



Teifs Board

Expanded Polystyrene Insulation Board (EPS) Specifications

1. Scope:

This specification covers Type 1 Expanded Polystyrene Insulation Board ASTM C 578 to be used with the Teifs Exterior Insulation and Finish System.

2. Applicable Documents:

2.1 ASTM Standards

- C 273 - Shear text in flatwise plane of flat sandwich construction or sandwich cores.
- C 518 - Thermal conductivity factor - (K)
- C578 - Preformed, cellular Polystyrene Insulation Board.
- D 1623 - Tensile and tensile adhesion properties of rigid cellular plastics.
- D 2863 - Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials

2.2 Teifs Quality Control Manual for Insulation Board manufacturers

3. Materials and Manufacturer:

- 3.1** Insulation board shall be formed by steam expansion of Polystyrene resin beads in a closed mold. The insulation board shall be of uniform density and have essentially closed cells. All insulation board shall contain sufficient flame retardants to meet the oxygen index, flammability and smoke development requirements of this specification.
- 3.2** All insulation boards shall be molded from modified grade expanded polystyrene meeting requirements of the building code having jurisdiction. The addition of scrap or regrind is not permissible.
- 3.3** The expandable polystyrene must go through rigid screening to meet PSA (particle size analysis) specified by Teifs. The molecular weight shall also be specified by Teifs.

4. Inspection Requirements:

- 4.1** In accordance with the third party certification and quality assurance program.
- 4.2** Shear modules and tensile strength properties are required to be evaluated at the beginning of the program.

5. Qualification Requirements:

5.1 Dimensional Requirements:

A. Dimensional Tolerances

- Length: 1.22 m (48 in.)
± 1.6 mm (± 1/16 in.)
- Width: 609.6 mm (24 in.)
± 1.6 mm (± 1/16 in.)
- Thickness: 19 mm (3/4 in.) to
102 mm (4 in.) ± 1.6 mm (± 1/16 in.)

B. Edge Trueness - Unless otherwise specified and approved by Teifs, the Insulation and Finish System manufacturer, insulation board shall be furnished with true edges. Edges shall not deviate more than 0.8 mm (1/32 in.) in 305 mm (12 in.).

C. Face Flatness - Insulation board shall be furnished flat and shall not exhibit any bowing of more than 0.8 mm (1/32 in.) in the length.

D. Squareness - Insulation board shall not deviate from squareness by more than 0.8 mm (1/32 in.) of total length or width.

5.2 Workmanship, finish and appearance at time of delivery:

A. 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.

B. Crushing and Depressions - Insulation board shall have no crushed or depressed areas on any surface exceeding 1.6 mm (1/16 in.) in depth on more than 5% of the total surface area.

C. Voids - Insulation board shall have no more than 8 voids having dimensions larger than 3.2 mm (1/8 in.) x 3.2 mm (1/8 in.) per 0.74 m² (8 sq. ft.) of surface area.

D. Projections - Insulation board shall be free of surface projections or wire marks in excess of 1.6 mm (1/16 in.).



5.3 Combustibility Characteristics:

Insulation board is an organic material and is therefore combustible. It should not be exposed to flames or other ignition sources. The values obtained by ASTM D 2863 and ASTM E 84 do not necessarily indicate or describe the fire risk of the materials in end use configuration and are used in this specification primarily to distinguish between insulation formulated with flame retardants and those not so formulated.

5.4 Molded Billets:

- A. Molded billets shall be dimensionally stable prior to being cut into boards or special shapes.
- B. Molded billets shall be conditioned in one of 3 ways:
 - 1. Molded billets shall be aged (air dried) in ambient conditions for a minimum of six (6) weeks, or,
 - 2. Molded billets shall be heat dried for a minimum of five (5) days at a constant temperature of 60 °C (140 °F).

NOTE: *Insulation board manufacturers using this method shall advise Teifs, and the Third Party Certification and Quality Assurance Agency, in writing.*

The Block Molder's plant shall be inspected by the Third Party Certification and Quality Assurance Agency, and approved by Teifs, prior to the use of this conditioning method, or,

- 3. Method to eliminate expansion agent in billet to establish dimensional stability equal to method 1 or 2 above.

