

## DESCRIPTION

Trymer® 1800 insulation is a polyurethane modified polyisocyanurate cellular material. 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 1800 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 1800 insulation is used extensively in industrial and commercial applications with moderate density/strength requirements, within the service temperature range\* of -297°F to +300°F (-183°C to +149°C). Typical applications for Trymer 1800 insulation include:

- Fabricated pipe insulation, including elbows and fittings
- Core material for factory built panelized constructions
- Insulation for containers, trucks or railcars
- Core material for architectural and structural panels
- Tank and vessel insulation

\*Trymer PIR can be used at temperatures below -297°F but certain system design precautions may be necessary. Please consult JM for more information.

## SIZE

Height: 24" (41 cm)  
Width: 48" (122 cm)  
Length: 36" (91 cm)  
96" (244 cm)

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

## ENVIRONMENTAL DATA

Trymer 1800 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 1800 insulation is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

## AVAILABILITY

Trymer 1800 insulation is distributed through JM's extensive Authorized Fabricator Network.



## PHYSICAL PROPERTIES

Trymer 1800 insulation exhibits the properties and characteristics indicated in Table 1 when tested as represented. Consultation with local building code officials, and design engineers/specifiers is recommended before application. Like all cellular plastics, this product will degrade upon prolonged exposure to sunlight. A covering to block ultraviolet radiation must be used to prevent this degradation.

## INSTALLATION

Trymer 1800 insulation is easy to fabricate into various shapes to meet specific design needs. However, because of the critical technical design aspects of many of its applications, JM recommends that qualified designers or consultants design the total system.

## SAFETY CONSIDERATIONS

Trymer 1800 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).

**PHYSICAL PROPERTIES OF TRYMER 1800** <sup>(1,2)</sup>

ASTM C591, Grade 2, Type I	Complies		
Density, ASTM D1622 <sup>3</sup>	1.8 lb/ft <sup>3</sup> (28.8 kg/m <sup>3</sup> )		
Compressive Strength, ASTM D1621	25 lb/in <sup>2</sup> (172 kPa) parallel to rise 21 lb/in <sup>2</sup> (144 kPa) perpendicular to rise - width 29 lb/in <sup>2</sup> (200 kPa) perpendicular to rise - length		
Compressive Modulus, ASTM D1621	600 lb/in <sup>2</sup> (4136 kPa) parallel to rise 450 lb/in <sup>2</sup> (3278 kPa) perpendicular to rise - width 600 lb/in <sup>2</sup> (4136 kPa) perpendicular to rise - length		
Shear Strength, ASTM C273	13 lb/in <sup>2</sup> (90 kPa) parallel and perpendicular avg.		
Shear Modulus, ASTM C273	200 lb/in <sup>2</sup> (1379 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	30 lb/in <sup>2</sup> (207 kPa) parallel to rise		
Flexural Modulus, ASTM C203	700 lb/in <sup>2</sup> (4826 kPa) parallel to rise		
Closed cell Content, ASTM D6226	95%		
k-Factor, ASTM C518, @75°F (24°C) mean temp Aged 180 Days <sup>4</sup>	0.19 Btu•in/hr•ft <sup>2</sup> •°F 0.027 W/m°C		
R-value per Inch, ASTM C518, @75°F (24°C) mean temp Aged 180 Days <sup>4</sup>	5.3 hr•ft <sup>2</sup> •°F/Btu 0.93 m <sup>2</sup> •°C/W		
Water Absorption, ASTM C272	<0.7% by vol. after 24-hour immersion		
Water Vapor Permeability, ASTM E96	4 perm-inches (5.8 ng/Pa•s•m)		
Dimensional Stability <sup>(5)</sup> , ASTM D2126 (%Change)		Length	Volume
	At -40°F (-40°C), 7 days	-0.5%	-1.0%
	At -10°F (-23°C), 7 days	0.2%	0.5%
	At 158°F (70°C), 7 days	1.5%	3.0%
	At 158°F (70°C), 97% R.H. 7 days	2.5%	3.5%
Service Temperature <sup>(6,7)</sup>	-297°F to 300°F (-183°C to 149°C)		
	Surface Burning Characteristics, ASTM E84 ≤ 25 Flame Spread ≤ 450 Smoke Developed (up to 6" thickness)		
Color	Light Gray		

(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) Average value through insulation cross section

(4) R means resistance to heat flow. The higher the R-value, the greater the insulating power.

(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) Trymer PIR can be used at temperatures below this but certain system design precautions may be necessary. Please consult JM Insulation Systems 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.**