

EnergyGuard™ Composite Board Roof Insulation

Data Sheet

Updated: 1/10



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



ENERGYGUARD™ COMPOSITE BOARD ROOF INSULATION (1 of 2)

Description

EnergyGuard™ Composite Board Roof Insulation consists of an isocyanurate foam core integrally bonded to 1/2" thick High Density Fiberboard, Dens Deck® or EnergyGuard™ perlite on one side and a strong organic glass facer sheet on the other.

Uses

- EnergyGuard™ Composite Board roof insulation is designed for use over structural roof decks where "R" values of 7.4 or higher are required, along with moderate insulation thickness for roof edge detailing, and where comprehensive UL and FM approvals are necessary.
- 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.
- EnergyGuard™ Composite Board roof insulation, installed fiberboard, Dens Deck® or perlite side up, is an ideal insulation surface to receive a solid mopped, built-up or modified bitumen roof systems.

Advantages

- The excellent insulating qualities of isocyanurate foam are combined with the strong surface characteristics of high density fiberboard, Dens Deck® or perlite.
- The fiberboard or perlite side is able to receive hot mopped roof membranes that comply with NRCA bulletin #9.
- Subject to the conditions of approval as a roof insulation when installed as shown in the current edition of the *Factory Mutual Approvals Guide*.
- Fast and easy to apply — light in weight — can be applied to metal decks with mechanical fasteners such as the FM-approved DRILL•TEC™ roof insulation fastener system.
- Bonded components — possibility of delamination virtually eliminated.
- High resistance to compression — not easily damaged by imposed loads, construction traffic, shipping or handling.

Limitations and Potential Fire Hazard

- EnergyGuard™ Composite Board is normally installed with the facer sheet side down.
- EnergyGuard™ Composite Board roof insulation is non-structural, non-load bearing material. It is not designed for direct traffic usage unless adequately protected.
- EnergyGuard™ Composite Board insulation with perlite is not designed to be used with fully adhered single ply membranes. (Fiberboard or Dens Deck® for Single Ply)
- EnergyGuard™ Composite Board roof insulation should be stored dry and protected

Limitations (Continued)

- from the elements. No more insulation should be installed than can be completely covered with roofing on the same day.
- As unprotected composite board will burn, **fire safety precautions must be observed** wherever insulation products are used.
- Direct torching of modified bitumen roofing to EnergyGuard™ Composite Board roof insulation will present a **fire hazard**. A properly installed fiber glass base MUST be used over the insulation.

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

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 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 Approval Guide*.

Federal Specifications HH-I-1972/Gen, and HH-1-1972/3

Thermal Values¹

Thickness*	LTTT		Weight	
	Inches	mm	Value**	lb/sf kg/m ²
1.5	38.1	7.4	1.60	7.68
2.0	50.8	10.4	1.69	8.11
2.5	63.5	13.5	1.77	8.50
3.0	76.2	16.7	1.85	8.88
3.5	88.9	19.9	1.93	9.26
4.0	101.6	23.1	2.02	9.70

*Other thicknesses available upon request.

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

¹Note: Physical and thermal properties shown are based on data obtained under controlled laboratory conditions and are subject to normal manufacturing tolerances. Values are based on 1/2" fiberboard.

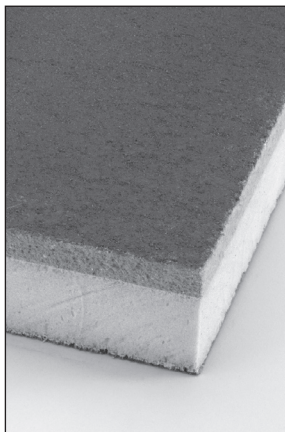
Typical Physical Properties

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%	ASTM D1621
Compression Resistance		
10% Consolidation— psi (kPa)	20 (138) nom.	ASTM D1621
Laminar Tensile Strength — psi (kPa)	4 (28)	ASTM C209
Moisture Vapor Transmission ⁽¹⁾	<1 perm (57.5ng/(Pa•s•m ²))	ASTM E96
Flame Spread ^{(1),(2)}	<75	ASTM E84
Service Temperature	-100 to 200 °F (-73 to 93 °C)	

⁽¹⁾Foam core only.

⁽²⁾These numerical ratings are not intended to reflect hazards presented by these or any other material under actual fire conditions.

