

# TRYMER™ 4000 Polyisocyanurate Insulation

**TRYMER™**  
PIR insulation

TRYMER™ 4000 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™ 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 high 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:

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

ITW can provide general guidelines and recommendations for TRYMER™ 4000 insulation.

For additional information, visit [www.itwinsulation.com](http://www.itwinsulation.com), call 1-800-231-1024 or contact your local ITW representative.

## SIZE

|         |                             |
|---------|-----------------------------|
| Height: | 16" (41 cm)                 |
| Width:  | 48" (122 cm)                |
| Length: | 36" (91 cm)<br>96" (244 cm) |

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

## PHYSICAL PROPERTIES

TRYMER™ 4000 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™ 4000 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.

## 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.

## 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 Material Safety Data Sheet (MSDS) and General Handling Recommendations for TRYMER™ contains 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 local ITW representative.

## Installation

TRYMER™ 4000 insulation is easy to fabricate into various sizes and shapes 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 local ITW representative or access the literature library at [www.itwinsulation.com](http://www.itwinsulation.com).

## Availability

TRYMER™ 4000 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 TRYMER™ 4000 insulation. Technical personnel are available at: 1-800-231-1024

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# Product Information

TRYMER™ 4000 complies with ASTM C591, Grade 2, Type V

TABLE 1

| Physical Properties of TRYMER™ 4000 Polyisocyanurate Insulation                           |                |   |                                   |
|---|----------------|---|-----------------------------------|
| Property <sup>(1)</sup> and Test Method <sup>(2)</sup>                                    | Value          | Property <sup>(1)</sup> and Test Method <sup>(2)</sup>    | Value                             |
| Density <sup>(3)</sup> , ASTM D1622, lb/ft <sup>3</sup> (kg/m <sup>3</sup> )              | 4 (64)         | Water Absorption, ASTM C272, 24-hr immersion, % by volume | <0.7                              |
| Compressive Strength <sup>(3)</sup> , ASTM D1621, lb/in <sup>2</sup> (kPa)                |                | Water Vapor Permeability, ASTM E96, perm-inch (ng/Pa•s•m) | 2.9 (4.4)                         |
| Parallel to rise – thickness  | 95 (655)       | Dimensional Stability <sup>(5)</sup> , ASTM D2126         |                                   |
| Perpendicular to rise – width   | 80 (550)       | At -40°F (-40°C), 7 days                                  |                                   |
| Perpendicular to rise – length  | 100 (690)      | Length, % change  | -0.4                              |
| Compressive Modulus, ASTM D1621, lb/in <sup>2</sup> (kPa)                                 |                | Volume, % change  | -0.9                              |
| Parallel to rise – thickness  | 2,100 (14,470) | At -10°F (-23°C), 7 days                                  |                                   |
| Perpendicular to rise – width   | 1,800 (12,400) | Length, % change  | -1.6                              |
| Perpendicular to rise – length  | 2,600 (17,900) | Volume, % change  | -2.0                              |
| Shear Strength, ASTM C273, lb/in <sup>2</sup> (kPa)                                       |                | At 158°F (70°C), 7 days                                   |                                   |
| Parallel and perpendicular, avg   | 42 (290)       | Length, % change  | 1.0                               |
| Shear Modulus, ASTM C273, lb/in <sup>2</sup> (kPa)  |                | Volume, % change  | 2.0                               |
| Parallel and perpendicular, avg   | 650 (4,480)    | At 158°F (70°C)/97% R.H., 7 days                          |                                   |
| Tensile Strength, ASTM D1623, lb/in <sup>2</sup> (kPa)                                    |                | Length, % change  | -1.5                              |
| Parallel to rise – thickness  | 60 (413)       | Volume, % change  | -1.5                              |
| Flexural Strength, ASTM C203, lb/in <sup>2</sup> (kPa)                                    |                | At 300°F (149°C), 7 days                                  |                                   |
| Parallel to rise  | 150 (1,030)    | Length, % change  | -1.3                              |
| Flexural Modulus, ASTM C203, lb/in <sup>2</sup> (kPa)                                     |                | Volume, % change  | -1.1                              |
| Parallel to rise  | 3,850 (26,540) | Service Temperature <sup>(6)</sup> , °F (°C)              | -297 to +300 (-183 to +149)       |
| k-factor, ASTM C518, Btu•in/hr•ft <sup>2</sup> •°F (W/m•°C)                               |                | Surface Burning Characteristics <sup>(7)</sup> , ASTM E84 | 25/450 up to 6" (15 cm) thickness |
| Aged 180 days @ 75°F (24°C)   | 0.19 (0.027)   | Flame Spread/Smoke Developed (FS/SD)                      |                                   |
| R-Value <sup>(4)</sup> /in., ASTM C518, hr•ft <sup>2</sup> •°F/Btu (m <sup>2</sup> •°C/W) |                | Color   | Tan                               |
| Aged 180 days @ 75°F (24°C)   | 5.3 (0.93)     |   |                                   |
| Closed Cell Content, ASTM D2856, %, min.  | 95             |   |                                   |

- (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 (149°C), 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
- 1370 East 40<sup>th</sup> Street, Building 7, Suite 1, Houston, TX 77022-4104
- [www.itwinsulation.com](http://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.

Building and/or construction practices unrelated to insulation could greatly affect moisture and the potential for mold formation. No material supplier including ITW can give assurance that mold will not develop in any specific system.

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