

## DESCRIPTION

TRYMER® 2000XP insulation is a closed-cell insulation that features improved dimensional stability over a wider range of temperatures than standard polyurethane insulation. TRYMER 2000XP insulation is polyurethane modified polyisocyanurate (PIR) 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 insulation is not a known nutrient source for mold and mildew..

## APPLICATIONS

TRYMER 2000XP 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 2000XP Insulation is particularly ideal for use as pipe insulation in the non-plenum areas of commercial buildings. For pipe insulation up to 1.5" located inside plenums of commercial buildings, JM recommends the use of our TRYMER 25-50 PIR Insulation. TRYMER 2000XP can be used within the service temperature range\* of -297°F to 300°F (-183°C to 149°C). Typical applications for TRYMER 2000XP insulation include:

- Industrial pipe insulation, including elbows and fittings
- Core material for architectural and structural panels
- Core material for factory built panelized constructions
- Insulation for shipping containers, trucks or railcars
- Commercial chilled water insulation
- Tank and vessel insulation
- Flat or tapered board stock for roof insulation

## SIZE

Height: 24" (61 cm)

Width: 48" (122 cm)

Length: 36" (91cm)

96" (244 cm)

108" (274 cm)

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

## AVAILABILITY

TRYMER 2000XP insulation is distributed through JM's extensive Authorized Fabricator Network.



## PHYSICAL/CHEMICAL PROPERTIES

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

## ENVIRONMENTAL DATA

TRYMER 2000XP 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 2000XP insulation is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

## SAFETY CONSIDERATIONS

TRYMER 2000XP insulation requires care in handling. All persons working with this material must know and follow the proper handling procedures. The current Safety Data Sheet (SDS) and General Handling Recommendations for TRYMER contain information on the safe handling, storage and use of this material, and can be found at [www.JM.com](http://www.JM.com).

## INSTALLATION

TRYMER 2000XP 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, JM recommends contacting qualified designers to specify the total system.

**TRYMER® 2000XP**  
POLYISOCYANURATE FOAM INSULATION

**PHYSICAL PROPERTIES OF TRYMER 2000XP (1,2)**

ASTM C591, Grade 2, Type IV	Complies		
Density, ASTM D1622	2.05 lb/ft <sup>3</sup> (32.8 kg/m <sup>3</sup> )		
Compressive Strength, ASTM D1621	25 lb/in <sup>2</sup> (172 kPa) parallel to rise 24 lb/in <sup>2</sup> (165 kPa) perpendicular to rise - width 30 lb/in <sup>2</sup> (207 kPa) perpendicular to rise - length		
Compressive Modulus, ASTM D1621	650 lb/in <sup>2</sup> (4481 kPa) parallel to rise 475 lb/in <sup>2</sup> (3275 kPa) perpendicular to rise - width 600 lb/in <sup>2</sup> (4137 kPa) perpendicular to rise - length		
Shear Strength, ASTM C273	15 lb/in <sup>2</sup> (104 kPa) parallel and perpendicular avg.		
Shear Modulus, ASTM C273	250 lb/in <sup>2</sup> (1725 kPa) parallel and perpendicular avg.		
Tensile Strength, ASTM D1623	20 lb/in <sup>2</sup> (138 kPa) parallel to rise - thickness		
Flexural Strength, ASTM C203	33 lb/in <sup>2</sup> (228 kPa) parallel to rise		
Flexural Modulus, ASTM C203	720 lb/in <sup>2</sup> (4968 kPa) parallel to rise		
Closed cell Content, ASTM D2845	90%		
k-Factor, ASTM C518, @75°F (24°C) mean temp For comparison and product qualification <sup>3</sup>	0.168 Btu•in/hr•ft <sup>2</sup> •°F 0.024 W/m <sup>2</sup> •°C		
R-value per Inch, ASTM C578, Aged 180 Days, @75°F (24°C) mean temp For comparison and product qualification <sup>3</sup>	6.0 Btu•in/hr•ft <sup>2</sup> •°F 1.06 W/m <sup>2</sup> •°C		
k-Factor, ASTM C518, @75°F (24°C) mean temp For thickness calculations <sup>4</sup>	0.19 Btu•in/hr•ft <sup>2</sup> •°F 0.027 W/m <sup>2</sup> •°C		
R-value per Inch, ASTM C578, Aged 180 Days, @75°F (24°C) mean temp For thickness calculations <sup>4</sup>	5.3 Btu•in/hr•ft <sup>2</sup> •°F 0.93 W/m <sup>2</sup> •°C		
Water Absorption, ASTM C272	<0.7% by vol. after 24-hour immersion		
Water Vapor Permeability, ASTM E96	4 perms/inch (5.8 ng/Pa•s•m)		
Dimensional Stability <sup>(5)</sup> , ASTM D2126 (%Change)		Length	Volume
	At -40°F (-40°C), 7 days	0.4%	0.6%
	At -10°F (-23°C), 7 days	0.2%	0.2%
	At 158°F (70°C), 7 days	1.5%	3.0%
	At 158°F (70°C), 97% R.H. 7 days	1.6%	3.4%
Service Temperature <sup>(6,7)</sup>	-297°F to 300°F (-183°F to 149°F)		
	≤ 25 Flame Spread ≤ 250 Smoke Developed (up to 8" thickness)		
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 JM representative.
- (3) TRYMER 2000XP 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, JM 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, 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) TRYMER PIR can be used at temperatures below -297°F but certain system design precautions may be necessary. Please consult JM for more information.
- (8) 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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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of the product listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you for current information.

**All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, which includes a Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions or for information on other Johns Manville thermal insulation and systems, visit [www.jm.com/terms-conditions](http://www.jm.com/terms-conditions) or call (800)654-3103.**