

Expanded Polystyrene (EPS) Insulation Board

These requirements apply for expanded polystyrene intended for use in Sto EIFS. Sto Corp. provides this for information only. Sto Corp. is not a manufacturer of expanded polystyrene board.

Physical Requirements

Molded billets shall be conditioned in accordance with the following:

1. Molded billets shall be aged (air dried) in ambient conditions for a minimum of six weeks.
2. Molded billets shall be heat dried for a minimum of five days at a constant temperature of 140 degrees F (60 degrees C).

Dimensions and Permissible Variations

1. Insulation board covered by this specification shall conform to the nominal dimensions:
Thickness: $\frac{3}{4}$ inches (19 mm) min to 12 inches (305 mm) max (specify thickness)
Width: 24 inches (610 mm)
Length: 48 inches (1219 mm) for PB Systems; 96 inches (2438 mm) for PM Systems
2. Dimensional Tolerances
Length: +/- 1/16 inches (+/- 1.6 mm)
Width: +/- 1/16 inches (+/- 1.6 mm)
Thickness: $\frac{3}{4}$ inches (19 mm); +/- 1/16 inches (+/- 1.6 mm); +1/16 inches (+1.6 mm); 1 inch (25.4 mm) to 12 inches (305 mm)
3. Edge Trueness – Unless otherwise specified and approved by the EIFS manufacturer, insulation board shall be furnished with true edges. Edges shall not deviate more than 1/32 inches (0.8 mm) in 12 inches (305 mm).
4. Face Flatness – Insulation board shall be furnished flat and shall not exhibit any bowing of more than 1/32 inches (0.8 mm) in the length.
5. Squareness – Insulation board shall not deviate from squareness by more than 1/32 inches (0.8 mm) in 12 inches (305 mm).

Acceptable conditions for use:

1. Defects – Insulation board shall have no defects that will adversely affect its service qualities. It shall be of uniform texture, and free from foreign inclusions, broken edges or corners, slits or objectionable odors.
2. Crushing and depressions – Insulation board shall have no crushed or depresses areas on any surface exceeding 1/16 inches (1.6 mm) in depth on more than 5% of the total surface area.
3. Voids – Insulation board shall have no more than 8 voids having dimensions larger than 1/8 inches (3.2 mm) x 1/8 inches (3.2 mm) x 1/8 inches (3.2 mm) per 8 sq ft. (0.74 m) of surface area.
4. Projections – Insulation board shall be free of surface projections or wire marks in excess of 1/16 inches (1.6 mm).

Packaging

All insulation board shall be packaged in polyethylene bags as required by the EIFS manufacturer.

Alternative methods of packaging shall be submitted to the EIFS manufacturer and approved in writing prior to use. The supplier shall mark the lot number on each package as required.

Properties and Requirements of EPS for Use in EIFS

Properties

ASTM E 2430 (or ASTM C578) Specification for Expanded Polystyrene (EPS) Thermal Insulation Boards for use in Exterior Insulation and Finish Systems (EIFS)

Classification: Type 1

Density, min, lb/cubic ft (kg/cubic m): 1.00 (16) nominal

Thermal resistance of 1.00 in (25.4 mm) thickness,

min, F* sq ft * h/Btu (K*sq m/W)

40 deg F (4.4 deg C) 4.00 (0.70)

75 deg F (23.9 deg C) 3.60 (0.63)

Compressive resistance at 10% deformation or yield, 10.0 (69)
Whichever occurs first, min, psi (kPa)

Tensile Strength, min, psi 16 - 20
(in accordance with ASTM D1623)

Flexural strength, min, psi (kPa) 25-30 (min 173)
Shear modulus, max, psi (kPa) 400 (2758)
(in accordance with ASTM C273)

Water vapor permeance of 1.00 in (25.4 mm) 5.0 (287)
Thickness, max, perm
Water absorption by total immersion, max, volume % 4.0
Dimensional stability (change in dimensions), max, % 2.0
Oxygen index, min, volume % 24.0
Flame spread, max 25
(In accordance with ASTM E84)
Smoke developed, max 450
(In accordance with ASTM E84)

Requirements:

Board thickness, Class PB and PM
Maximum 12 inches (305 mm)
Minimum $\frac{3}{4}$ inches (19 mm)

Board width, max
Class PB 24 inches (610 mm)
Class PM 24 inches (610 mm)

Board length, max
Class PB 48 inches (1219 mm)
Class PM 96 inches (2438 mm)