

## Product

- Therma-Phen™ 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.

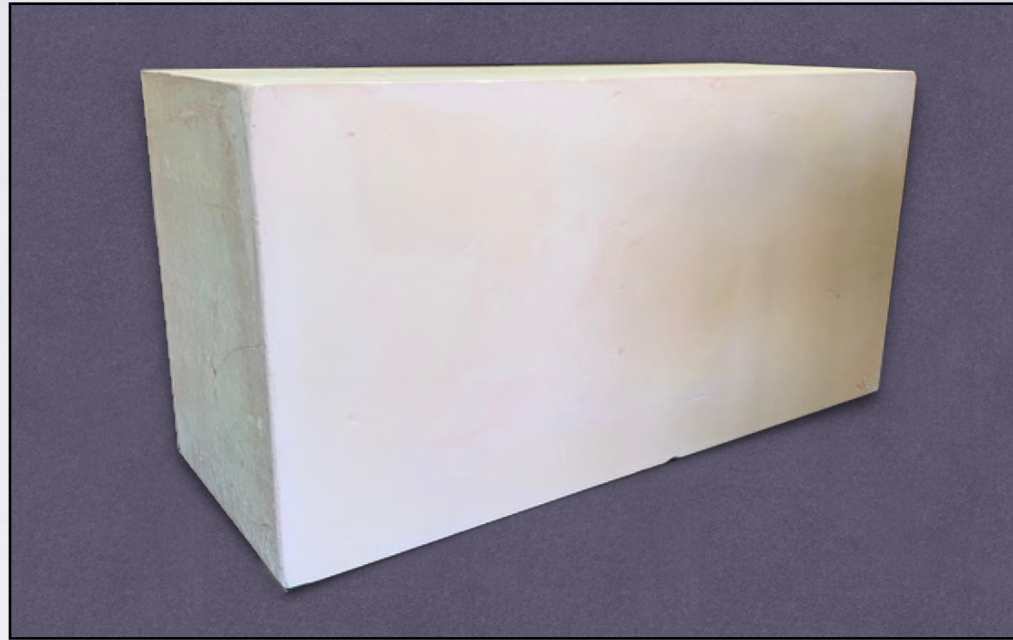
## Features

- Therma-Phen® 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
- 2.5 PCF nominal density
- High compressive strength: 32+ psi
- Meets 25/50 flame spread and smoke developed in accordance with ASTM E84 (up to 2" wall thickness).
- 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.
- Therma-Phen® 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.

# Therma-Phen® Phenolic Foam Block



## Applications

- Therma-Phen® 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.
- Therma-Phen® provides over 90% more insulating power per inch of thickness compared to cellular glass. This allows for a thinner footprint and lower installed cost.
- Therma-Phen® 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

- Therma-Phen® does not contain asbestos
- CFC/HCFC 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

ASTM C1126, Type III (foam core)	Grade I	Therma-Phen® Foam Block
ASTM D1622 - Density (min)	2 pcf (32 kg/m <sup>3</sup> )	2.5 pcf (41 kg/m <sup>3</sup> )
ASTM D1621 - Compressive Strength @ 10% deformation (min)	18 psi (124 kPa)	> 32 psi (226 kPa)
ASTM C518- Thermal Conductivity (max) BTU · in/h · ft <sup>2</sup> · °F (W/m · K) @ 75°F (24°C)	0.18 (0.026)	0.166 (0.024)
ASTM D6226- Closed Cell Content	≥ 90%	≥ 90%
ASTM C209 - Water Absorption (max)	3.0%	< 3.0%
ASTM E96 - Water Vapor Permeance (max perm-inch)	5.0	< 5.0
ASTM D2126 - Dimensional Stability (max % linear change)	2.0	< 2.0
ASTM E84 - Flame Spread / Smoke Developed (max)	25/50	< 25/50

## Thermal Resistance (R-Value per inch of thickness)

