



# STYROFOAM™ BRAND FREEZERATE™ EXTRUDED POLYSTYRENE FOAM INSULATION

## 1. PRODUCT NAME

STYROFOAM™ Brand  
FREEZERATE™ Extruded  
Polystyrene Foam Insulation

## 2. MANUFACTURER

The Dow Chemical Company  
Dow Building Solutions  
200 Larkin  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465

[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

## 3. PRODUCT DESCRIPTION

STYROFOAM™ Brand FREEZERATE™ is an extruded polystyrene foam insulation with smooth, high density skins. It has excellent insulating characteristics, high resistance to water and water vapor, excellent freeze-thaw resistance, superior compressive strength and long-term durability.

## BASIC USE

STYROFOAM™ Brand FREEZERATE™ Extruded Polystyrene Foam Insulation is specifically designed for use as subfloor thermal insulation in low-temperature applications. STYROFOAM™ Brand FREEZERATE™ Insulation can also be used in most static and dynamic loading situations for flooring applications. Because the rigid foam insulation boards resist even severe forms of moisture penetration in freezer and cooler construction, they offer long-term R-values\* superior to other types of thermal insulation.

## 4. TECHNICAL DATA APPLICABLE STANDARDS

STYROFOAM™ Brand FREEZERATE™ Insulation meets ASTM C578-07, Type IV – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation, which includes:

- ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by

Means of the Heat Flow Meter Apparatus

- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

## CODE COMPLIANCES

STYROFOAM™ Brand FREEZERATE™ Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see NES NER 699
- ICBO-ES ER 2257
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

Contact your Dow sales representative or local authorities for state and local building code requirements and related acceptances.

## PHYSICAL PROPERTIES

STYROFOAM™ Brand FREEZERATE™ Insulation exhibits physical properties as indicated in Table 2 when tested as represented.

## ENVIRONMENTAL DATA

STYROFOAM™ Brand FREEZERATE™ Extruded Polystyrene Foam Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand FREEZERATE™ Extruded Polystyrene Foam Insulation is reusable in many applications.

## FIRE PROTECTION

STYROFOAM™ Brand FREEZERATE™ Extruded Polystyrene Foam Insulation is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

## 5. INSTALLATION

Boards of STYROFOAM™ Brand FREEZERATE™ Insulation are easy to handle, cut and install. For more specific instructions, contact a local Dow representative or access the literature library: [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

## 6. AVAILABILITY

STYROFOAM™ Brand FREEZERATE™ Insulation is manufactured in several locations across North America and is distributed through an extensive network. For more information, call 1-800-232-2436.

**TABLE 1: SIZES, R-VALUES AND EDGE TREATMENTS FOR STYROFOAM™ BRAND FREEZERATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

NOMINAL BOARD THICKNESS <sup>(1)</sup> , IN.	R-VALUE <sup>(2)</sup>	BOARD SIZE, FT	EDGE TREATMENT
2.0	10.0	2 x 8, 4 x 8	Square Edge
3.0	15.0	2 x 8, 4 x 8	Square Edge

(1) Not all product sizes are available in all regions.

(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft<sup>2</sup>•h•°F/Btu. R-value determined by ASTM C518.

**TABLE 2: PHYSICAL PROPERTIES OF STYROFOAM™ BRAND FREEZERATE™ EXTRUDED POLYSTYRENE FOAM INSULATION**

PROPERTY AND TEST METHOD	VALUE
Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, min., R-value	5.0
Compressive Strength <sup>(1)</sup> , ASTM D1621, psi, min.	30
Water Absorption, ASTM C272, % by volume, max.	0.3
Water Vapor Permeance <sup>(2)</sup> , ASTM E96, perm, max.	1.5
Maximum Operating Temperature, °F	165
Coefficient of Linear Thermal Expansion, in/in•°F	3.5 x 10 <sup>-5</sup>
Flexural Strength, ASTM C203, psi, min.	50
Dimensional Stability, ASTM D2126, % linear change, max.	2.0
Flame Spread <sup>(3)</sup> , ASTM E84	15
Smoke Development, ASTM E84	165

(1) Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first. Since STYROFOAM™ Extruded Polystyrene Foam Insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep and fatigue deformation.

(2) Based on 1" thickness.

(3) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

## 7. WARRANTY

A limited warranty is available in the United States that covers the thermal resistance retention of STYROFOAM™ Brand FREEZERATE™ Insulation. Refer to the Dow warranty certificate for complete details.

## 8. MAINTENANCE

Not applicable.

## 9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand FREEZERATE™ Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call 1-866-583-BLUE (2583).

## 10. FILING SYSTEMS

- [www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)
- [www.sweets.com](http://www.sweets.com)

[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

**Technical Information**  
1-866-583-BLUE (2583)  
**Sales Information**  
1-800-232-2436

**IN THE U.S.**  
THE DOW CHEMICAL COMPANY  
200 Larkin  
Midland, MI 48674

Dow has manufactured STYROFOAM™ Brand Extruded Polystyrene Foam Insulation for use in construction and specialty applications for more than 60 years. Its dense closed-cell structure gives STYROFOAM™ Brand Extruded Polystyrene Foam Insulation excellent moisture resistance, long-term thermal performance and compressive strength. STYROFOAM™ Brand Extruded Polystyrene Foam Insulation is reusable in many applications.

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 EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY DOW. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

CAUTION: This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

**WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.**

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

