# DuPont™ Styrofoam™ Brand Highload 100 XPS Insulation

Subfloor Thermal Insulation for Low-Temperature Applications
U.S. HFC Regulation Compliant Formulation

## OVERVIEW

### Description

**DuPont™ Styrofoam™ Brand Highload 100 Extruded Polystyrene (XPS) Insulation** is a closed-cell foam insulation designed for demanding applications such as low-temperature (freezer floor) applications, highways, airport runways, bridge abutments, parking decks, utility lines, and ice rinks. With a compressive strength of 100 psi (690 kPa), it offers exceptional moisture resistance and R-value retention.


**Styrofoam™ Brand Highload Insulation** products are engineered to resist compressive creep and fatigue, ensuring sustained compressive strength over time. Like all Styrofoam™ Brand insulation products, **Highload 100 XPS Insulation** is known for its durability, versatility, and reusability, making it a preferred choice for a wide range of high-load applications.

### Features and Benefits

- **Highly Moisture Resistant:** Superior resistance to water absorption, water vapor transmission and freeze thaw cycling
- **Long-Term Compressive Strength:** Resist compressive creep and fatigue

### Sustainable Solutions

- Styrofoam™ Brand Highload XPS Insulation uses BluEdge™ technology. Styrofoam™ Brand Highload Insulation is designed to be compliant with U.S. state HFC regulations where sold. It uses enhanced level of sustainable blowing agents, and BluEdge™ flame retardant technology. It is hydrochlorofluorocarbon (HCFC) free with zero ozone depletion potential and is reusable in many applications.

### Applications

- Protected Membrane Roofs (PMR)
- Green Roof Applications
- Blue Roof Applications
- Geotechnical heavy load-bearing structures (airport runways, highways, helicopter landing pads, bridge abutments, parking decks)
- Styrofoam™ Brand Highload 100 XPS Insulation is an ideal solution for a variety of high-load applications:
- Conventional Roofs and single-ply membrane
- Below Grade foundation, floor, and wall Insulation

### Warranty

- Styrofoam™ Brand Insulation is backed by a 50-year thermal limited warranty on products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. For additional warranty information please visit building.dupont.com or contact your DuPont representative.

### Standard Sizes

Standard Sizes for DuPont™ Styrofoam™ Brand Highload 100 XPS Insulation

| Thickness | Width | Length | R-Value | Edge Treatment |
|---|---|---|---|---|
| 1.5 in. | 2 ft. | 8 ft. | 7.5 | Square Edge |
| 2 in. | 2 ft. | 8 ft. | 10 | Square Edge |
| 3 in. | 2 ft. | 8 ft. | 15.0 | Square Edge |

**Note:** Please be advised that additional sizes may be available. Availability of all sizes varies by region and is subject to change. For further information, please contact your local DuPont Sales Representative or call us at 1-866-338-7668.

## TESTING AND CODE COMPLIANCE

**Styrofoam™ Brand Highload 100 XPS Insulation** exhibits the properties and characteristics indicated in the table below when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-833-338-7668 when additional guidance is required for writing specifications that include this product.

| TEST METHOD | TEST TITLE | PROPERTY | RESULTS |
|---|---|---|---|
| **FIRE** | | | |
| UL 723 | Test Method for Surface Burning Characteristics of Building Materials | Surface Burning Characteristics | Flame Spread ≤ 25<br>Smoke Developed ≤ 450 |
| **THERMAL** | | | |
| ASTM C518 | Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus | Thermal Resistance per inch, @ 75°F mean temp.[1] | 5.0 $ft^2$ •h•°F/Btu, R-value, min. |
| ASTM D696 | Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between −30°C and + 30°C with a Vitreous Silica Dilatometer | Coefficient of Linear Thermal Expansion | 3.5 x 10-5 in/in•°F |
| ASTM D2126 | Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging | Change in Dimensions | 2.0 % change, max. |
| **STRENGTH** | | | |
| ASTM D1621 | Standard Test Method for Compressive Properties of Rigid Cellular Plastics | Compressive Strength[2] | 100 psi, min. |
| ASTM D1622 | Standard Test Method for Compressive Properties of Rigid Cellular Plastics | Compressive Modulus (typical) | 3,700 psi |
| ASTM C203 | Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation | Flexural Strength | 100 psi, min |
| **WATER** | | | |
| ASTM C272 | Standard Test Method for Water Absorption of Core Materials for Sandwich Construction | Water Absorption | 0.1 % by volume, max. |
| ASTM E96 | Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials | Water Vapor Permeance[3] | 0.8 perm, max. |

[1]Values are consistent with the criteria of ASTM C578 and the requirements of the FTC R-value rule (16 CFR Part 460). R means resistance to heat flow. The higher the R-value, the greater the insulating power.

