



AD1.04

ProtectoR® HD

1/2" High-Density Polyiso Cover Board

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.

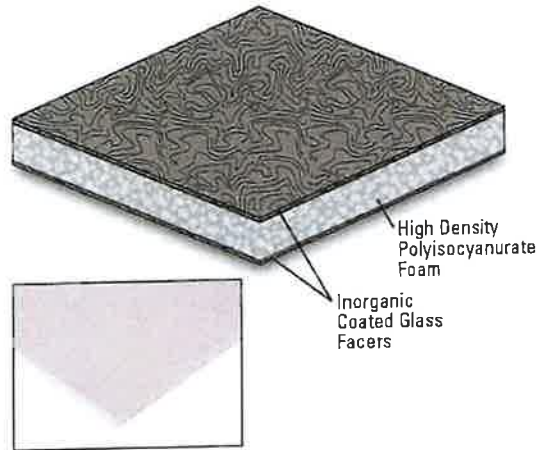
High R-Value (2.5 R): Provides significantly more thermal insulation (R-value) than wood fiber or gypsum boards.

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 | APP | | | SBS | | |
|-----------|-----|----|----|-----|----|----|
| | HA | CA | HW | CA | HW | SA |
| | 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: 3.7% |
| | | 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 RoofNavSM)
- 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. 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



Typically installed 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". This product to be installed with the printed side facing the deck. 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 | 8 lb (2.72 kg) | 12 lb (5.4 kg) |
| Coverage/Pallet | 704 ft² | 1,408 ft² |
| 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 Jacksonville, FL Fernley, NV Hazleton, PA Bremen, IN | |
| Stocking Locations | Tracy, CA Grand Prairie, TX | |

* Assumes 48' flatbed truck.

RS-5626 12-21 (Replaces 7-21)

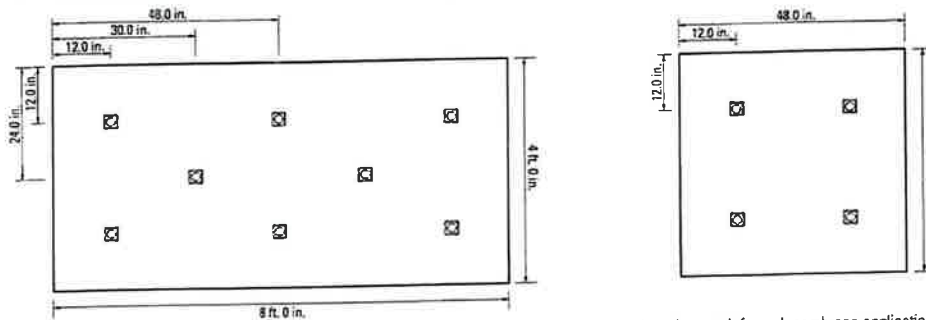
Meets the requirements of ASTM C 1289, Type II, Class 4, Grade 1
Typical Physical Properties

| Test | ASTM | Protector HD Cover Board |
|---------------------|---|--|
| Strength | Compressive Strength, psi (kPa) | 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> | 675 psi (4654 kPa) 40 lbf (0.18 kN) |
| | Flute Spanability, inches, <i>max</i> | 9.5 |
| | Dimensional Stability, % Linear Change, <i>nom</i> | 0.5% |
| Moisture | Moisture Vapor Permeance, perm (ng/(Pa·s·m ²)), <i>max</i> | <1 perm, 57.5 ng/(Pa·s·m ²) |
| | Water Absorption, % by vol | 1.5% (<i>max</i>) |
| | Surface Water Absorption, gram, <i>max</i> | <1 gram |
| | Mold Resistance | Pass |
| Installation | Weight, lb-ft ² (kg-m ²), <i>nom</i> | 0.375 lb-ft ² (1.83 kg-m ²) |
| | Weight per board (4' x 8'), lb (kg), <i>nom</i> | 12 lb (5.4 kg) |

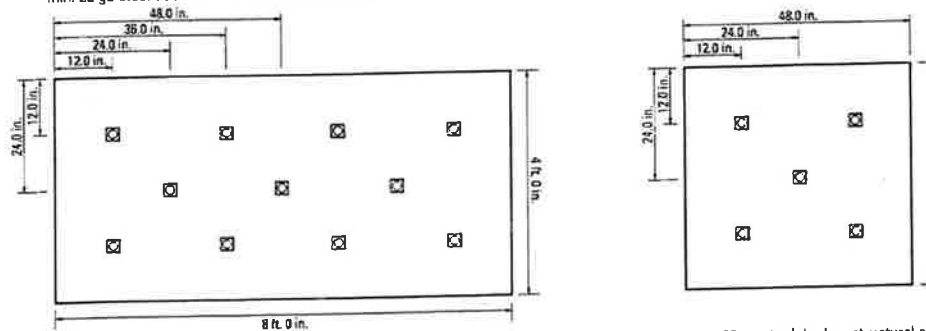
Thermal Performance

| Thickness | | Nominal R-Value (Resistance) (hr·ft ² ·°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.

All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, which includes a Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions or for information on other Johns Manville roofing products and systems, visit www.jm.com/terms-conditions.



DEXcell® Glass-Mat Roof Board

Coated Glass-Mat Faced Gypsum Cover Board

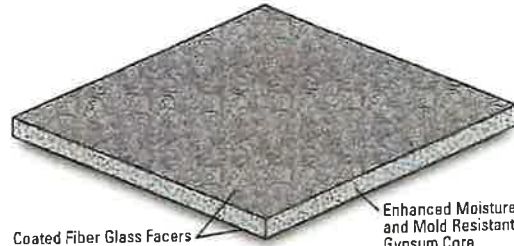
Meets the requirements of ASTM C 1177

Features and Components

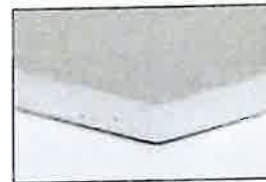
Handleability: Coated fiberglass facer ideal for mechanically fastened systems improves handling and strength. Scores and snaps easily.

