



Specialty Products  
and Insulation

# Extruded Polystyrene Insulation

(Commonly referred to as XPS, formerly Styrofoam)

## Description

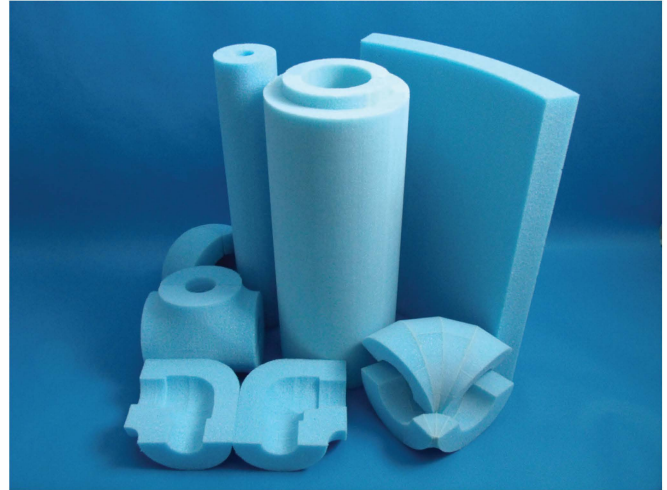
Extruded Polystyrene insulation is rigid closed cell thermoplastic foam that combines light weight and strength with good thermal insulating properties. This material is available in sectional pipe covering, complete with a vapor barrier jacket as well as sections for fittings, curved and board segments for equipment and tank applications.

## Uses

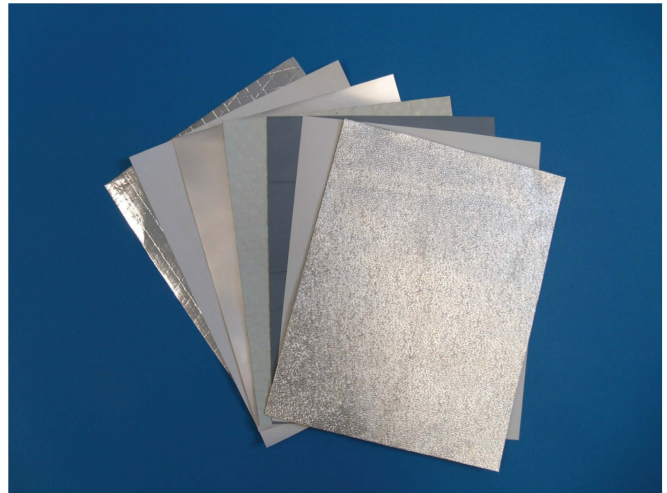
For use on piping, fittings, equipment and tanks operating in the temperature range of  $-297^{\circ}\text{F}$  ( $-183^{\circ}\text{C}$ ) to  $165^{\circ}\text{F}$  ( $74^{\circ}\text{C}$ ). For applications above  $150^{\circ}\text{F}$  or below  $-140^{\circ}\text{F}$ , contact your local SPI Fabrication center for system recommendations. Typical applications include: Commercial and Industrial pipe and fitting insulation on chilled water to minimize heat gain and prevent surface condensation. Other applications include: Ammonia refrigeration lines and equipment, freezer rooms, cold storage systems, Pharmaceutical plants and cryogenic systems.

## Advantages

- Good thermal efficiency.
- Excellent water resistance (to both liquid and vapor).
- Closed cell, non-fibrous, does not wick water.
- Good dimensional stability.
- High compressive strength.
- Non-dusting and non-irritating.
- Not a known food source for mold or mildew.



ShipLap, Spline and Tongue & Groove joint details are available for an additional charge.



A variety of jacketing materials are available to meet service & specification requirements.

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Performance and compliance use data is based on fabrication of **Trymer®**\* XPS PIB as manufactured by ITW Insulation Systems.

\*Trademark of ITW (**Trymer®**).

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## Performance Compliance Data

ASTM C585-90 (2004) Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).

ASTM C450 Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping and Vessel Lagging.

XPS PIB complies with ASTM C578, Type XIII.

TABLE 1

Physical Properties of XPS PIB	
Property <sup>(1)</sup> and Test Method <sup>(2)</sup>	Value
Density, ASTM D1622, lb/ft <sup>3</sup> (kg/m <sup>3</sup> )	1.6 (26)
Compressive Strength <sup>(3)</sup> , ASTM D1621, lb/in <sup>2</sup> (kPa)	20 (138)
k-factor, ASTM C518, Btu•in/hr•ft <sup>2</sup> °F (W/m•°C), Aged 180 days @ 75°F (24°C)	0.259 (0.037)
Water Absorption, % by volume ASTM C272 ASTM D2842	0.5 1.0
Water Vapor Permeability, ASTM E96, perm-inch (ng/Pa•s•m)	1.5 (2.2)
Dimensional Stability <sup>(4)</sup> , ASTM D2126, % volume change At 158°F (70°C)/97% R.H., 7 days	1.0
Service Temperature, °F (°C)	-297 to +165 (-183 to +74)
Surface Burning Characteristics <sup>(5)</sup> , ASTM E84 Flame Spread/Smoke Developed (FS/SD)	5/165 up to 4" (10 cm) thickness
Coefficient of Linear Thermal Expansion, ASTM D696 in/in•°F cm/m•°C	35 x 10 <sup>-6</sup> 19.4 x 10 <sup>-6</sup>
Color	Blue

(Technical data provided by ITW Insulation Systems. Other manufacturer products available on request.)

1. All properties are measured at 74°F (23°C), unless otherwise indicated.
2. Unless otherwise indicated, data shown are typical values obtained from representative production samples. This Data may be used as a guide for design purposes, but should not be construed as specifications.
3. This numerical flame spread data is not intended to reflect hazards presented by this or any other material under actual fire conditions.



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