

# **EnergyGuard HD™ & HD Plus Polyiso Insulation Data Sheet**

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North America's Largest Roofing Manufacturer!™*



# ENERGYGUARD™ HD & HD PLUS

## POLYISO INSULATION (1 of 2)

### Description

EnergyGuard™ HD Polyiso Insulation (HD) and EnergyGuard™ HD PLUS Polyiso Insulation (HD PLUS) are ½" (12.7 mm) thick high-density polyiso cover boards. HD and HD PLUS consist of coated glass-fiber mat facers bonded to high-density closed cell polyisocyanurate foam cores.

### Advantages

HD and HD PLUS have an R-Value of 2.5, the highest of any cover board – and, at 11 lb. and 13 lb. (4.99 kg and 5.90 kg), respectively, per 4' x 8' (1.2 m x 2.44 m) board, they're a fraction of the weight of gypsum cover boards.

- With over 80 psi compressive strength for HD and 110 psi for HD PLUS and a durable coated glass facer, HD and HD PLUS are ideal boards for protecting your roof against the elements.
- Manufactured with EPA-compliant blowing agents. Contains no CFCs or HCHSs; has zero ODP.
- Excellent dimensional stability.
- Low water permeability – lower overall perm rating than many conventional insulation boards.
- High moisture resistance and no capillarity; is stable and maintains its physical and insulating characteristics.

### Uses

When properly installed, it is suitable for use under built-up, modified bitumen, and most single-ply roofing systems.

Refer to the application specifications in the current membrane manufacturer's application and specifications manual or proper membrane installation procedures.

- 4' x 4' (1.21 m x 1.21 m) ½" (12.7 mm) thick HD or HD PLUS may be hot asphalt-adhered to substrates.
- Fleece-back TPO may be hot asphalt-adhered to ½" (12.7 mm) HD or HD PLUS.

### Limitations and Potential Fire Hazard

- HD and HD PLUS are non-structural, non load-bearing materials. They are not designed for direct traffic usage unless adequately protected.
- Direct torching of modified bitumen membranes to HD and HD PLUS is not approved.
- Direct mopping of modified bitumen and built-up roofing (BUR) to HD and HD PLUS is not approved.
- HD and HD PLUS Polyiso Insulation should be stored dry and protected from the elements. Bundle wrap is not for use as waterproofing for boards. No more insulation should be installed than can be completely covered with roofing on the same day.
- As unprotected polyisocyanurate will burn, fire safety precautions should be observed wherever insulation products are used.

### Code Compliance

- Meets ASTM C1289 Type 2, Class 4, Grade 1 (80 psi) and Grade 2 (110 psi).
- Meets FM 4450/4470 and UL 790.

- Meets FM Approval criteria for severe hail damage resistance (Class 1-SH) when FM Approved as a component of a Class 1-SH rated roofing assembly. Refer to RoofNav® (<https://roofnav.fmglobal.com/>) for specific assembly approvals.
- FM Approvals specification tested per FM 4473 for Class 3 impact resistance as a component of a Class 3 rated roofing assembly. Refer to the FM Approval Guide (<http://www.approvalguide.com/>) for Specification Tested roofing assemblies.

WARNING: DO NOT EXPOSE TO OPEN FLAME OR EXCESSIVE HEAT. MAY SMOLDER IF IGNITED. IF IGNITED, EXTINGUISH COMPLETELY.

### Code Compliance



State of Florida Approved

### HD Physical Properties\*

Property	Value	Test Method
Compressive Strength	Min. 80 psi.	ASTM D1621
Dimensional Stability (7 days at 158°F [70°C] 97% RH)	Less than 0.5% linear change	ASTM D2126
Water Absorption (2 hrs. under 1" [25.4 mm] water)	Less than 1.5% by volume	ASTM C209
Resistance to Mold	Passed (10)	ASTM D3273
Service Temperature	260°F (126.7°C) or less	
Recycled Content	Max. 8%	
Tensile Strength	Min. 5000 psf	ASTM C209

\*Foam core only.

