**DESCRIPTION**

EEI Expanded Polystyrene is rigid and lightweight. By controlling the density of expanding beads during the manufacturing process, EEI can custom produce insulation materials according to the specific requirements of customers’ applications. EEI production of Expanded Polystyrene boards and injection molded boards are in conformity with the British Standard specification BS EN 13163:2012 for expanded Polystyrene boards, DIN and ASTM (American Society for Testing and Materials).

Type N [Normal]: It consists of 100% of closed cell polystyrene expandable beads.

Type A [Fire Retardant]: It is similar to Type N, but meets additional requirements for the extent of burn when tested with the method given by virtue of BS 4735. This requirement is met by the incorporation of flame retardant additives and other appropriate modifications.

**EPS CHARACTERISTICS**

- Heat resistant
- Low thermal conductivity
- High permanent R-value
- High compressive strength
- Excellent stock absorption
- Excellent dimensional stability
- Low water absorption
- Reflective white color
- Non-dusting
- Will not rot, mildew or support bacterial growth
- Resistant to most acids and alkalis

**EPS ADVANTAGES**

- Energy saving
- Low material / installation costs
- Broad range of densities and sizes
- Easy to handle and apply
- Simple to cut and shape
- Tolerates broad range of temperatures
- Doesn’t irritate skin
- Restricts moisture penetration
- Does not deplete the Earth ozone layer

**THICKNESS AND TOLERANCES**

Thickness can be cut as required, from 8 mm up to 1120 mm. On specified thickness, length, and width, tolerance will be + - 2 mm.

**MOLDED BOARDS**

Molded boards are boards of injection molded from expanded beads, that has surface skin on all sides and molded edges.

**CUT BOARDS**

The large molded blocks are hot wire cut on flat lines at any desired thickness, width, and length. In addition, EEI CAD / CAM capabilities provide its customers with an infinite variety of standard, customs, and radius products. Cut boards are boards cut from a block molded from expanded beads, which could be fine, very fine, or coarse grain. Used raw materials could be of general purpose (type N material) or fire retardant category (type A material).
APPLICATIONS OF EXPANDED POLYSTYRENE INSULATION:

PRODUCT PARAMETERS
- Insulation of roofs, walls, and floors - Prefab houses and partitions
- Sound insulation
- Molded pipe insulation for air conditioning
- Insulation of hot and cold water lines
- Expansion joints
- Hourdis and void formers
- Insulation of deep - freeze rooms, cold stores, cold display cabinets and refrigerated vehicles
- Pipe insulation
- Wall insulation inserts

INSULATION PROPERTIES

Description
Injection moulded expanded polystyrene closed cell expanded blue polystyrene panels. It features excellent thermal insulation properties, high compressive strength and very low absorption. EPS panels are moulded and have no cut sides.

Application of EPS for inverted membrane roofs:
EPS panels are recommended for any application requiring efficient thermal insulation, good resistance to moisture, and high mechanical strength. By virtue of its high compressive strength and low water absorption, EPS is ideal for the thermal insulation of inverted membrane roofs. EPS panels can be covered with concrete (or other material with sufficient loads capacity) to enable adequate ballasting and protection from UV radiation, rain and storms. Water absorption by EPS panels is very low and has practically no adverse effect on thermal insulation.

Resistance to chemicals and outdoor exposure:
The resistance of EPS to chemicals, solvents, and aging is very much the same as that of the polystyrene (Extruded or cut-cell surface boards), from which it has been derived. EPS is immune to water and aqueous solution of salts, most acids and alkalis. Bonding EPS with emulsion or contact adhesive and bitumen will not affect its physical properties.

Installation
EPS panels can be worked with conventional wood working tools. The panels could be bound together with hot bitumen, dispersion - type structural or special adhesives. Instructions for use and safety precautions relating to the adhesive must be observed.

Stability
Unlike extruded panels, EPS is very stable in high temperatures; it does not warp and would not cause problems which often happen with other boards.

Dimensions (L X B X T)
- 600 x 125 x 100 - 1 mm
- 600 x 100 x 1 - 100 mm
- 400 x 125 x 1 - 100 mm
- 400 x 100 x 1 - 100 mm
- 250 x 125 x 1 - 100 mm
- 230 x 100 x 1 - 100 mm
- 300 x 100 x 1 - 60 mm
- 200 x 100 x 1 - 50 mm
## STANDARD GRADE

### GENERAL PROPERTIES OF THERMAL INSULATION

<table>
<thead>
<tr>
<th>Method of Test</th>
<th>Unit Measurements</th>
<th>LB</th>
<th>SD</th>
<th>HB</th>
<th>EHB</th>
<th>UHB</th>
<th>SHB</th>
<th>XE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type X</td>
<td>Type XI</td>
<td>Type I</td>
<td>Type VIII</td>
<td>Type II</td>
<td>Type IX</td>
<td>Type XIV</td>
<td>Type XV</td>
<td></td>
</tr>
<tr>
<td><strong>R-value, Thermal Resistance of 1.00-in. (25.4-mm) thickness</strong></td>
<td><strong>Mean Temperature: 75 ± 2°F (24 ± 1°C)</strong></td>
<td>C 518</td>
<td><em>F·ft²·h/Btu</em></td>
<td>&gt;3.1</td>
<td>&gt;3.8</td>
<td>&gt;4.0</td>
<td>&gt;4.2</td>
<td>&gt;4.2</td>
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<tr>
<td><strong>R-value, Thermal Conductivity (k value)</strong></td>
<td><strong>Mean Temperature: 95 ± 2°F (35 ± 2°C)</strong></td>
<td>C 518</td>
<td>Blu/In/h·ft²·°F</td>
<td>&gt;0.320</td>
<td>&gt;0.279</td>
<td>&gt;0.263</td>
<td>&gt;0.252</td>
<td>&gt;0.238</td>
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<tr>
<td><strong>Flexural Strength</strong></td>
<td>C 203</td>
<td>psi</td>
<td>&gt;70</td>
<td>&gt;75</td>
<td>&gt;80</td>
<td>&gt;85</td>
<td>&gt;90</td>
<td>&gt;95</td>
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<tr>
<td><strong>Compressive Strength</strong></td>
<td>D1621</td>
<td>psi</td>
<td>&lt;7.0</td>
<td>&gt;175</td>
<td>&gt;208</td>
<td>&gt;240</td>
<td>&gt;264</td>
<td>&gt;288</td>
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<tr>
<td><strong>Dimensional Stability</strong></td>
<td>D 2126</td>
<td>%</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
</tr>
<tr>
<td><strong>Water vapor Permeance</strong></td>
<td>E 96</td>
<td>perm</td>
<td>&lt;5.0</td>
<td>&lt;5.0</td>
<td>&lt;3.5</td>
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<tr>
<td><strong>Water Absorption by Total immersion</strong></td>
<td>C 272</td>
<td>volume (%)</td>
<td>&lt;4.0</td>
<td>&lt;4.0</td>
<td>&lt;3.0</td>
<td>&lt;3.0</td>
<td>&lt;2.0</td>
<td>&lt;2.0</td>
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<tr>
<td><strong>Minimum Density</strong></td>
<td>D 1622</td>
<td>lb/ft³</td>
<td>0.7</td>
<td>0.9</td>
<td>1.15</td>
<td>1.35</td>
<td>1.8</td>
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<tr>
<td></td>
<td></td>
<td>(kg/m³)</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>22</td>
<td>29</td>
<td>28</td>
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