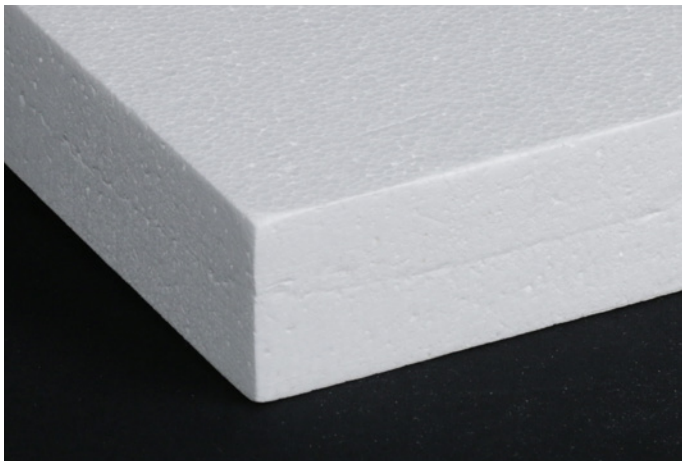
InsulFoam Flat EPS



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

CARLISLE SYNTEC SYSTEMS

InsulFoam Flat EPS

EPS Weight Guide - Weight per SF in lbs

Product Name	InsulFoam I	InsulFoam VIII	InsulFoam II	InsulFoam IX	InsulFoam XIV	InsulFoam XV
	Type I 10 PSI	Type VIII 15 psi	Type II 20 psi	Type IX 25 psi	Type XIV 40 psi	Type XV 60 psi
Nominal Density (pcf)	1.0	1.25	1.5	2.0	2.5	3.0
Thickness in inches						
0.25	0.02	0.03	0.03	0.04	0.05	0.06
0.5	0.04	0.05	0.06	0.08	0.10	0.13
0.75	0.06	0.08	0.09	0.13	0.16	0.19
1	0.08	0.10	0.13	0.17	0.21	0.25
1.25	0.10	0.13	0.16	0.21	0.26	0.31
1.5	0.13	0.16	0.19	0.25	0.31	0.38
1.75	0.15	0.18	0.22	0.29	0.36	0.44
2	0.17	0.21	0.25	0.33	0.42	0.50
2.25	0.19	0.23	0.28	0.38	0.47	0.56
2.5	0.21	0.26	0.31	0.42	0.52	0.63
2.75	0.23	0.29	0.34	0.46	0.57	0.69
3	0.25	0.31	0.38	0.50	0.63	0.75
3.25	0.27	0.34	0.41	0.54	0.68	0.81
3.5	0.29	0.36	0.44	0.58	0.73	0.88
3.75	0.31	0.39	0.47	0.63	0.78	0.94
4	0.33	0.42	0.50	0.67	0.83	1.00
4.25	0.35	0.44	0.53	0.71	0.89	1.06
4.5	0.38	0.47	0.56	0.75	0.94	1.13
4.75	0.40	0.49	0.59	0.79	0.99	1.19
5	0.42	0.52	0.63	0.83	1.04	1.25
5.25	0.44	0.55	0.66	0.88	1.09	1.31
5.5	0.46	0.57	0.69	0.92	1.15	1.38
5.75	0.48	0.60	0.72	0.96	1.20	1.44
6	0.50	0.63	0.75	1.00	1.25	1.50
6.25	0.52	0.65	0.78	1.04	1.30	1.56
6.5	0.54	0.68	0.81	1.08	1.35	1.63
6.75	0.56	0.70	0.84	1.13	1.41	1.69
7	0.58	0.73	0.88	1.17	1.46	1.75
7.25	0.60	0.76	0.91	1.21	1.51	1.81
7.5	0.63	0.78	0.94	1.25	1.56	1.88
7.75	0.65	0.81	0.97	1.29	1.61	1.94
8	0.67	0.83	1.00	1.33	1.67	2.00
8.25	0.69	0.86	1.03	1.38	1.72	2.06
8.5	0.71	0.89	1.06	1.42	1.77	2.13
8.75	0.73	0.91	1.09	1.46	1.82	2.19
9	0.75	0.94	1.13	1.50	1.88	2.25
9.25	0.77	0.96	1.16	1.54	1.93	2.31
9.5	0.79	0.99	1.19	1.58	1.98	2.38
9.75	0.81	1.02	1.22	1.63	2.03	2.44
10	0.83	1.04	1.25	1.67	2.08	2.50

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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•ft²•°F)	0.260	0.255	0.240	0.230	0.222	0.217	ASTM C518
R-Value (Thermal Resistance) - per inch (hr•ft²•°F)/BTU @ 75°F	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.

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