



PIPE INSULATION

STYROFOAM Brand Pipe Insulation Billet For Low Temperature Applications

STYROFOAM* brand insulation has enjoyed a long and successful history in low temperature applications. For over 40 years it has been used to insulate refrigerated buildings, refrigerated trucks and refrigeration equipment and piping.

The key to this success has been the excellent performance of STYROFOAM brand insulation. It has exceptional moisture resistance, so it keeps its insulation value long term. And it has high compressive strength to resist physical damage. For many industrial firms, STYROFOAM brand insulation over the years has become the preferred insulation for their low temperature systems, both for preventing surface condensation and for minimizing heat gain.

This technical data sheet presents product information and physical properties of STYROFOAM brand Pipe Insulation Billet.

Product Description

STYROFOAM brand Pipe Insulation Billet is manufactured in various sizes (please consult your local Dow representative for details). It is specifically formulated for easy fabrication into such shapes as pipe covering, valve and fitting covers and equipment lagging. Common fabrication techniques include hot wire cutting, sawing, routing and planing. The resulting fabricated sections are non-dusting and non-irritating and are easily installed.

Moisture Resistance and Insulation Value

STYROFOAM brand insulation is manufactured by expanding molten polystyrene in a continuous extrusion process to form a rigid, closed-cell foam with a uniform, void-free, micro-cellular structure. This structure gives STYROFOAM brand insulation its high compressive strength. Also, it gives the foam its excellent resistance to water, resistance to water vapor and even

resistance to wet freeze-thaw cycling. Consequently, STYROFOAM brand insulation is able to keep insulating, despite the high moisture conditions which exist continually in low temperature operations — conditions which can cause lesser insulation products to absorb moisture and lose insulating ability.

Preventing Condensation

Corrosion and dripping are the typical problems associated with condensation occurring on equipment and piping. To eliminate condensation, the insulation system must be designed to maintain a surface temperature above the dewpoint temperature of the ambient air during the most severe temperature and humidity conditions that can be anticipated. In addition, an effective vapor barrier such as Saran* Industrial Vapor Retarder Film, manufactured by The Dow Chemical Company, should be installed over the insulation to prevent vapor from penetrating the insulation.

STYROFOAM Brand Pipe Insulation Billet

Physical Properties ¹	ASTM Method	English Units	English Values ³	Metric Units	Metric Values
Density ⁴	D 1622	lb/ft ³	1.6	Kg/m ³	26
Thermal Conductivity k-factor @ 180 days and 75°F mean temp.	C 518	BTU in./hr ft ² °F	0.259	W/m°C	.037
Compressive Strength ⁴	D 1621	lb/in. ²	20	kPa	138
Water Absorption	C 272	% by Volume	0.5		0.5
	D 2842	% by Volume	1.0		1.0
Water Vapor Permeability	E 96	Perm-inch	1.5	Ng/Pa•s.m	2.2
Dimensional Stability ⁴	D 2126	% Volume change	1.0	—	1.0
Service Temperature					
Lower Limit		°F	-297	°C	-183
Upper Limit		°F	165	°C	74
Flammability ^{2,5}	E 84				
Flame Spread, 4 inch max.			5		
Smoke Generation, 4 inch max.			165		
Coefficient of Linear Expansion		in./in.°F x 10 ⁻⁶	35	cm/m°C x 10 ⁻⁴	19.4

(1) All properties are measured at 74°F unless otherwise noted.

(2) Numerical flame spread data is not intended to reflect hazards presented under actual fire conditions.

(3) 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 Dow Representative.

(4) Average value through the foam cross section.

(5) U.L. Certification for STYROFOAM Brand Insulation. Certification can be provided upon request.

*Trademark of The Dow Chemical Company

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. Dow assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

COMBUSTIBLE: Protect from flame and other high heat sources. For more information, consult MSDS and/or call Dow (1-800-441-4369). In an emergency, call (1-517-636-4400). Local building codes may require a protective or thermal barrier. Contact your local building inspector for more information.

Published April 2000.



**In the U.S., call:
1-800-441-4369**

The Dow Chemical Company
Construction Materials Group
200 Larkin Center
Midland, MI 48674
Visit our website: www.dowpipe.com

**In Canada, call:
1-800-268-4840 English
1-800-363-6210 French**



*Trademark of The Dow Chemical Company

Form No. 179-8040-400XQRP