

XPS

Extruded Polystyrene Pipe Insulation

XPS
pipe insulation

XPS extruded polystyrene pipe insulation is a rigid thermoplastic foam manufactured by a proprietary extrusion process that forms a uniform, void-free, closed cell structure. This structure, along with the naturally water-repellent nature of the polystyrene resin, gives XPS insulation products high compressive strength, low friability and excellent resistance to water vapor and water absorption from freezethaw cycling.

XPS pipe insulation is non-dusting and non-irritating and is not a known food source for mold and mildew.

Applications

XPS pipe insulation is used extensively in industrial and commercial piping applications. With a service temperature range of -297°F to 165°F (-183°C to 74°C), XPS pipe insulation is a preferred material for low-temperature systems, both for minimizing heat gain and preventing surface condensation. XPS pipe insulation maintains its key insulating properties in low-temperature applications and other environments with high humidity and high-moisture conditions.

Typical applications for XPS pipe insulation include:

- ammonia refrigeration lines
- freezer rooms
- chilled water piping
- transport pipelines
- cold storage systems
- refrigeration equipment
- pharmaceutical plants
- cryogenic systems

TABLE 1

Physical Properties of XPS Extruded Polystyrene Pipe Insulation	
Property ⁽¹⁾ and Test Method ⁽²⁾	Value
Density, ASTM D1622, lb/ft ³ (kg/m ³)	1.6 (26)
Compressive Strength ⁽³⁾ , ASTM D1621, lb/in ² (kPa)	20 (138)
k-factor, ASTM C518, Btu•in/hr•ft ² •°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 ⁽³⁾ , 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 ⁽³⁾ , 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 ⁻⁶ 19.4 x 10 ⁻⁴
Color	Blue

- (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. For property ranges and specifications, consult your ITW Insulation Systems representative.
 (3) Average value through foam cross section.

ITW can provide general guidelines and recommendations for XPS pipe insulation. For additional information, visit www.itwinsulation.com, call **1-800-231-1024** or contact your local ITW Insulation Systems representative.

SIZE

XPS pipe insulation is extruded into billets.

Height and width:

- 7" x 14" (18 cm x 36 cm)
- 8" x 16" (20 cm x 41 cm)
- 10" x 20" (25 cm x 51 cm)

Length:

9' (2.75 m)

Custom lengths are also available. Contact your local ITW representative for details.

PHYSICAL PROPERTIES

XPS pipe insulation exhibits the properties and characteristics indicated in Table 1 when tested as represented.

Consultation with local code officials and design engineers/specifiers is recommended before application.

As with all cellular polymers, XPS pipe insulation will degrade upon prolonged exposure to sunlight. A covering to block ultraviolet radiation must be used to prevent degradation. Other coverings to protect the insulation from the elements may be required.

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ENVIRONMENTAL DATA

XPS pipe insulation is manufactured with HCFC blowing agents, which have 94 percent less ozone depletion potential than standard CFC blowing agents. XPS extruded polystyrene foam is recyclable and can be reused in many applications.

Installation

XPS pipe insulation is specifically formulated for easy fabrication into many shapes, such as pipe coverings, valve and fitting covers, and others to meet specific design needs. Because of the critical design aspects in many applications, ITW recommends contacting qualified designers for system design. For more specific instructions, contact a local ITW representative or access the literature library at www.itwinsulation.com.

Availability

XPS pipe insulation is distributed through ITW's extensive Authorized Fabricator Network. For more information, call: **1-800-231-1024**.

Technical Services

ITW can provide technical information to help address questions when using XPS pipe insulation. Technical personnel are available at: **1-800-231-1024**.

- **For Technical Information: 1-800-231-1024**
- **For Sales Information: 1-800-231-1024**
- ITW Insulation Systems
- 1370 East 40th Street, Building 7, Suite 1, Houston, TX 77022-4104
- www.itwinsulation.com

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call ITW at 1-800-231-1024 or contact your local building inspector.