
		Post-Consumer: 0%

#### Peak Advantage® Guarantee Information

Systems	Guarantee Term*
When used in most JM multi-ply or single ply systems	Up to 30 years

\* Contact JM Technical Services for specific systems.

#### Codes and Approvals



- FM® Standards 4450/4470 Approvals (refer to FM RoofNav<sup>SM</sup>)
- UL® Standard 790 (refer to UL Roofing Materials system directory)

Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The Safety Data Sheet is available by calling (800) 922-5922 or on the web at [www.jm.com/roofing](http://www.jm.com/roofing). The physical and chemical properties of the product listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Check with the regional sales representative nearest you for current information.

#### Installation/Application



Urethane Adhesive  
Mechanically Fastened  
Hot Asphalt  
\*4x4' boards ONLY  
Do not encapsulate.

Typically used as a protective cover board over insulation or an existing roof directly beneath the waterproofing membrane. Boards are to be butted tightly together with joints offset a minimum of 6". When adhering ProtectoR HD with hot asphalt, only 4' x 4' boards are to be utilized and the asphalt temperature is not to exceed 390°F at point of contact. Do not fully encapsulate the board in hot asphalt or use it as a membrane adhesive over ProtectoR HD. Refer to the Application Guides and Detail Drawings for instructions.

#### Packaging and Dimensions

Sizes	4' x 4' x 1/2" (1.22 m x 1.22 m x 12.7 mm)	4' x 8' x 1/2" (1.22 m x 2.44 m x 12.7 mm)
Board Weight	6 lb (2.72 kg)	12 lb (5.4 kg)
Coverage/Pallet	704 ft <sup>2</sup>	1,408 ft <sup>2</sup>
Boards/Pallet	44	44
Pallet Weight	264 lb (119.7 kg)	528 lb (239.4 kg)
Pallets per Truck*	96	48
Producing Locations	Cornwall, ON Hazleton, PA	Jacksonville, FL Bremen, IN
Stocking Locations	Lathrop, CA	Hillsboro, TX

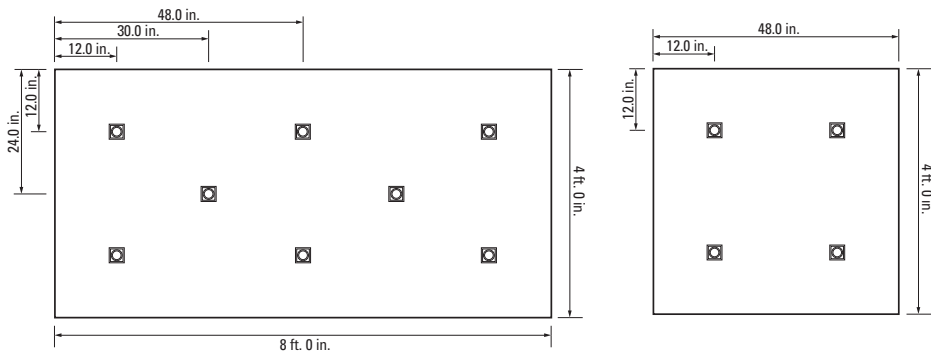
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**Typical Physical Properties**

Test	ASTM	ProtectoR HD Cover Board
<b>Strength</b>	Compressive Strength, psi (kPa)	D 1621 Grade 1 - 109 psi (751 kPa) ( <i>max</i> )
	Flexural Strength Modulus of Rupture, psi (kPa), <i>nom</i> Breakload, lbf (kN), <i>nom</i>	D 1037 675 psi (4654 kPa) 40 lbf (0.18 kN)
	Flute Spanability, inches, <i>max</i>	E 661 9.5
	Dimensional Stability, % Linear Change, <i>nom</i>	D 2126 0.5%
<b>Moisture</b>	Moisture Vapor Permeance, perm (ng/(Pa•s•m <sup>2</sup> )), <i>max</i>	E 96 <1 perm, 57.5 ng/(Pa•s•m <sup>2</sup> )
	Water Absorption, % by vol	C 209 1.5% ( <i>max</i> )
	Surface Water Absorption, gram, <i>max</i>	C 473 <1 gram
	Mold Resistance	D 3273 Pass
<b>Installation</b>	Weight, lb-ft <sup>2</sup> (kg-m <sup>2</sup> ), <i>nom</i>	N/A 0.375 lb-ft <sup>2</sup> (1.83 kg-m <sup>2</sup> )
	Weight per board (4' x 8'), lb (kg), <i>nom</i>	N/A 12 lb (5.4 kg)

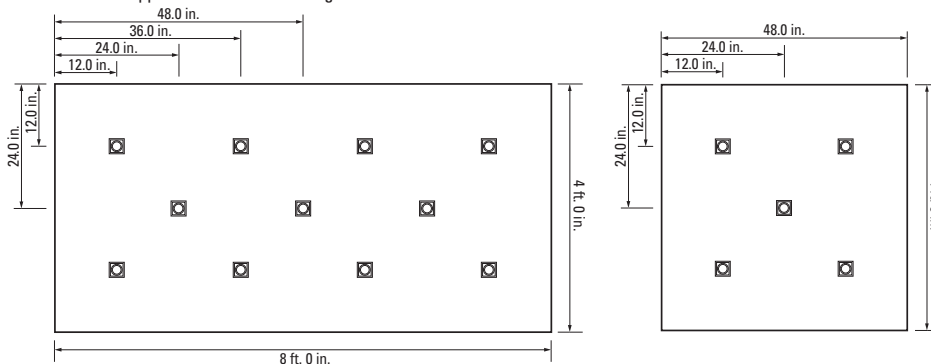
### Thermal Performance

Thickness		Nominal R-Value (Resistance) (hr•ft <sup>2</sup> •°F)/BTU
in	mm	
1/2	12.7	2.5

### JM Recommended Fastening Patterns When Utilized with an Adhered Membrane

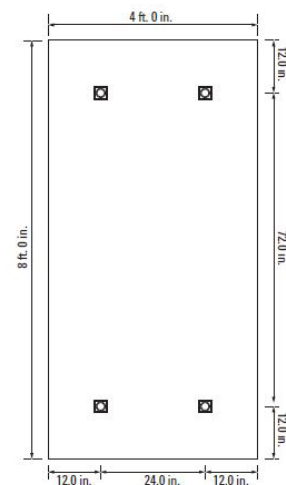


8 per 4' x 8' board achieves FM 1-90 with adhered reinforced membrane or FM 1-75 with adhered non-reinforced membrane applications over a min. 22 ga steel deck or structural concrete deck.



11 per 4' x 8' board achieves FM 1-90 with adhered non-reinforced membrane applications over a min. 22 ga steel deck or structural concrete deck.

### JM Minimum Pre-securement Pattern when used with a Mechanically Fastened Membrane



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