

FAQ for ITW SALE OF PHENOLIC INSULATION

GENERAL QUESTIONS

QUESTION	ANSWER
Who can I contact for additional information about Trymer Green Phenolic Insulation?	Contact ITW Insulation at (800)231-1024 or (713)691-7002 or see our website at www.itwinsulation.com
What is ITW Insulation Systems doing to insure as smooth a transition as possible from Trymer 2000XP to Trymer Green Phenolic Insulation for use as pipe insulation in commercial building air plenums?	ITW Insulation Systems is committing the full force of its sales and technical staff to making this transition from Trymer 2000XP PIR to Trymer Green Phenolic Insulation for use in commercial building 25/50 applications a success. This will include new literature, spec-calling, and technical support.
Who do we contact for sales questions related to Trymer Green Phenolic Insulation and this 25/50 transition?	For all questions related to Trymer PIR, Trymer Green Phenolic Insulation, or any ITW Insulation Systems product, contact ITW at (800)231-1024 or (713)691-7002 or visit our website at www.itwinsulation.com
What role will Resolco play now that ITW Insulation Systems is your sole source for Trymer Green Phenolic Insulation?	Resolco is manufacturing this product at their new Houston plant, ensuring the excellent performance and quality control, and will have commercial personnel helping drive demand through spec-calling. However, all sales, customer service, and technical support will now come from ITW Insulation Systems.
What is the price of Trymer Green Phenolic Insulation?	As with all products, the sales price of buns of Trymer Green Phenolic Insulation can fluctuate so the price cannot be listed in this document. However, you may obtain current pricing by contacting ITW at (800)231-1024 or (713)691-7002. Pricing of fabricated pipe shells and other articles are set by fabricators who should be contacted regarding questions about the pricing of fabricated pieces.

TRYMER GREEN PHENOLIC INSULATION FABRICATION QUESTIONS

How do fabricators order Trymer Green Phenolic Insulation?	As of 1/1/2010, all orders for Trymer Green Phenolic Insulation will be placed through ITW Insulation Systems. Contact your normal ITW customer service rep for assistance or call (800)231-1024.
Where is Trymer Green Phenolic Insulation manufactured?	Trymer Green Phenolic Insulation is manufactured by Resolco in their brand new facility in Houston, TX. Resolco's experience and quality control ensure the performance of the Trymer Green Phenolic Insulation.

<p>In what form is Trymer Green Phenolic Insulation manufactured and sold?</p>	<p>The standard 2.5 lb/ft³ Trymer Green Phenolic Insulation is produced and sold in bun form. The bun dimensions are nominally 36” wide, 32” tall, and 98.5” long. Pipe shells should be cut so that the longitudinal direction is aligned with the 36” width of the Trymer Green Phenolic Insulation bun.</p>
<p>How does Trymer Green Phenolic Insulation fit into ITW’s Fabricator loyalty agreement?</p>	<p>Beginning on January 1, 2010, your purchases of Trymer Green Phenolic Insulation will become eligible for all the benefits offered under the ITW loyalty program and your loyalty to this phenolic product will become a requirement for you to qualify for these loyalty benefits.</p>
<p>Will ITW ship mixed loads of Trymer PIR and Trymer Green Phenolic Insulation?</p>	<p>Yes. Consult ITW at (800)231-1024 or (713)691-7002 for the details on this.</p>
<p>How is Trymer Green Phenolic Insulation fabricated?</p>	<p>Trymer Green Phenolic Insulation comes in bun form similar to Trymer PIR but with slightly different dimensions (36” wide x 32” tall x 98.5” long). The cutting direction is also different with Trymer Green Phenolic Insulation being cut so that pipe shells or segments should have their longitudinal axis oriented in the 36” width direction of the bun. Trymer Green Phenolic Insulation will fabricate in the same manner as Trymer PIR including the ability to fabricate complex shapes for valves, elbows, and fittings. Trymer Green Phenolic Insulation is made with pentane blowing agents and should be handled and disposed of in the same general manner as Trymer PIR. Consult the Trymer Green Phenolic Insulation MSDS and handling guide for more details.</p>

TRYMER GREEN PHENOLIC INSULATION CONTRACTOR QUESTIONS

<p>Will the availability of fabricated phenolic insulation change as a result of ITW selling Trymer Green Phenolic Insulation?</p>	<p>Yes. Trymer Green Phenolic Insulation will be more widely available than before since contractors should be able to obtain it from most ITW Insulation Systems fabricators/distributors in N. America.</p>
<p>How is Trymer Green Phenolic Insulation installed?</p>	<p>The installation of Trymer Green Phenolic Insulation is done in the same manner as Trymer PIR. The target application for Trymer Green Phenolic Insulation is for use on chilled water pipe located inside an air plenum in a commercial building. We have an installation guideline for this application available on our website, www.itwinsulation.com or by contacting ITW at (800)231-1024 or (713)691-7002.</p> <p>Some of the key factors to understand in this installation guide are the banding, vapor retarder, and joint sealant requirements.</p>