Fire Performance: FM Class 1 for fire barrier requirements and UL Class A unlimited slope with excellent surface burning characteristics. 5/8" thickness meets the requirements of Type X per ASTM C 1177.

Moisture and Mold Resistance: Enhanced mold resistant core and coated fiberglass facers provide mold and mildew resistance per ASTM-D 3273.



Coated Fiber Glass Facers Enhanced Moisture and Mold Resistant Gypsum Core



Component

B
Cover Board
Single Ply

Type

GY
Gypsum
LT
Low Thermal

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 | SHR | APP | SBS |
| | HA | CA | SA |

Do not use in Multi-Ply systems

| | | | |
|------------|-----|-----|------|
| Single Ply | TPO | PVC | EPDM |
| | MF | MF | MF |

Compatible with the selected Single Ply systems above

Key: HA = Hot Applied CA = Cold Applied HW = Heat Weldable SA = Self Adhered MF = Mechanically Fastened FA = Fully Adhered BA = Ballasted

Peak Advantage® Guarantee Information

| Systems | Guarantee Term* |
|--------------------------------------|---------------------|
| When used in most single ply systems | 10, 15, or 20 years |

* Contact JM Technical Services for specific systems or terms over 20 years.

Codes and Approvals



Installation/Application



Mechanically Fastened

Refer to the Application Guides and Detail Drawings for instructions.

Packaging and Dimensions

| Size | 4' x 4' (1.22 m x 1.22 m) | | |
|--------------------|---------------------------|-------------------|-------------------|
| Thickness, nom | ¼" (6.4 mm) | ½" (12.7 mm) | ¾" (15.9 mm) |
| Weight/Board, nom | 19 lb (8.6 kg) | 32 lb (14.5 kg) | 40 lb (18.2 kg) |
| Coverage/Pallet | 960 ft² (89 m²) | 768 ft² (71 m²) | 704 ft² (65 m²) |
| Boards/Pallet | 60 | 48 | 44 |
| Pallet Weight | 1,200 lb (544 kg) | 1,612 lb (731 kg) | 1,964 (891 kg) |
| Pallets per Truck* | 40 | 30 | 24 |
| Size | 4' x 8' (1.22 m x 2.44 m) | | |
| Thickness, nom | ¼" (6.4 mm) | ½" (12.7 mm) | ¾" (15.9 mm) |
| Weight/Board, nom | 38 lb (17.2 kg) | 64 lb (29.0 kg) | 80 lb (36.3 kg) |
| Coverage/Pallet | 1408 ft² (131 m²) | 960 ft² (89 m²) | 960 ft² (89 m²) |
| Boards/Pallet | 44 | 30 | 30 |
| Pallet Weight | 1760 lb (798 kg) | 2016 lb (914 kg) | 2678 lb (1215 kg) |
| Pallets per Truck* | 27 | 24 | 18 |
| Producing Location | Waukegan IL, Savannah, GA | | |

* Assumes 48' flatbed truck.

DEXcell® is registered trademark of National Gypsum Company.
DEXcell® is manufactured in the United States by National Gypsum Company.

Refer to the Safe for Use instructions and product label prior to using this product. The Safe for Use instructions are available by calling (800) 922-5922 or on the Web at www.jm.com/roofing.

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RS-5590 2-20 (Replaces 5-16)



DEXcell® Glass-Mat Roof Board

Coated Glass-Mat Faced Gypsum Cover Board

Meets the requirements of ASTM C 1177

Typical Physical Properties

| Test | ASTM | DEXcell Glass-Mat Roof Board | | |
|--------------|---|------------------------------|--------------|--------------|
| | | ¼" (6.35 mm) | ½" (12.7 mm) | ¾" (15.9 mm) |
| Strength | Compressive Strength, psi (kPa), <i>nom</i> | 900 (6,205) | | |
| | Flexural Strength, lb, parallel, <i>min</i> | 40 | 80 | 100 |
| | Bending Radius, ft (m), <i>max</i> | 4 (1.2) | 6 (1.8) | 8 (2.4) |
| Moisture | Moisture Vapor Permeance, perms (ng/(Pa·s·m²), <i>max</i> | 25 (1,429) | 24 (1,371) | 23 (1,314) |
| | Water Absorption, % by wt, <i>max</i> | 10 | | |
| | Mold Resistance | 10 | | |
| Installation | Flute Span, in (cm), <i>max</i> | 2 ½ (6.7) | 5 (12.7) | 8 (20.3) |
| | Weight, lb/ft² (kg/m²), <i>nom</i> | 1.2 (5.9) | 2.0 (10) | 2.5 (12) |

Thermal Performance

| Test | Thickness | | Nominal R-Value (Resistance) | |
|-----------------|-----------|------------------------------|------------------------------|---------|
| | in. | mm | (hr·ft²·°F)/BTU | m²·°C/W |
| | ¼ | 6.4 | 0.32 | 0.056 |
| | ½ | 12.7 | 0.45 | 0.079 |
| | ¾ | 15.9 | 0.56 | 0.099 |
| Test | ASTM | DEXcell Glass-Mat Roof Board | | |
| Flame Spread | E 84 | 0 | | |
| Smoke Developed | E 84 | 0 | | |

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