

# FMI-EPS Nailbase Insulation

*FMI's EPS Nailbase Insulation Panels, were installed by a small crew easily and quickly.*

*Keeping this project on schedule and under budget.*



FMI's EPS Nailbase insulation is a durable composite insulation consisting of FMI's closed-cell, lightweight, resilient and highly efficient expanded polystyrene (EPS) laminated to 7/16 inch oriented strand board (OSB), 1/2 or 5/8 inch plywood sheathing. We can also laminate Densdeck for fully adhered, built-up and cold applied roof systems. FMI-EPS Nailbase Insulation is an energy efficient one-piece component that works equally well as a substrate for steep and low-slope roofing systems, as well as for vaulted and cathedral ceilings. FMI- EPS Nailbase provides a superb, secure base for single ply roof systems that employ mechanically fastened, ballasted or adhered (EPDM, TPO, PVC or CSPE) membranes. Additionally, it can be applied as a one step roof system insulated underlayment for shingles, tile, slate and metal roof systems, for residential and commercial projects.

**+ Environmentally Friendly:** FMI's EPS Foam contains no dyes, formaldehyde or ozone-depleting HCFC's, it also contains recycled EPS and the EPS foam core is 100% recyclable.

**+ Permanent R-Value:** Unlike Polyisocyanurate there is no thermal drift or loss of R-Value, with EPS Foam Insulation. Designers and building owners can rest assured that the thermal insulation properties of EPS will remain stable and constant over the life of the roof cladding. FMI-EPS can offer a 20 year, Thermal Performance Warranty, that is not amortized over time.

**+ Proven Performance:** FMI- EPS NAILBASE, is not a new unproven product . EPS Foam Insulation has been providing superior thermal insulation since the 1960's. OSB has been used on jobs as a recognized wood sheathing panel since the 1970's. So the actual performance of both products are well known in the construction industry.

**+ Jobsite Durable:** FMI- EPS NAILBASE with OBS sheathing, provides resistance to foot and equipment traffic. Resistance to misuse and adverse weather conditions, such as high winds and hail that could effect traditional foam insulations.

**+ Water Resistant:** EPS Insulation's closed cell structure is not effected by moisture and the elements.

**+ Saves Labor & Construction Time:** Roofing crews that cost hundreds of dollars an hour, are not standing around waiting on multi-product deliveries. They are not handling multi-products, from the ground on to the buildings roof structure. Factory laminated EPS Nailbase Insulation is performed under ideal factory conditions, using state-of-the-art laminating equipment, and subject to third party quality control procedures. FMI- EPS Nailbase is superior and uniform to field applied laminated systems, FMI- EPS Nailbase Insulation saves time, jobsite labor costs and keeps the project on schedule.

**+ Code Approvals:** EPS insulation and OSB Sheathing are recognized by all major model building codes in the US. Its EPS core meets or exceeds ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation. FMI-EPS is recognized by the International Code Council Evaluation Service (ICC-ES) and has Underwriter's Laboratory and Factory Mutual approvals. ASTM D7033 OSB Sheathing,

**+ Sizes:** EPS Insulation and OSB Sheathing comes in easily managed 4' x 8' size, with an overall thickness of 1.5 inches to 8 inches. OSB is available in nominal thicknesses of 7/16". Plywood is available in a nominal 1/2" or 5/8" thickness. Custom sizes as well as optional laminate substrates are available, please contact FMI-EPS for details.

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**Application:** Installation shall be in strict accordance with local Building Code Officials, Roofing Manufacture and Fastener Manufacture's requirements.

FMI-EPS recommends that EPS Nailbase Insulation be installed with continuous side joints and end joints, in a offset (staggered) pattern.

We recommend that all joints (side and end) are offset 12 inches (minimum). We also recommend that the Nailbase Insulation be installed in two layers.

**R-Values:**

THERMAL PROPERTIES AND THICKNESSES FOR FMI'S EPS NAILBASE					
R-VALUE	R-24		R-30		R-38
Panel Thickness					
at 75° F	6.625"		8.125"		10.25"
at 40° F	6.125"		7.50"		9.50"

\*Calculated R-Values are for the composite insulation panel including Type I EPS and one sheet of 7/16" OSB. Per ASTM C578, APA and ASHRAE. Greater R-Values can be obtained if higher density EPS is used. FMI recommends that the Nailbase Insulation be installed in two layers.

**Technical Data** EPS Foam Insulation meets or exceeds the physical and thermal and property standards as established in ASTM C578

Physical Properties	Type I	Type VIII	Type II	Type IX	Type XIV
R-Value* per 1 inch					
75 + 2°F °F.ft².h/Btu	3.85	3.92	4.17	4.35	4.35
40 + 2°F	4.17	4.25	4.55	4.76	4.76
Comprehensive Strength @ 10% psi	10.0	13.0	15.0	25.0	40.0
Coefficient of Thermal	0.000035	0.000035	0.000035	0.000035	0.000035
Moisture Resist. % by volume Max	<4.0	<3.0	<3.0	<2.0	<2.0
Water Vapor	5.0	3.5	3.5	2.5	2.5
Max Ser. Temp	167 / 180	167 / 180	167 / 180	167 / 180	167 / 180
Density Minimum	.90	1.15	1.35	1.80	2.4
Nominal	1.0	1.25	1.50	2.0	3.0

\*R means resistance to heat flow. The higher the R-value, the greater the insulating power.

Federal Trade Commission requires using the R-Value publication at 75°F temperature when calculating R-Values of all insulations. Aged R-Values of alternative products should be compared to determine long-term benefit. Some types of insulation lose their R-Value over time.

FMI-EPS has a flame spread index of 20 and a smoke developed index of 150-300 when tested in accordance with ASTM E84/UL 723 for densities from 0.7 - 3.0 lb/ft³.

**Insulation Consideration:**

- **DO NOT COMPARE** polyisocyanurate conditioned R-Values by RIC-TIMA and PIMA to EPS R-Values as per ASTM C-578.
- Ask for a **20 year 100% R-Value Warranty.**
- EPS Insulation offers the **Best Insulating Value Per Dollar** than any material available today.

**Features:**

- **Low Moisture Absorption:** EPS' insulations closed cell structure prevents capillary absorption of water and moisture. As density is increased, moisture resistance decreases, but it is still minimal.
- **Permeability:** EPS has a low permeability, but is not considered a vapor barrier.
- **Inert:** EPS experiences no physical or chemical breakdowns over time. No nutrient value to animals, insects, or organisms. No nutrient value to bacterial growth including mold.
- **No Leachates:** EPS will not contaminate the surrounding environment.
- **Design Flexibility:** EPS can be fabricated into various shapes and sizes as needed.

**Design Cautions:**

- **Flammability:** EPS is combustible and should not be exposed to flame or other ignition sources. EPS should be covered with a thermal barrier or otherwise installed in accordance with applicable code requirements.
- **Solvent Damage:** EPS is susceptible to damage by petroleum based solvents and their vapors. Protect with vapor barrier covering and use compatible adhesives when applicable.
- **Ultraviolet Damage:** Extended exposure to sunlight causes minor discoloration and surface dusting. Shield EPS from direct sunlight for prolonged periods of time.



The information in this bulletin is presented in good faith, and is believed to be accurate. All statements