Johns Manville
A Berkshire Hathaway Company

INDUSTRIAL INSULATION

DUPONT™ STYROFOAM™ BRAND
EXTRUDED POLYSTYRENE PIPE INSULATION BILLET

DATA SHEET

DESCRIPTION

DuPont™ Styrofoam™ Brand Extruded Polystyrene Pipe Insulation Billet (Styrofoam™) is a rigid thermoplastic foam manufactured by a proprietary extrusion process that forms a uniform, closed cell structure. This structure, along with the naturally water-repellent nature of the resin, gives Styrofoam™ products high compressive strength, low friability and excellent resistance to water vapor and water absorption from freeze-thaw cycling. Styrofoam™ is non-dusting and non-irritating and is not a known food source for mold and mildew.

APPLICATIONS

Styrofoam™ is used extensively in industrial and commercial piping applications. With a service temperature range of -320°F to 165°F (-196°C to 74°C), Styrofoam™ is a preferred material for low-temperature systems, both for minimizing heat gain and preventing surface condensation.

Styrofoam™ maintains its key insulating properties in low-temperature applications and other environments with high humidity and high-moisture conditions.

Typical applications for Styrofoam™ include:

- Ammonia refrigeration lines
- Freezer rooms
- Chilled water piping
- Transport pipelines
- Cold storage systems
- Refrigeration equipment
- Pharmaceutical plants
- Cryogenic systems

SIZE

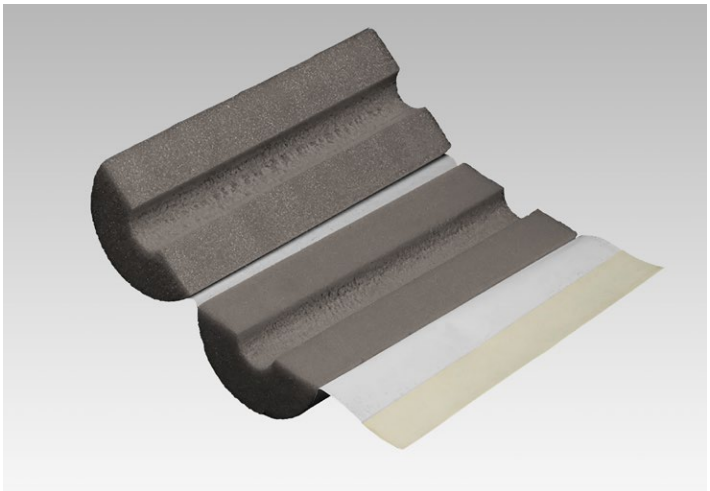
Styrofoam™ is extruded into billets. Height and width:
7" x 14" (18 cm x 36 cm)
8" x 16" (20 cm x 41 cm)
10" x 20" (25 cm x 51 cm)
Length: 9' (2.75 m)

AVAILABILITY

Styrofoam™ insulation is distributed through JM's extensive Authorized Fabricator Network

INSTALLATION

Styrofoam™ is specifically formulated for easy fabrication into many shapes, such as pipe coverings, valve and fitting covers, and others to meet specific design needs. Because of the critical design aspects in many applications, JM recommends contacting qualified designers for system design.



PHYSICAL PROPERTIES

Styrofoam™ exhibits the properties and characteristics indicated in Table 1 when tested as represented. Consultation with local code offcials and design engineers/specifiers are recommended before application. As with all cellular polymers, Styrofoam™ 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

Styrofoam™ is manufactured without the use of CFC's or HCFC's and only with low global warming potential (GWP) blowing agents. Styrofoam™ is recyclable and can be reused in many applications.

FIRE PROTECTION & SAFETY CONSIDERATIONS

Styrofoam™ 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 Styrofoam™ contain information on the safe handling, storage and use of this material, and can be found at www.jm.com.

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PHYSICAL PROPERTIES OF STYROFOAM™ (1)

ASTM C578, Type XIII	
Density, ASTM D1622	2 lb/ft^3 (32.5 kg/m^3)
Compressive Strength, ASTM D1621	20 lb/in^2 (138 kPa) parallel to rise
k-Factor, ASTM C518, @75°F (24°C) mean temp, Aged 180 Days (2)	0.259 Btu•in/hr•ft^2•°F 0.037 W/m°C
Water Absorption, ASTM C272	0.5% volume (max)
Water Vapor Permeability, ASTM E96	2.0 perms/inch
Flexural Strength(3)	60 PSI
Dimensional Stability (4), ASTM D2126 (%Change)	2.0% @ 158° F (70°C), 97% R.H. 7 days
Service Temperature (5)	-320°F to 165°F (-196°C to 73.9°C)
Color	Charcoal Gray

(1) 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 JM representative.

(2) Thermal conductivity data as provided by the manufacturer (DuPont) meeting a requirement of 0.259 Btu.in/hr.ft^2/°F is reflective of product aged and tested at 1" thickness, and therefore this data claims conformance under ASTM C578 Type XIII for thermal conductivity as aged in 1" thicknesses.

(3) Flexural strength was tested on material with surface skin.

(4) Average value through foam cross section.

(5) Styrofoam™ can be used at this temperature and below but for applications below -297°F certain system design precautions may be necessary. Please consult JM for more information.

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