

# EnergyGuard™ Roof Insulation Board

Data Sheet

Updated: 1/10



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



# ENERGYGUARD™

## ROOF INSULATION BOARD (1 of 2)

### Description

EnergyGuard™ Roof Insulation Board is made of organic/glass facers bonded to a core of isocyanurate foam.

### Uses

- EnergyGuard™ Roof Insulation is designed for use over structural roof decks where "R" values of 6.0 or higher are required, along with comprehensive U.L. and FMRC approvals.
- Meets FM4450 and UL1256.
- 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 for proper installation procedures.

### Advantages

- High insulation value — Excellent "LTTR" value compared to any other FM Class I rated products of equivalent thickness.
- FM Approved — Subject to the conditions of approval as a roof insulation when installed as shown in the current edition of the Factory Mutual Approvals Guide.

### Advantages (Continued)

- Environmentally safe — Uses EPA accepted blowing agents.
- Lightweight — Lighter than most other insulating products offering comparable thermal resistance; as much as five times lighter in weight than many other materials with the same R-value.
- 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.
- Easier handling and faster to install — Because of light weight, this material is easier to handle on the job site and installs faster. Easier cutting in the field provides the installer with simplified fabricating on the roof deck. Minimizes on-the-job damage.

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

### Thermal and Physical Characteristics<sup>1</sup>

| Thickness* |       | LTTR Value** | Max. Flute Spanability |       |
|------------|-------|--------------|------------------------|-------|
| Inches     | mm    |              | Inches                 | mm    |
| 1.0        | 25.4  | 6.0          | 2 5/8                  | 66.7  |
| 1.1        | 27.9  | 6.6          | 2 5/8                  | 66.7  |
| 1.2        | 30.5  | 7.2          | 2 5/8                  | 66.7  |
| 1.3        | 33.0  | 7.8          | 3 5/8                  | 93.3  |
| 1.4        | 35.6  | 8.4          | 4 3/8                  | 111.1 |
| 1.5        | 38.1  | 9.0          | 4 3/8                  | 111.1 |
| 1.6        | 40.6  | 9.6          | 4 3/8                  | 111.1 |
| 1.7        | 25.4  | 10.3         | 4 3/8                  | 111.1 |
| 1.8        | 45.7  | 10.9         | 4 3/8                  | 111.1 |
| 1.9        | 48.2  | 11.5         | 4 3/8                  | 111.1 |
| 2.0        | 50.8  | 12.1         | 4 3/8                  | 111.1 |
| 2.1        | 53.3  | 12.8         | 4 3/8                  | 111.1 |
| 2.2        | 55.9  | 13.4         | 4 3/8                  | 111.1 |
| 2.3        | 58.4  | 14.0         | 4 3/8                  | 111.1 |
| 2.4        | 60.9  | 14.7         | 4 3/8                  | 111.1 |
| 2.5        | 63.5  | 15.3         | 4 3/8                  | 111.1 |
| 2.6        | 66.0  | 15.9         | 4 3/8                  | 111.1 |
| 2.7        | 68.6  | 16.6         | 4 3/8                  | 111.1 |
| 2.8        | 71.1  | 17.2         | 4 3/8                  | 111.1 |
| 2.9        | 73.6  | 17.9         | 4 3/8                  | 111.1 |
| 3.0        | 76.2  | 18.5         | 4 3/8                  | 111.1 |
| 3.1        | 78.7  | 19.1         | 4 3/8                  | 111.1 |
| 3.2        | 81.2  | 19.8         | 4 3/8                  | 111.1 |
| 3.3        | 83.8  | 20.4         | 4 3/8                  | 111.1 |
| 3.4        | 86.4  | 21.1         | 4 3/8                  | 111.1 |
| 3.5        | 88.9  | 21.7         | 4 3/8                  | 111.1 |
| 3.6        | 91.4  | 22.4         | 4 3/8                  | 111.1 |
| 3.7        | 93.9  | 23.0         | 4 3/8                  | 111.1 |
| 3.8        | 96.5  | 23.7         | 4 3/8                  | 111.1 |
| 3.9        | 99.1  | 24.3         | 4 3/8                  | 111.1 |
| 4.0        | 101.6 | 25.0         | 4 1/8                  | 114.3 |

\*Other thicknesses available upon request.

\*\*Long Term Thermal Resistance Values provide a 15 year time weighted average in accordance with CAN/ULC S770.

<sup>1</sup>Note: Physical and thermal properties shown are based on data obtained under controlled laboratory conditions and are subject to normal manufacturing tolerances.

### Code Compliance

Listed by Underwriters Laboratories for use as part of a Class A, B or C Roof Covering. See U.L. Inc. Roofing Materials and Systems Directory for details.

Subject to the conditions of approval as a roof insulation when installed as shown in the current edition of the Factory Mutual Research Approvals Guide.

Mechanical attachment of roof insulation is the most dependable method of attachment to steel decks since it minimizes lateral movement and wind blow-off.

For details, consult Factory Mutual Loss Prevention Sheet 1-28, 1-29, 1-28R, 1-29R and current Approval Guide.

Federal Specification HH-I-1972/ASTM C1289.

