



1 | PRODUCT NAME

STYROFOAM Highload 40, 60 and 100 Insulation

2 | Manufacturer

The Dow Chemical Company
 Dow Building & Construction
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 Midland, MI 48674
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3 | Product Description

STYROFOAM™ Highload extruded polystyrene insulation is a closed-cell foam insulation. Available in compressive strengths of 40, 60 or 100 psi, STYROFOAM Highload insulation features superior moisture resistance and R-value** retention. All three STYROFOAM Highload insulation products resist compressive creep and fatigue, delivering long-term compressive strength. Like all STYROFOAM insulation products, STYROFOAM Highload 40, 60 and 100 are durable, versatile and reusable – making them the preferred choices for a variety of high-load applications.

BASIC USE

STYROFOAM Highload insulation is ideal for use in low-temperature (freezer floor) applications, highways, airport runways, bridge abutments, parking decks, utility lines, ice rinks and plaza decks. It is the responsibility of the designer to select the proper STYROFOAM Highload insulation product based on the dead and live loads expected in the application.

SIZES

Thickness:
 2" or 3" – STYROFOAM Highload 40 and 60
 2" – STYROFOAM Highload 100
 Width and length:
 2' x 8' STYROFOAM Highload 40, 60 and 100
 Edge treatment:
 square edge

Not all products are available in all parts of the country. Other product sizes are available by custom order. Consult your Dow representative for information.

4 | Technical Data

APPLICABLE STANDARDS

- ASTM International
- ASTM C518 – Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
 - ASTM C177 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
 - ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
 - ASTM D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
 - ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
 - ASTM D696 – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics between -30°C and 30°C with a Vitreous Silica Dilatometer

TABLE 1

Physical Properties of STYROFOAM Highload 40, 60 and 100 Insulation			
Property and Test Method	Value		
	Highload 40	Highload 60	Highload 100
Thermal Resistance ⁽¹⁾ , per in. (25.4mm) ASTM C518, C177, @ 75°F mean temp., ft ² •h•°F/Btu min., R-value (RSI)	5.0	5.0	5.0
Compressive Strength, ASTM D1621, psi min. ⁽²⁾	40	60	100
Water Absorption, ASTM D2842, % by volume, max.	0.1	0.1	0.1
Water Vapour Permeance ⁽³⁾ , ASTM E96, perms	0.8	0.8	0.8
Maximum Use Temperature °F	165	165	165
Coefficient of Linear Thermal Expansion, ASTM D696, in/in °F	3.5 x 10 ⁻⁵	3.5 x 10 ⁻⁵	3.5 x 10 ⁻⁵
Flexural Strength, ASTM C203, min., psi	60	75	100
Complies with ASTM C578-01, Type	VI	VII	V

⁽¹⁾For 1" (25.4 mm) material

⁽²⁾Vertical compressive strength is measured at 5% 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, 5-1 is suggested.

⁽³⁾Water vapour permeance varies with product type and thickness. Values are based on the desiccant method and they apply to insulation 1" or greater in thickness.

TABLE 2

Chemical Resistance of STYROFOAM Highload 40, 60 and 100 Insulation			
Acid, inorganic	Good	Gases, carbon dioxide (CO ₂)	Excellent
Acid, organic	Good	Gases, dioxide (O ₂)	Excellent
Alcohol	Excellent	Gases, nitrous hydroxide (NH ₃)	Good
Asphalts, water-based	Excellent	Gases, sulfur dioxide (SO ₂)	Good
Bases (caustics)	Excellent	Mineral oil USP	Excellent
Bleach	Good	Paints, alcohol-based	Good
Brines and other salts	Excellent	Paints, water-based	Excellent
Cements and mortar	Excellent	Water	Excellent

- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation

CODE COMPLIANCES

STYROFOAM Highload 40, 60 and 100 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

PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM Highload 40, 60 and 100 insulation products exhibit the physical properties as indicated in Table 1.

For chemical resistance properties of STYROFOAM Highload 40, 60 and 100 insulation products, see Table 2.

ENVIRONMENTAL DATA

STYROFOAM Highload 40, 60 and 100 insulation is manufactured with HCFC

blowing agents which have 94 percent less ozone depletion potential than standard CFC blowing agents.

FIRE PROTECTION

STYROFOAM Highload 40, 60 and 100 insulation is combustible; protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

5 Installation

STYROFOAM Highload 40, 60 and 100 insulation boards are easy to handle and install. They can be cut with a utility knife or any sharp blade. Contact a local Dow representative or access the literature library at www.dowstyrofoam.com/architect for more specific instructions.

6 Availability

STYROFOAM Highload 40, 60 and 100 insulation products are distributed through an

extensive network. For more information, contact your local Dow representative or call 1-800-232-2436.

7 Warranty

Fifteen-year limited thermal warranty is available.

8 Maintenance

Not applicable.

9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM Highload 40, 60 and 100 insulation products. Technical personnel are available at Dow sales offices to assist with any insulation project. For technical assistance call 1-866-583-BLUE (2583).

10 Filing Systems

- www.dowstyrofoam.com/architect
- www.sweets.com

IN THE U.S.:

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

THE DOW CHEMICAL COMPANY

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. 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.



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