**EnergyGuard™
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ENERGYGUARD™

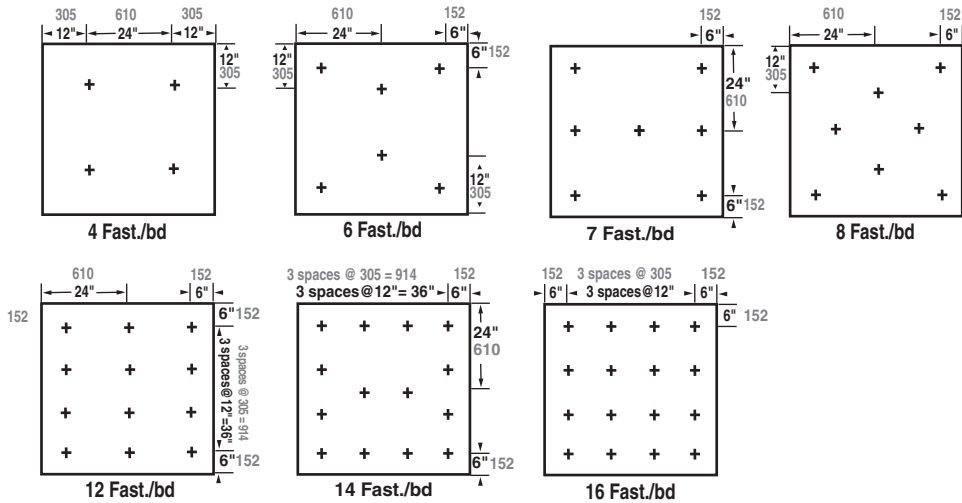
COMPOSITE BOARD

ROOF INSULATION (2 of 2)

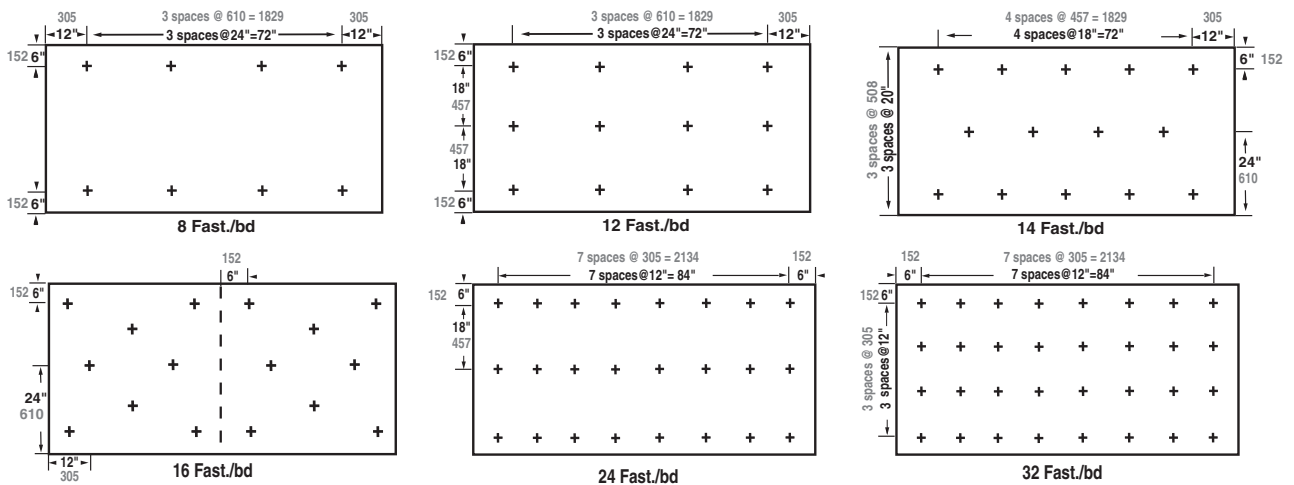
Design Considerations – Suggested Insulation Fastener Patterns

(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 FMRC Approved screws and plates. Consult FMRC 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". Due to ongoing testing programs and changes in FM Global (FMRC) requirements, the number of fasteners and their placement are subject to change without notice. Consult current FMRC Approval Guide and Loss Prevention Data Sheets 1-28, 1-29 and 1-29R for approved fastener density for Composite Board Roof Insulations. If your fastener pattern is not listed, please contact Contractor Services Hotline at 1-800-766-3411.

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