### HD PLUS Physical Properties\*

Property	Value	Test Method
Compressive Strength	Min. 110 psi.	ASTM D1621
Dimensional Stability (7 days at 158°F [70°C] 97% RH)	Less than 0.5% linear change	ASTM D2126
Water Absorption (2 hrs. under 1" [25.4 mm] water)	Less than 1.5% by volume	ASTM C209
Resistance to Mold	Passed (10)	ASTM D3273
Service Temperature	260°F (126.7°C) or less	
Recycled Content	Max. 8%	
Tensile Strength	Min. 5000 psf	ASTM C209

\*Foam core only.

EnergyGuard™ HD and HD PLUS Polyiso Insulation



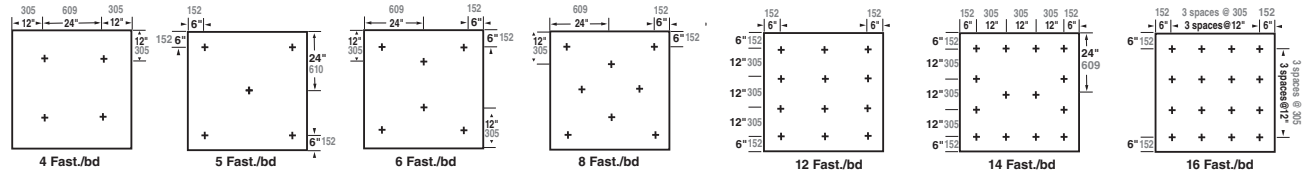


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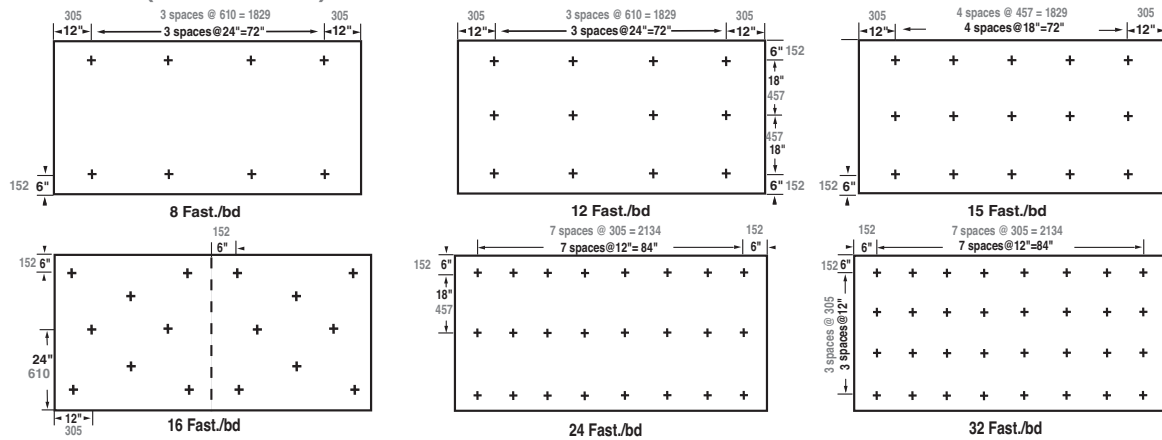
POLYISO INSULATION (2 of 2)

**Design Considerations – Suggested Insulation Fastener Patterns** (NOTE: Measurements in GRAY are in millimeters)

## 4' x 4' (1220 x 1220) Boards



## 4' x 8' (1220 x 2440) Boards



**NOTE:** These patterns are for FM Approved decks utilizing appropriate FM Approved screws and plates. Consult FM Loss Prevention Data Sheets 1-29 for specific perimeter and corner fastening details. For proper attachment, fasteners must penetrate the flange or the metal deck a minimum of 3/4 inch (19.1 mm). Due to ongoing testing programs and changes in FM Global (FM) requirements, the number of fasteners and their placement are subject to change without notice. Consult current FM Approvals Guide and Loss Prevention Data Sheets 1-28, 1-29, and 1-29R for approved fastener density for Isotherm Roof Insulations. If your fastener pattern is not listed, please contact Technical Services at 1-800-766-3411.