

## Technical Data

## Expanded Polystyrene Physical Properties

Styrene Products, Inc. expanded polystyrene (EPS) rigid board foam plastic is for all types of industrial, packaging, and construction uses. Expanded Polystyrene is manufactured in conformance with numerous standards.

- ASTM C 578 (Thermal Insulation)
- ASTM E 2430 (EIFS boards)
- ICC ES AC12 (Foam Plastic Insulation)

Property		ASTM C578						
		Type XI	Type I	Type VIII	Type II	Type IX	Type XIV	Type XV
Nominal Density	lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	0.75 (12)	1.00 (16)	1.25 (20)	1.50 (24)	2.00 (32)	2.50 (40)	3.00 (48)
Density <sup>1</sup> , min.	lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	0.70 (12)	0.90 (15)	1.15 (18)	1.35 (22)	1.80 (29)	2.40 (38)	2.85 (46)
Design Thermal Resistance per 1.0 in. thickness	25 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.60 (0.63)	4.35 (0.77)	4.55 (0.80)	4.76 (0.84)	5.00 (0.88)	5.00 (0.89)	5.10 (0.90)
	40 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.43 (0.60)	4.17 (0.73)	4.25 (0.75)	4.55 (0.80)	4.76 (0.84)	4.76 (0.84)	4.85 (0.85)
	75 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.22 (0.57)	3.85 (0.68)	3.92 (0.69)	4.17 (0.73)	4.35 (0.77)	4.35 (0.77)	4.45 (0.78)
Thermal Resistance <sup>1</sup> , min per 1.0 in. thickness	25 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.45 (0.61)	4.20 (0.74)	4.40 (0.77)	4.60 (0.85)	4.80 (0.84)	4.80 (0.84)	4.90 (0.86)
	40 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.30 (0.58)	4.00 (0.70)	4.20 (0.74)	4.40 (0.77)	4.60 (0.81)	4.60 (0.81)	4.70 (0.83)
	75 °F °F.ft <sup>2</sup> .h/Btu (°K.m <sup>2</sup> /W)	3.10 (0.55)	3.60 (0.63)	3.80 (0.67)	4.00 (0.70)	4.20 (0.74)	4.20 (0.74)	4.30 (0.76)
Compressive Strength <sup>1</sup> @10% deformation, min.	psi (kPa)	5.0 (35)	10.0 (69)	13.0 (90)	15.0 (104)	25.0 (173)	40.0 (276)	60.0 (414)
Flexural Strength <sup>1</sup> , min.	psi (kPa)	10.0 (69)	25.0 (173)	30.0 (208)	35.0 (242)	50.0 (345)	60.0 (414)	75.0 (517)
Water Vapor Permeance <sup>1</sup> of 1.0 in thickness, max., perm		5.0	5.0	3.5	3.5	2.5	2.5	2.5
Water Absorption <sup>1</sup> by total immersion, max., volume %		4.0	4.0	3.0	3.0	2.0	2.0	2.0

Expanded polystyrene 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 - 2.0 lb/ft<sup>3</sup>.

<sup>1</sup> See ASTM C578 Standard for test methods and complete information.

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