6. Sampling and Inspection:

- 6.1 Sampling shall be in accordance with the Third Party Certification and Quality Assurance Program.
- 6.2 As deemed necessary by Teifs.

7. Rejection:

- 7.1 Material that fails to conform to the requirements of this specification shall be rejected. Rejection shall be reported in writing within five (5) days to the producer or supplier and Teifs.
- 7.2 The insulation board supplier may resubmit rejected materials after removal of that portion not conforming to this specification. The re-inspection and resubmittal shall be completed within three (3) days of notification by telephone or written communications.

8. Certification:

- 8.1 Upon request, certification of compliance with this specification shall promptly be forwarded to Teifs, or their designee.

9. Product Marking:

- 9.1 Insulation boards shall be marked (stamped) in accordance with the requirements of this Section.
 - A. Each board shall be marked on at least one edge.
 - B. In addition, one board in each package shall be marked on both faces.
- 9.2 Stamp design and layout shall be in accordance with the requirements of the applicable building code.
NOTE: Suppliers may add their company name if they so desire.

10. Packaging:

- 10.1 All insulation board shall be packaged in polyethylene bags as required by Teifs.
- 10.2 Alternate methods of packaging shall be submitted to Teifs and approved in writing prior to use.

WARNING: This product is a component part of a complete TEIFS WALL SYSTEM. Specifications require that only approved, trained or otherwise knowledgeable applicators install such systems. TEIFS cannot be responsible for deterioration of substrate, mold, mildew, and wood rot due to water intrusion or entrapment from causes such as improperly installed windows; windows that leak at the miter joints, mullions, or through improperly installed glazing; improper flashing, lack of flashing or use of improper flashing materials; use of improper sealants; or inadequate specifications, details or installations of the TEIFS WALL SYSTEM. Sealants and flashing will also deteriorate over time if not maintained. Maintenance of the TEIFS WALL SYSTEM is required. No exterior insulation finish system should be installed on a residential project, (or any other projects as required by the applicable model code), without providing for a secondary weather resistant barrier.



Expanded Polystyrene Insulation Board (EPS) Teifs Board Certification

APPENDIX A

(To be typed on supplier's letterhead)

Teifs
220 Burluson
San Antonio, TX 78202

Attention:
RE: Insulation Board Certification

Project Name: _____

Address: _____

City, State, Zip: _____

To Whom It May Concern:

This letter is to certify that the Expanded Polystyrene Insulation Board supplied to the above-referenced project meets the requirements of the current edition of the "TeifsBoard Specifications for Expanded Polystyrene Insulation Board (EPS)" published by Teifs.

Company Name: _____

Owner, Principle or Corporate Officer: _____

Authorized Signature: _____

Title: _____

Date: _____

cc: Distributor
Contractor

Teifs Board
Expanded Polystyrene
Insulation Board (EPS) Specifications

Table 1
Properties and Requirements of EPS for use in EIFS

Classification	Type I				
Density, min, kg/m ³ (lb/ft ³)	15.2 min (.95)				
Thermal resistance of 1 in. (25.4 mm) thickness at -3.9°C (25°F)	4.35				
Thermal resistance of 1 in. (25.4 mm) thickness at 4.4°C (40°F)	4.17				
Thermal resistance of 1 in. (25.4 mm) thickness at 23.9°C (75°F)	3.85				
Compressive strength, min., (kPA) psi	69 (10)				
Tensile strength, min., (kPA) psi	103 (15)				
Flexural strength, min., (kPA) psi	173 (25)				
Shear modulus, max., (kPA) psi	2,758 (400)				
Water vapor permeance of 1.00 in. (25.4 mm) thickness, max, perm (ng/Pa.s.m ²)	287 (5)				
Water absorption by total immersion, max., volume %	4				
Dimensional stability (change in dimensions), max., %	2				
Oxygen index, min., volume %	24				
Flame spread, max.	25				
Smoke developed, max.	450				
Requirements: Board thickness, Class PB and PM	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: right;">Maximum</td> <td style="width: 50%;">102mm. (24 in.)</td> </tr> <tr> <td style="text-align: right;">Minimum</td> <td>19mm (3/4 in.)</td> </tr> </table>	Maximum	102mm. (24 in.)	Minimum	19mm (3/4 in.)
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Class PM	2,438 mm. (96 in.)				

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