

# InsulFoam Flat EPS



## Overview

Carlisle's InsulFoam Flat EPS is a rigid insulation board composed of closed-cell, lightweight expanded polystyrene (EPS). This product is available in a wide range board sizes and densities that meet or exceed the requirements of ASTM C578, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation. InsulFoam Flat offers a long-term, stable R-value and offers excellent dimensional stability, compressive strength, and water resistance.

## Features and Benefits

- » Labor and cost savings: no complicated filler panel systems; can be installed in a single layer for thicknesses up to 40"
- » Environmentally friendly: contains no ozone-depleting blowing agents, may contain recycled material, and is 100% recyclable if removed or replaced
- » Stable R-value: thermal properties will remain stable over the material's entire service life, no thermal drift
- » Moisture and mold resistance: does not readily absorb moisture from the environment, does not sustain mold or mildew growth
- » Proven performance: manufactured using the same chemistry since the mid-1950s
- » Variety of compressive strengths: available in more compressive strengths than comparable insulation products

## Panel Characteristics

InsulFoam is available in 4' x 4' (1220 mm x 1220 mm) and 4' x 8' (1220 mm x 2440 mm) standard sizes and thickness from ¼" to 40". Custom lengths, widths, and densities are available with minimal lead time.

## Applications

InsulFoam Flat is well-suited for a variety of single-ply roof systems, including EPDM, TPO, and PVC, and assembly types, including ballasted, mechanically fastened, and fully adhered. Consult Carlisle Specifications and Details for more information.

## Installation Considerations

1. Install only as much insulation as can be covered by a roof membrane system, and/or made watertight by the end of each day.
2. InsulFoam Flat should not be exposed directly to solvent- or petroleum-based adhesives and sealants.
3. Allow approximately a ¼" space between insulation and vertical surfaces or roof projections. Do not force or jam product into place.
4. In re-cover applications, ensure no moisture is trapped in the new or existing roofing system.

## Loose-Laid Insulation

Install InsulFoam Flat with continuous side joints and end joints, staggered so they are offset by a minimum of 12" from the end joints in adjacent rows. Insulation should abut tightly against adjacent boards. Joints greater than ½" should be filled with the same insulation that is being used in the field of the roof. If insulation is being installed over a thermal barrier or existing layer of insulation, or under a cover board, all joints must be offset a minimum of 6" between layers. When installing InsulFoam Flat directly to a metal deck, the edges of the insulation parallel to the deck ribs must be solidly supported and centered on the ribs.

Additionally, for metal decks, ensure that the insulation has a thickness that is adequate to span the rib openings. When conditions dictate, in order to prevent wind blow-off or damage during installation, loose-laid insulation should be weighed down or tacked into place with a minimal quantity of mechanical fasteners.

*Review Carlisle specifications and details for complete installation information.*

## LEED® Information

Pre-consumer Recycled Content	Up to 25%
Post-consumer Recycled Content	0%
Manufacturing Location	Anchorage, AK Puyallup, WA Dixon, CA Chino, CA Mead, NE Aurora, CO Phoenix, AZ Lakeland, FL

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## Typical Properties and Characteristics

Property	Type I	Type VIII	Type II	Type IX	Type XIV	Type XV	Test Method
Nominal Density (pcf)	1	1.25	1.5	2	2.5	3	ASTM C303
C-Value (Conductance) - per inch BTU/(hr•ft <sup>2</sup> •°F)	0.260	0.255	0.240	0.230	0.222	0.217	ASTM C518
R-Value (Thermal Resistance) - per inch (hr•ft <sup>2</sup> •°F)/BTU	3.85	3.92	4.17	4.50	4.50	4.60	ASTM C518
Compressive Strength (psi, 10% deformation)	10-14	13-18	15-21	25-33	40	60	ASTM D1621
Flexural Strength (min. psi)	25	30	35	50	60	75	ASTM C203
Dimensional Stability (maximum %)	2.0	2.0	2.0	2.0	2.0	2.0	ASTM D2126
Water Vapor Permeance (max. perm., 1 inch)	5.0	3.5	3.5	2.0	2.5	2.5	ASTM E96
Water Absorption (max. % vol.)	4.0	3.0	3.0	2.0	2.0	2.0	ASTM C272
Capillarity	None	None	None	None	None	None	-
Flame Spread	< 20	< 20	< 20	< 20	< 20	< 20	ASTM E84
Smoke Developed	150-300	150-300	150-300	150-300	150-300	150-300	ASTM E84

\* Properties are based on data provided by resin manufacturers, independent test agencies and Carlisle.