

# TRYMER™ 2000 XP

## Polyisocyanurate Insulation

TRYMER™ 2000 XP insulation is polyurethane modified polyisocyanurate cellular plastic. The rigid insulation is supplied in the form of bunstock for fabrication into sheets, pipe shells, tank and vessel coverings, and other shapes for a variety of thermal insulation applications.

TRYMER 2000 XP insulation features improved dimensional stability over a wider range of temperatures than standard polyurethane insulation.

TRYMER insulation is not a known nutrient source for mold and mildew.

### Applications

TRYMER 2000 XP insulation is suitable for applications that require a Flame Spread Index of 25 or less and a Smoke Developed Index of 450 or less when tested as per ASTM E84. These are typical requirements for pipe insulation located in non-plenum locations so TRYMER 2000 XP Insulation is particularly ideal for use as pipe insulation in the non-plenum areas of commercial buildings. *For pipe insulation located inside plenums of commercial buildings, ITW recommends the use of our Trymer Supercel Phenolic Insulation.* TRYMER 2000 XP can be used within the service temperature range of -297°F to 300°F (-183°C to 149°C). Typical applications for TRYMER 2000 XP insulation include:

- industrial pipe insulation, including elbows and fittings
- commercial chilled water insulation
- tank and vessel insulation
- core material for architectural and structural panels
- insulation for shipping containers, trucks or railcars
- core material for factory built panellized constructions
- flat or tapered board stock for roof insulation

ITW can provide general guidelines and recommendations for TRYMER™2000 XP insulation. For additional information, visit [www.itwinsulation.com](http://www.itwinsulation.com), call 1-800-231-1024 or contact your regional ITW representative.

### SIZE

|         |               |
|---------|---------------|
| Height: | 24" (61 cm)   |
| Width:  | 48" (122 cm)  |
| Length: | 36" (91 cm)   |
|         | 96" (244 cm)  |
|         | 108" (274 cm) |

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

### PHYSICAL PROPERTIES

TRYMER 2000 XP 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, TRYMER 2000 XP insulation will degrade upon prolonged exposure to sunlight. A covering to block ultraviolet radiation must be used to help prevent degradation. Other coverings to protect the insulation from the elements may be required.

### ENVIRONMENTAL DATA

TRYMER 2000 XP insulation is specifically formulated to provide excellent thermal insulation properties without the use of chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) blowing agents. In compliance with the Montreal Protocol and the Clean Air Act, TRYMER 2000 XP insulation is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

### SAFETY

#### CONSIDERATIONS

TRYMER 2000 XP insulation requires care in handling. All persons working with this material must know and follow the proper handling procedures. The current Material Safety Data Sheet (MSDS) and General Handling Recommendations for TRYMER contain information on the safe handling, storage and use of this material. For copies of these documents, visit the literature library at [www.itwinsulation.com](http://www.itwinsulation.com), call 1-800-231-1024 or contact your regional ITW representative.

#### Installation

TRYMER 2000 XP 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 technical design aspects in many applications, ITW recommends contacting qualified designers to specify the total system. For more specific instructions, contact a regional ITW representative or access the literature library at [www.itwinsulation.com](http://www.itwinsulation.com).

#### Availability

TRYMER 2000 XP insulation is distributed through ITW's extensive Authorized Fabricator Network. For more information, call: 1-800-231-1024.