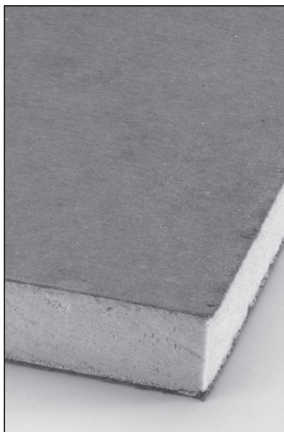
### Typical Physical Properties

| Property   | Value                                   | Test Method |
|--|---|-------------|
| Water Absorption, % by Volume – 2 hours                            | 1.5 max.                                | ASTM C209   |
| Dimensional Stability Change, 7 days @158°F (70°C), 90-100% RH     |   |             |
| • Lengthwise   | <2%                                     | ASTM D2126  |
| • Crosswise  | <2%                                     |             |
| Compression Resistance <sup>(1)</sup> 10% Consolidation— psi (kPa) | 20 (138) nom.                           | ASTM D1621  |
| Laminar Tensile Strength — psi (kPa)                               | 4 (28)                                  | ASTM C209   |
| Moisture Vapor Transmission <sup>(2)</sup>                         | <1 perm (57.5ng/(Pa•s•m <sup>2</sup> )) | ASTM E96    |
| Flame Spread <sup>(2),(3)</sup>                                    | <75                                     | ASTM E84    |
| Service Temperature  | -100 to 200 °F (-73 to 93 °C)           |             |

<sup>(1)</sup>Also available in 25 psi (172 kPa) <sup>(2)</sup>Foam core only.

<sup>(3)</sup>These numerical ratings are not intended to reflect hazards presented by these or any other material under actual fire conditions.

EnergyGuard™  
Roof Insulation





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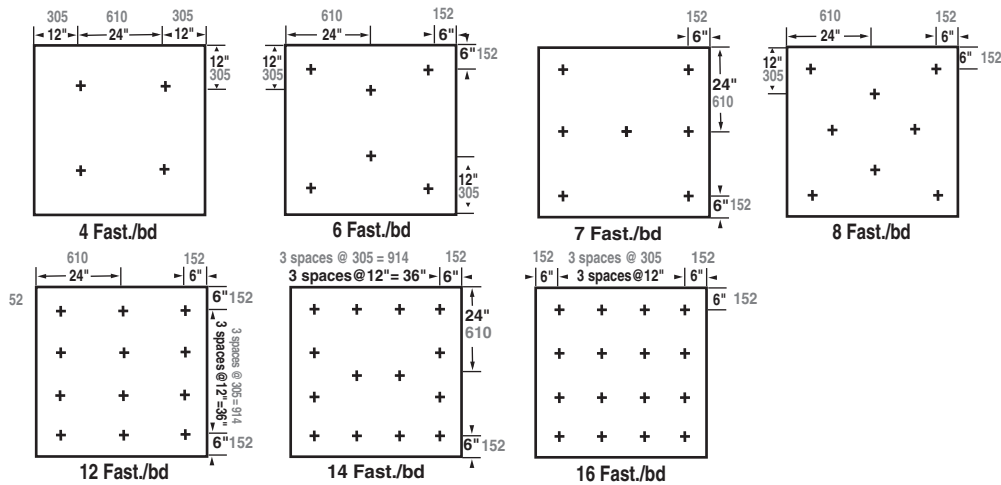
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### Limitations and Potential Fire Hazard

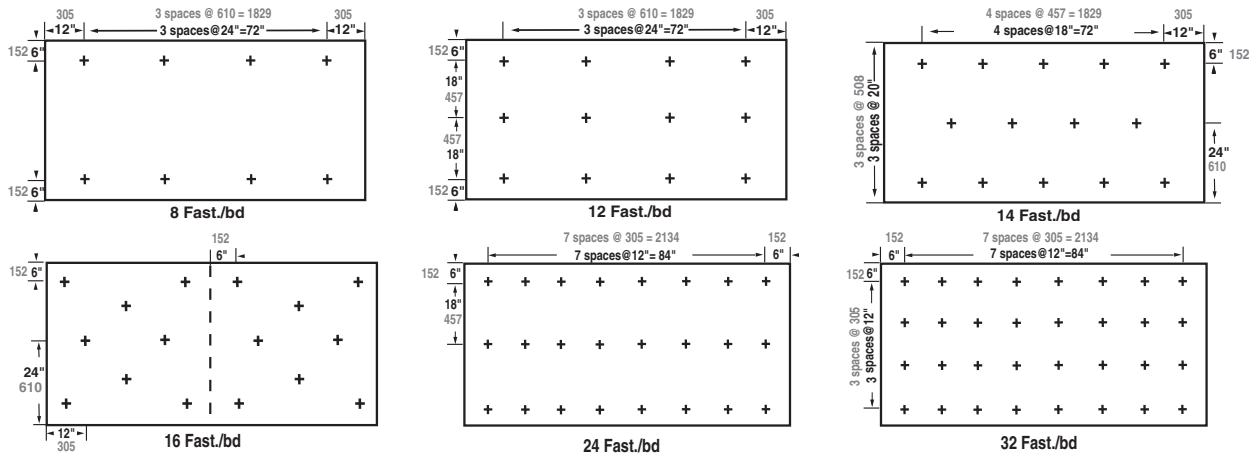
- EnergyGuard™ Roof Insulation is a non-structural, non-load bearing material. It is not designed for direct traffic usage unless adequately protected.
- EnergyGuard™ Roof Insulation should be stored protected from the elements. No more insulation should be installed than can be completely covered with roofing on the same day.
- As unprotected polyisocyanurate will burn, fire safety precautions should be observed wherever insulation products are used.
- Direct torching of modified bitumen roofing to EnergyGuard™ Roof insulation will present a fire hazard. A properly installed fiber glass base sheet **MUST** be used over the insulation.

### 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. 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 Contractor Services Hotline at 1-800-766-3411.

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