TRYMER GREEN PHENOLIC INSULATION SPECIFICATION QUESTIONS

<p>What is the ASTM E84 flame/smoke rating of Trymer Green Phenolic Insulation?</p>	<p>Trymer Green Phenolic Insulation has an ASTM E84 flame/smoke rating of no greater than 25/50 at thicknesses up to 3” thick. Given the superior thermal conductivity of phenolic foam insulation, a thickness of 3” is more than will ever be needed on pipe running inside an air plenum of a commercial building.</p>
<p>What are the major advantages of Trymer Green Phenolic Insulation for use as pipe insulation in commercial building air plenums?</p>	<p>The major advantages of Trymer Green Phenolic Insulation when used as pipe insulation in commercial building air plenums are the superior (low) thermal conductivity, closed-cell and water resistant nature, and very low flammability. These attributes combine to make it the lowest cost closed-cell insulation that can be used in this stringent application. The thermal conductivity is the lowest found on any insulation material used on chilled water pipe. This leads to reduced insulation thickness which further reduces costs and/or increases energy efficiency making it easier and cheaper to meet the increasingly stringent energy code requirements.</p>
<p>What are the major disadvantages of Trymer Green Phenolic Insulation for use as pipe insulation in commercial building air plenums?</p>	<p>There are no disadvantages to using Trymer Green Phenolic Insulation on chilled water pipe in commercial building air plenums. It is the most cost effective closed-cell insulation material that meets the stringent flammability requirements in this application. The closed-cell nature provides much better water resistance and long-term performance compared to glass fiber. Trymer Green Phenolic Insulation is less expensive than any other closed-cell insulation that meets the 25/50 flame/smoke performance usually required for insulation used inside an air plenum.</p>
<p>Is a vapor retarder required with Trymer Green Phenolic Insulation and, if so, what kind does ITW recommend?</p>	<p>In all applications where the pipe temperature is below ambient, a vapor retarder is needed on all insulation products. Whatever vapor retarder is used with Trymer PIR can be used with Trymer Green Phenolic Insulation and can be factory applied in the same manner using the same adhesive. ITW recommends the use of Saran 540CX or 560CX Vapor Retarder Film and Tape with both Trymer PIR and Trymer Green Phenolic Insulation.</p>
<p>What should be done for pipe supports when using Trymer Green Phenolic Insulation?</p>	<p>As with Trymer PIR, there are higher density versions of Trymer Green Phenolic Insulation available for use in pipe supports. These have greater compressive strength to support the pipe and contents while allowing the vapor retarder to remain continuous through the use of an external pipe support with a shield/saddle. Each density has a different color for easy identification and all densities meet the 25/50 flame/smoke rating. Contact ITW at (800)231-1024 or (713)691-7002 for help in calculating the grade of Trymer Green Phenolic Insulation needed for supports.</p>

<p>Isn't phenolic insulation corrosive to the metal pipe or equipment upon which it is installed?</p>	<p>We understand that there is some perception in the insulation industry that phenolic pipe insulation has led to widespread corrosion problems. Nothing could be further from the truth and ITW Insulation Systems will work diligently to dispel this myth. In reality, phenolic pipe insulation has NOT been found to be the cause of any pipe corrosion. ITW has a technical data sheet addressing this issue available on our website www.itwinsulation.com or by calling (800)231-1024.</p>
<p>Is painting of pipe necessary to prevent metal corrosion under the Trymer Green Phenolic Insulation?</p>	<p>Corrosion under insulation (CUI) is a very complex and controversial subject. For corrosion to occur, many things have to combine at the pipe surface including chloride ions, liquid water and a temperature usually above that of the chilled water range which is the target application for Trymer Green Phenolic Insulation. ITW does not make a blanket recommendation either for or against the painting of pipe as a means of preventing corrosion. Instead, the engineer/specifier designing the insulation system should make this decision based on their analysis of the system. It is ITW's belief that paint or corrosion inhibiting coatings are seldom needed on chilled water pipe regardless of the insulation used but this is a decision that the owner and/or system designer must make for each specific installation. A better approach to preventing corrosion is to minimize the entry of water into the insulation system by proper system design, most importantly a properly designed and installed continuous vapor retarder.</p>
<p>What blowing agent is used in Trymer Green Phenolic Insulation?</p>	<p>Just as with Trymer PIR, Trymer Green Phenolic Insulation is blown with a proprietary blend of pentane isomers. This blowing agent system offers zero ozone depleting potential (ODP) and very low global warming potential (GWP).</p>
<p>What is the ASTM type for phenolic pipe insulation?</p>	<p>Phenolic pipe insulation is covered under and can be specified as complying with ASTM C1126, Type III, Grade 1. For details on this ASTM standard, contact ITW at (800)231-1024 or (713)691-7002.</p>
<p>What is the thermal conductivity (k-Factor) of Trymer Green Phenolic Insulation and how does this compare to Trymer PIR?</p>	<p>For all insulation products there is actually a different k-factor at each mean temperature and the full thermal conductivity curve must be considered when calculating insulation thicknesses. For comparison purposes, the insulation industry has standardized on reporting the k-factor at 75°F. At 75°F the k-factors that ITW recommends for design purposes are 0.15 Btu-in/hr-ft²-°F for Trymer Green Phenolic Insulation and 0.19 for Trymer PIR. In reality, both materials have third party test reports showing k-factor performance about 10% better than the recommended values. The use of the recommended values is important for design purposes in order to take a more conservative approach as well as to account for such issues as insulation joints and cylindrical geometry in the actual installation.</p>