# Product Information

TRYMER™ 2000 XP complies with ASTM C591, Grade 2, Type IV

| Property and Test Method  | Value         | Property <sup>1</sup> and Test Method <sup>2</sup>                       | Value                          |
|---|---------------|--|--------------------------------|
| Density, ASTM D1622, lb/ft <sup>3</sup> (kg/m <sup>3</sup> )  | 2.05 (32.8)   | Closed Cell Content, ASTM D6226, % min.                                  | 90                             |
| Compressive Strength, ASTM D1621, lb/in <sup>2</sup> (kPa),<br>Parallel to rise   | 25 (172)      | Water Absorption, ASTM C272, 24-hour immersion,<br>% by volume           | <0.7                           |
| Perpendicular to rise - width   | 24 (165)      | Water Vapor Permeability, ASTM E96<br>perm-inch (ng/Pa*s*m)              | 4 (5.8)                        |
| Perpendicular to rise - length  | 30 (207)      | Dimensional Stability <sup>5</sup> , ASTM D2126                          |                                |
| Compressive Modulus, ASTM D1621, lb/in <sup>2</sup> (kPa),<br>Parallel to rise  | 650 (4,485)   | At -40° F (-40°C), 7 days  |                                |
| Perpendicular to rise - width   | 475 (3,278)   | Length, % change   | 0.4                            |
| Perpendicular to rise - length  | 600 (4,414)   | Volume, % change   | 0.6                            |
| Shear Strength, ASTM C273, lb/in <sup>2</sup> (kPa),<br>Parallel and perpendicular, avg   | 15 (104)      | At -10° F (-23°C), 7 days  |                                |
| Shear Modulus, ASTM C273, lb/in <sup>2</sup> (kPa),<br>Parallel and perpendicular, avg  | 250 (1,725)   | Length, % change   | 0.2                            |
| Tensile Strength, ASTM D1623, lb/in <sup>2</sup> (kPa),<br>Parallel to rise - thickness   | 20 (138)      | Volume, % change   | 0.2                            |
| Flexural Modulus, ASTM C203, lb/in <sup>2</sup> (kPa),<br>Parallel to rise  | 720 (4,968)   | At 158° F (70°C), 7 days   |                                |
| Flexural Strength, ASTM C203, lb/in <sup>2</sup> (kPa),<br>Parallel to rise   | 33 (228)      | Length, % change   | 1.5                            |
| k-Factor for comparison and product qualification <sup>3</sup> ,<br>ASTM C518, Btu-in/hr-ft <sup>2</sup> ·°F (W/m <sup>2</sup> ·°C) @ 75°F (24°C)         | 0.168 (0.024) | Volume, % change   | 3.0                            |
| R-Value per inch for comparison and product<br>qualification <sup>3</sup> , ASTM C518, hr-ft <sup>2</sup> ·°F/Btu (m <sup>2</sup> ·°C/W)<br>@ 75°F (24°C) | 6.0 (1.06)    | At 158° F (70°C), 97% R.H. 7 days  |                                |
| k-Factor for thickness calculations <sup>4</sup> , ASTM C518,<br>Btu-in/hr-ft <sup>2</sup> ·°F (W/m <sup>2</sup> ·°C), Aged 180 days @ 75°F (24°C)        | 0.19 (0.027)  | Length, % change   | 1.6                            |
| R-Value per inch for thickness calculations <sup>4</sup> , ASTM C518,<br>hr-ft <sup>2</sup> ·°F/Btu (m <sup>2</sup> ·°C/W) @ 75°F (24°C)                  | 5.3 (0.93)    | Volume, % change   | 3.4                            |
|   |               | At 300° F (149°C), 7 days  |                                |
|   |               | Length, % change   | 2.7                            |
|   |               | Volume, % change   | 4.5                            |
|   |               | Service Temperature <sup>6</sup> , °F (°C)                               | -297 to +300<br>(-183 to +149) |
|   |               | Surface Burning Characteristics <sup>7</sup> , ASTM E84,<br>Flame Spread | ≤25                            |
|   |               | Smoke Developed  | ≤450                           |
|   |               | Color  | Tan                            |

- (1) All properties are measured at 74° (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 representative.
- (3) Trymer 2000 XP has third party test results showing a 180 day aged k-Factor of 0.168 Btu-in/hr-ft<sup>2</sup>·°F at 75°F mean temperature. This value demonstrates the excellent performance of the product and can be used for comparison to other materials and to qualify Trymer 2000 XP to specification requirements.
- (4) Thermal conductivity test results include no safety factor and are obtained in pristine lab conditions on samples with no joints and that have not been subjected to the vagaries of installation. For Trymer 2000XP, ITW recommends that a more conservative 180 days aged k-Factor curve represented by a value of 0.19 Btu-in/hr-ft<sup>2</sup>·°F at 75°F mean temperature be used for all system design and insulation thickness calculation purposes.
- (5) Frequent and severe thermal cycling can produce dimensional changes significantly greater than those stated here. Special design consideration must be made in systems that cycle frequently.
- (6) Above 300°F, discoloration and charring will occur, resulting in an increased k-factor in the discolored area.
- (7) This numerical flame spread data is not intended to reflect hazards presented by this or any other material under actual fire conditions.

- **For Technical Information: 1-800-231-1024**
- **For Sales Information: 1-800-231-1024**
- ITW Insulation Systems
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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.

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