

Technical Data Sheet

TRYMER® 4000 Polyisocyanurate

TRYMER® 4000 insulation is a polyurethane modified polyisocyanurate cellular material. The rigid insulation is supplied in the form of burlap for fabrication into sheets, pipe shells, tank and vessel coverings, and other shapes for a variety of thermal insulation applications. TRYMER 4000 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 4000 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 4000 insulation include:

- fabricated pipe insulation, including elbows and fittings
- core material for architectural and structural panels
- core material for factory built panelized constructions
- tank and vessel insulation
- pipe hangers, saddles and supports



Physical Properties

TRYMER 4000 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.

Environmental Data

TRYMER 4000 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 4000 insulation is manufactured with hydrocarbon blowing agents, which have no ozone depletion potential.

Size

Height: 16" (41 cm)
Width: 48" (122 cm)
Length: 36" (91 cm)
96" (244 cm)

Custom lengths are also available.

Safety Considerations

TRYMER 4000 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.itwinsulation.com.

Installation

TRYMER 4000 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, ITW recommends that qualified designers or consultants design the total system.

*TRYMER PIR can be used at temperatures below -297°F but certain system design precautions may be necessary. Please consult ITW Insulation Systems for more information

Availability

TRYMER 4000 insulation is distributed through ITWIS's extensive Authorized Fabricator Network.

TRYMER® 4000 complies with ASTM C591, Grade 2, Type V.

Property ¹ and Test Method ²	Value	Property ¹ and Test Method ²	Value
Density ³ , ASTM D1622, lb/ft ³ (kg/m ³)	4 (64.0)	Water Absorption, ASTM C272, 24-hour immersion, % by volume	<0.7
Compressive Strength, ASTM D1621, lb/in ² (kPa), Parallel to rise - thickness	95 (655)	Water Vapor Permeability, ASTM E96 perm-inch (ng/Pa•s•m)	2.9 (4.4)
Perpendicular to rise - width	80 (550)	Dimensional Stability ⁵ , ASTM D2126	
Perpendicular to rise - length	100 (690)	At -40° F (-40°C), 7 days	
Compressive Modulus, ASTM D1621, lb/in ² (kPa), Parallel to rise - thickness	2,100 (14,470)	Length, % change	-0.4
Perpendicular to rise - width	1,800 (12,400)	Volume, % change	-0.9
Perpendicular to rise - length	2,600 (17,900)	At -10° F (-23°C), 7 days	
Shear Strength, ASTM C273, lb/in ² (kPa), Parallel and perpendicular, avg	42 (290)	Length, % change	-1.6
Shear Modulus, ASTM C273, lb/in ² (kPa), Parallel and perpendicular, avg	650 (4,480)	Volume, % change	-2.0
Tensile Strength, ASTM D1623, lb/in ² (kPa), Parallel to rise - thickness	60 (413)	At 158° F (70°C), 7 days	
Flexural Strength, ASTM C203, lb/in ² (kPa), Parallel to rise	150 (1,030)	Length, % change	1.0
Flexural Modulus, ASTM C203, lb/in ² (kPa), Parallel to rise	3,850 (26,540)	Volume, % change	2.0
k-Factor, ASTM C518, Btu-in/hr-ft ² •°F (W/m ² •°C) Aged 180 days @ 75°F (24°C)	0.19 (0.027)	At 158° F (70°C), 97% R.H. 7 days	
R-Value ⁴ per inch, ASTM C518, hr-ft ² •°F/Btu Aged 180 days @ 75°F (24°C)	5.3 (0.93)	Length, % change	-1.5
Closed Cell Content, ASTM D6226, % min.	95	Volume, % change	-1.5
		At 300° F (149°C), 7 days	
		Length, % change	-1.3
		Volume, % change	-1.1
		Service Temperature ⁶⁺⁷ , °F (°C)	-297 to +300 (-183 to +149)
		Surface Burning Characteristics ⁸ , ASTM E84, 1" through 6" (2.5 cm through 15 cm)	up to 6" (15 cm) thickness ≤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) 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 ITW 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.

For where to buy and further technical information, contact us at **1-800-231-1024** or 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 SDS, call ITW at 1-800-231-1024 or contact your local building inspector.

ITW INSULATION SYSTEMS