

DyTherm™ Phenolic Insulation

2.5, 3.75, 5.0, and 7.5 lb/ft³ Densities

Phenolic Rigid Foam

DyTherm™ Phenolic insulation is based on proprietary technology. While reflecting the benefits of rigid polyisocyanurate insulation, DyTherm Phenolic insulation additionally has a superior resistance to burning and spread of flame, achieving 25/50 flame spread/smoke developed indices per ASTM E-84. DyTherm Phenolic insulation also has excellent thermal conductivity with an initial K-factor of 0.145 (Btu-in/hr-ft²·°F), equating to an R-value of over 6.9.

DyTherm Phenolic insulation is entirely CFC and HCFC-free with zero Ozone Depletion Potential (ODP). It has been developed to provide optimum performance with regards to insulation efficiency, fire resistance, low smoke emission, compressive strength, environment, health, safety and cost.

DyTherm Phenolic insulation is a lightweight rigid foam that is easy to transport, handle and install. Dyplast has gained a reputation for quality and consistency - - a reputation that has spread worldwide.

TEMPERATURE RANGE

DyTherm Phenolic insulation may be used for pipework and equipment operating within the process temperature range -292°F to +248°F (-180°C to +120°C).

THERMAL PERFORMANCE

DyTherm Phenolic insulation has an preliminary initial thermal conductivity of 0.145 Btu-in/hr-ft²·°F (0.021 W/m·K). This is an excellent thermal conductivity and much better than cellular glass. A low thermal conductivity allows specified thermal performance standards to be achieved with a minimal thickness of insulation. This is particularly significant where space saving is important. A thinner insulation can facilitate installation in confined spaces; and with lower weight pipe and equipment supports and hangars can be minimized. Furthermore, it can often result in a lower surface area and therefore savings in appurtenance and finishing materials.

STRUCTURE

DyTherm Phenolic insulation has a high closed cell content and fine cell structure. DyTherm Phenolic insulation consists of a densely cross linked matrix which does not readily break down in service.

HYGIENE

DyTherm Phenolic insulation is resistant to fungus and mold growth, will not sustain vermin, and is non-fibrous and odorless.

Dyplast Products is the preeminent manufacturer/ supplier of polyisocyanurate, expanded polystyrene, and phenolic rigid foam products, and also distributes a variety of complementary products. With world-class production facilities in Miami, Florida, Dyplast Products offers its customers unsurpassed technology, responsiveness, wide-ranging product configurations, and state-of-the-art quality control. Our customer-focused staff, combined with our sound financial footing, ensure we deliver incomparable value to our customers far into the future. **For information on Dyplast Products or additional technical data on this product, visit our website at www.dyplastproducts.com.**

MOISTURE RESISTANCE

DyTherm Phenolic insulation has a 95% (or greater) closed cell content, which makes it non-wicking and highly resistant to moisture penetration. This is particularly valuable in humid conditions where the build up of moisture can compromise the performance of lesser insulation materials. It is an ideal insulation material for cold, chilled and low temperature hot water pipework.

CHEMICAL RESISTANCE AND COMPATIBILITY

DyTherm Phenolic insulation is resistant to a wide range of oils, solvents and chemicals. Its compatibility with most solvent based coatings and adhesives, and polyester and epoxy resin based coatings, allows it to maintain its physical integrity when in contact with such substances.

SURFACE BURNING CHARACTERISTICS

The resistance to burning and spread of flame of DyTherm Phenolic insulation is superior to that of any other cellular plastic insulation material, regardless of facing type. In addition, there is an almost complete absence of smoke when these materials are subjected to a flame source, buying valuable time for evacuation.

As tested in accordance with ASTM E-84, DyTherm Phenolic insulation exhibits a flame spread index and smoke development index of 5/0 (@2.5 lb/ft³ at 4 inch thick), making it by far the most thermally efficient insulation meeting the standards of the International Mechanical Code.

QUALITY ASSURANCE

DyTherm Phenolic insulation is manufactured to the highest quality standards inspected under Dyplast's internal quality control system. This program is audited by independent third parties to ensure consistency in quality.

General Physical Properties (Densities 2.5, 3.75, 5.0, 7.5 lb/ft ³)						
Property	Test Method	Unit	Typical Values			
Nominal Density	ASTM D1622	lb/ft ³	2.5	3.75	5.0	7.5
Thermal Conductivity @ +50F Initial (provisional)	ASTM C518	Btu-in/hr-ft ² ·°F	0.145	0.17	0.21	0.22
Color			Gray	Gray	Gray	Gray
Closed Cell Content	ASTM D2856 Method B	%	95	95	95	95
Operating Temperature Limits	Upper Limit	°F	248	248	248	248
	Lower Limit	°F	-292	-292	-292	-292
Minimum Compressive Strength @ +73F	ASTM D1621	psi				
	Parallel		29	58	90	150
	Perpendicular		17.5	43	70	110
Minimum Tensile Strength @ +73F	ASTM D1623	psi				
	Parallel		29	54	85	130
	Perpendicular		26	41	65	100
Surface Burning Characteristics	ASTM E84					
Flame Spread @ 4 in. thick			5	<25	<25	<25
Smoke Density @ 4 in. thick			0	<50	<50	<50

1. Physical properties are measured at 70-75F unless otherwise indicated.
2. These are nominal values obtained from representative product samples, and are subject to normal manufacturing variances.
3. Average values through the foam cross section.
4. Frequent and severe thermal cycling can produce dimensional changes significantly greater than those listed here. Special design considerations must be made in systems subject to severe cycling.
5. This numerical flame spread data is not intended to reflect hazards presented by this or any other material under actual fire conditions.

FEATURES AND BENEFITS

Dimensionally stable; Superior insulating value; Excellent Moisture Resistance; <25/50 Flame Spread /Smoke Development; Easy to handle and shape in the field; Sheets can be cut to close tolerance; Abrication available to virtually any shape/size; Environmentally friendly (Zero-ODP); High strength; Chemically resistant; Low life-cycle cost; Light-weight.

APPLICATIONS

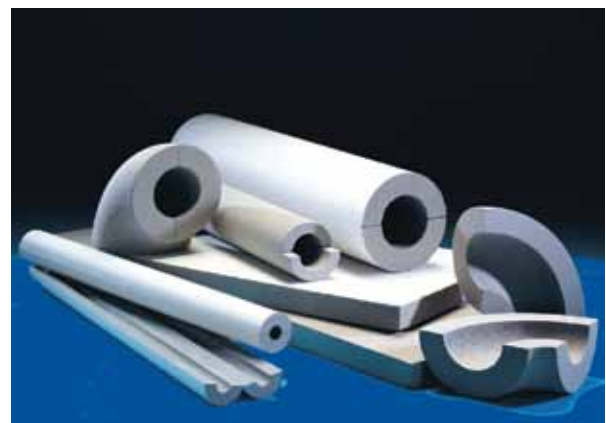
Pipe, tank, and vessel insulation; Panel insulation for refrigeration and freezers; Core material for architectural and panelized construction; Panel insulation for shipping containers and rail cars; Flat panels for duct and air plenum insulation.

INDUSTRIES

Refrigeration/freezer manufacture; Commercial HVAC and chill water systems; LNG, LOX and other cryogenic facilities; Commercial building construction; Refrigerated transportation.

INSTALLATION

When using DyTherm as part of an insulation system with vapor retarders, mastics, and jacketing, vapor retarders may be field-applied or factory-applied by an authorized fabricator. (See Installation Guidelines)



DISCLAIMER OF WARRANTIES AND LIABILITIES

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