TPS Phenolic Foam Block

**Product**

- TPS Phenolic Foam Block is a closed cell, fire and moisture resistant rigid thermal insulation manufactured in accordance with ASTM C1126 type III.
- Produced in large block form by Fujian Tenlead Advanced Material Co., LTD and imported exclusively by Thermal Pipe Shields.
- Distributed nationwide to fabrication shops to be used as the raw material to CNC cut 36” long sections of pipe insulation, curved radius segments, elbows or flat boards.
- Low thermal conductivity provides superior insulating performance for mechanical systems operating between -290°F and 257°F.

**Features**

- TPS Phenolic Foam Block is a cost-effective choice with enhanced fire resistance compared to other foam insulations such as XPS, EPS, PIR, PUF and improved thermal protection compared to glass fiber, elastomeric foam and cellular glass.
- Bun dimensions: 37.5” x 33.5” x 80”
- 36 buns per 40’ HC shipping container
- 3 PCF nominal density
- High compressive strength: 45+ psi
- Meets 25/50 flame spread and smoke developed in accordance with ASTM E84
- Low thermal conductivity
- Fabricates easily into a variety of shapes with standard CNC fabrication equipment.

**Benefits**

- High compressive strength thermoset phenolic foam does not crush easily compared to low compressive strength products such as mineral fiber pipe insulations.
- Phenolic foam is less dusty, light weight and fabricates easily on the jobsite.
- When properly designed and installed with adequate thickness, phenolic foam wrapped with a vapor retarder can prevent exterior vapor flow and the resultant moisture condensation on cold service piping.

**Applications**

- Phenolic Foam pipe cover is commonly used on domestic hot and cold water, steam condensate, chilled water and glycol refrigeration piping systems in commercial buildings, food & beverage processing, and pharmaceutical facilities.
- Provides excellent thermal resistance compared to other types of commonly used pipe insulations such as glass fiber, elastomeric foam and cellular glass foam.
- TPS Phenolic Foam provides over 90% more insulating power per inch of thickness compared to cellular glass. This allows for a thinner footprint and lower installed cost.
- Phenolic foam has lower vapor permeability and >50 times higher compressive strength than glass fiber to prevent in situ damage of the factory laminated vapor retarder.
- The rigidity, compressive strength and closed cell nature of phenolic foam work together to keep the insulation dry.

**Safety**

- TPS Phenolic Foam does not contain asbestos
- CFC/HCF free with zero ozone depletion potential (ODP)
- Thermoset plastic is resistant to many common chemicals
- Non-fibrous or itchy, odorless and low dust
- Insulating hot piping will prevent personnel burn injuries in buildings and industrial plants.
- High compressive strength meets the requirements of MSS SP-58 to pass through structural hanger without a separate high strength insert. (Curved metal shield required)
- Supports the secondary vapor retarder and cladding to provide continuous protection against moisture infiltration, loss of insulation performance and the resultant potential for corrosion under insulation (CUI).
# Specification Compliance

<table>
<thead>
<tr>
<th>ASTM Standard</th>
<th>Property Description</th>
<th>Grade I</th>
<th>TPS Phenolic Foam Block</th>
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</thead>
<tbody>
<tr>
<td>ASTM C1126, Type III (foam core)</td>
<td></td>
<td>Grade I</td>
<td>TPS Phenolic Foam Block</td>
</tr>
<tr>
<td>ASTM D1622 - Density (min)</td>
<td>2 pcf (32 kg/m³)</td>
<td>2.8 pcf (45 kg/m³)</td>
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<tr>
<td>ASTM D1621 - Compressive Strength</td>
<td>18 psi (124 kPa)</td>
<td>&gt; 45 psi (310 kPa)</td>
<td></td>
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<tr>
<td>@ 10% deformation (min)</td>
<td>(32 kg/m³)</td>
<td>(45 kg/m³)</td>
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<tr>
<td>ASTM C518- Thermal Conductivity (max)</td>
<td>0.18 (0.026)</td>
<td>0.152 (0.022)</td>
<td></td>
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<tr>
<td>BTU·in/h·ft²·°F (W/m·K) @ 75°F (24°C)</td>
<td>(0.026)</td>
<td>(0.022)</td>
<td></td>
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<tr>
<td>ASTM D6226- Closed Cell Content</td>
<td>≥ 90%</td>
<td>≥ 90%</td>
<td></td>
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<tr>
<td>ASTM C209 - Water Absorption (max)</td>
<td>3.0%</td>
<td>&lt; 3.0%</td>
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<tr>
<td>ASTM E96 - Water Vapor Permeance</td>
<td>5.0</td>
<td>&lt; 5.0</td>
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<tr>
<td>(max perm-inch)</td>
<td></td>
<td></td>
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<tr>
<td>ASTM D2126 - Dimensional Stability</td>
<td>2.0</td>
<td>&lt; 2.0</td>
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<tr>
<td>(max % linear change)</td>
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<tr>
<td>ASTM E84 - Flame Spread</td>
<td>25/50</td>
<td>&lt; 25/50</td>
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<tr>
<td>/ Smoke Developed (max)</td>
<td></td>
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## Thermal Resistance (R-Value per inch of thickness)

- **PHENOLIC FOAM**: 7
- **GLASS FIBER**: 5
- **ELASTOMERIC**: 4
- **CELLULAR GLASS**: 3

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*Thermal Pipe Shields +1.833.4CALSIL (422-5745)  Data Sheet: Phenolic Block 7-20 (Replaces 4-20)*