<p>What are the water absorption and water vapor permeability of Trymer Green Phenolic Insulation?</p>	<p>All properties will vary depending on the test method used to measure the property. ITW reports water absorption and water vapor permeability using the test methods stated in the ASTM phenolic standard C1126. Water absorption of Trymer Green Phenolic Insulation is $\leq 0.5\%$ by volume when testing using ASTM C209 (2 hr immersion). Water vapor permeability is less clear. We report the most commonly obtained value of ≤ 0.9 perm-inch but performance ranging from 0.113 to 4 perm-inches has been obtained under various conditions. However, it does not really matter where Trymer Green phenolic insulation lies in this range of permeability. Trymer Green Phenolic Insulation is a closed cell material with good water resistance but the water vapor permeability is not low enough to eliminate the need for a vapor retarder. As with all insulation products, a vapor retarder must be used with Trymer Green Phenolic Insulation for all applications where the pipe temperature is below ambient. ITW recommends the use of Saran 540CX or 560CX Vapor Retarder Film and Tape.</p>
<p>What is the allowable pipe temperature to which Trymer Green Phenolic Insulation can be exposed?</p>	<p>The Trymer Green Phenolic Insulation is typically used on commercial building chilled water in the range of 35 to 60°F. However, our published temperature limits for this material are -297°F to +250°F. The lower limit is really artificial. There is nothing that happens at this temperature which causes the product to cease working. -297°F is the boiling point of oxygen. Any applications below this temperature, regardless of insulation type, would have the potential to collect liquid oxygen at or near the pipe face. Liquid oxygen can be a very dangerous material so ITW publishes the artificial -297°F limit to provide an opportunity to warn the engineer/specifier of the concerns when operating below -297°F.</p>
<p>Can Trymer Green Phenolic Insulation be used on commercial building chilled water pipe in Canada?</p>	<p>Yes. The Canadian codes are different than those in the USA. In addition to having a 25/50 flame/smoke rating in the Canadian tunnel test CAN/ULC-S102, insulation used on pipe in a commercial building must also pass a room corner burn test ULC-S127. Trymer Green Phenolic Insulation meets both of these requirements.</p>

TRYMER 2000XP QUESTIONS

<p>Why is ITWIS dropping the 25/50 performance of Trymer 2000XP PIR at 1” thickness?</p>	<p>ITW believes that the Trymer Green Phenolic Insulation is the better pipe insulation option for the 25/50 flame/smoke performance required in air plenum application. Various factors contribute to this belief including:</p> <ul style="list-style-type: none"> • Trymer 2000XP PIR flammability performance at thicknesses greater than 1” • Flame/smoke performance of high density pipe supports made from Trymer PIR • Ongoing changes to energy codes requiring greater insulation thicknesses • Building and mechanical code changes to flammability performance and testing requirements <p>Our overall conclusion from this thorough analysis is that over time the ability to use Trymer 2000XP PIR in commercial building air plenums has decreased and will continue to diminish in the future. At some point, we fully expect that Trymer 2000XP PIR will not be a viable alternative for use in plenum applications. Plenums only represent about 20% of the chilled water pipe insulation volume in a typical commercial building so the use of Trymer 2000XP in non-plenum areas of commercial buildings will continue to be the optimum alternative.</p> <p>The introduction of Trymer Green Phenolic Insulation positions ITW, the fabricators/distributors, the contractors, and the owner/specifiers with a long-term viable solution for pipe insulation located inside plenums.</p>
<p>What is the ASTM E84 rating of Trymer PIR foam insulation?</p>	<p>All Trymer PIR foam products will meet an ASTM E84 flame/smoke rating of no greater than 25/450 at all thicknesses. This rating should be adequate under all USA building codes to permit the use of any Trymer PIR grade in non-plenum applications. In addition to the non-plenum commercial building applications, Trymer PIR will continue to meet the requirements for all industrial pipe insulation applications such as ammonia refrigeration, cryogenic, underground, rooftop, and general refrigeration applications.</p>
<p>Will there be any way to tell the difference between buns of T2000XP PIR made before and after 1/1/2010?</p>	<p>Each T2000XP PIR bun has a label with the lot number which will identify the date. The first letter of the lot number indicates the year of manufacture. The letter “W” indicates 2008, “X” indicates 2009, and “Y” indicates 2010. Aside from the lot number on these labels, there will be no color or other way of discerning T2000XP made before 1/1/2010 from that made after this date.</p>