[2]Vertical compressive strength is measured at 5 percent deformation or at yield, whichever occurs first. Since Styrofoam insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3:1 is suggested. For dynamic loads, call 1-866-583-2583 for safety factor recommendation.

[3]Based on 1" thickness.

## CODE COMPLIANCE

**Styrofoam™ Brand Highload 100 XPS Insulation** complies with the following codes:

| CODE | DESCRIPTION |
|---|---|
| US Product Listings & Verifications | Factory Mutual Approved<br>International Residential Code (IRC) and International Building Code (IBC); see ICC-ES ESR-4755<br>Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D-369 |
| Regional Code Listings & Reports | California Std. Reg. #CA T1535 |

## HANDLING

### Warning

- **WARNING: For Professional Use Only** - Read and follow the entire Safety, Handling, and Storage section carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont products.

### Product Limitations

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

Due to the critical technical design aspects of many of its applications, DuPont recommends that qualified designers or consultants design your system. Follow all applicable federal, provincials, territories, local and employer regulations.

## Precautionary Statements

- CAUTION: Styrofoam™ Brand XPS Insulation is combustible. 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 call the DuPont Contact Center at 866-583-2583 or contact your local building inspector. For emergencies contact Chemtrec 800-424-9300, CCN (Contract Number) 7442.
- Fabrication methods which involve cutting into this product may release the blowing agent(s) remaining in the cells. Provide adequate ventilation to assure localized concentrations in release areas are maintained below the lower flammable limit.
- If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air. Mechanical cutting, grinding or sawing can cause formation of dusts. To reduce the potential for dust explosion, do not permit dust to accumulate.
- Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.

## Supplemental Information

- The product meets the definition of an article and is exempt from US TSCA and Canadian DSL inventory requirements.

  Compliant with Title 42 Chapter 85 Clean Air Act: Subchapter VII American Innovation and Manufacturing Act of 2020, and Section 612 US EPA Significant New Alternative Policy. Global Warming Potential <150. This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

  Compliant with CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999, SOR/2016-137, 64.5 (1) Plastic foam or rigid foam product. Global Warming Potential <150.

## Handling & Use

- Before installation, substrate must be clean, dry, smooth and free from oil, grease, rust, frost and snow. Since dust would impair the performance of adhesives and finishes, dusty surfaces should be brushed off before products are applied.
- Do not leave Styrofoam™ Brand XPS exposed to direct sunlight for more than 90 days. Consult a DuPont representative if exposure is expected to be longer than 90 days. Prolonged exposure to ultraviolet radiation may cause the surface of Styrofoam™ Brand XPS to become faded and dusty. The surface degradation will have no measurable effect on the insulating value of the foam unless the deterioration is allowed to continue until foam thickness is lost.
- Use gloves to protect from mechanical injury.

## Cleanup & Disposal

- Dispose of any residual DuPont product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.
- Styrofoam™ Brand XPS Insulation is made of extruded polystyrene (XPS) and can be recycled at facilities that recycle XPS materials. Please check recycling facilities in your area to ensure they can recycle XPS Insulation.

## Life & Storage

- In order to prevent buildup of combustible vapors, do not store large quantities of this product in unventilated spaces. Transport bulk shipments of this product in ventilated vehicles. During shipment, storage, installation and use, this material should not be exposed to flame or other ignition sources.

  When stored outdoors, keep insulation boards covered with white plastic film or light-colored tarps to protect from weather and weighted down to prevent boards from being blown around by the wind.

  Store above standing water.

**For more information, visit us at**
**building.dupont.com**
**or call us at 1-833-338-7668**



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