



**Product Name**

TERRAFOAM® HS-40 and HS-60

**Associated Specification Section**

MasterFormat 2004 #07 21 13

MasterFormat 1995 # 07213

**Manufacturer's Name**

Beaver Plastics

March 10, 2019

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**PRODUCT DESCRIPTION**

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**PRODUCT FEATURES**

- DESCRIPTION / BASIC USES
  - Closed cell high density expanded polystyrene (HDEPS) insulation suitable for high load compressive strength applications.
  - Geotechnical and other below grade applications:
    - Building perimeter and under slab insulation.
    - Custom tapered or slope to drain profiles.
    - Frost protected shallow foundations.
    - Frost protection for buried utilities.
    - Highway and railroad bed construction.
    - Airport runways, taxiways, and aprons.
    - Large earth structures, ramps, and beams.
    - Isolating bearing pads under heavy process equipment and industrial traffic.
    - Ice arena and snow melt systems.
    - Freezers and coolers.
  - Above grade applications:
    - In conjunction with above grade construction.
    - Masonry and cavity wall assemblies.
    - Roof insulation, including tapered modules for slope-to-drain areas.
    - Exterior Insulated Finish Systems (EIFS).
- PRODUCT ATTRIBUTES AND CHARACTERISTICS
  - Excellent resistance to freeze/thaw cycles.
  - Low moisture absorption properties.
  - Contains no CFCs, HCFCs, or other refrigerant gases.
  - Biologically inert. Will not support mould, mildew or fungus growth. Not a pest food source.
  - Contains a chemical additive to inhibit accidental ignition from a small fire.
  - Non-toxic and hypo-allergenic. Does not off-gas.
  - The insulation value (R-Value) increases as temperature decreases. Does not lose insulation value over time.



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- **SELECTION CRITERIA**
  - Suitable for cold climate applications, where soil is prone to heaving.
  - Can be used for buoyancy in sea and fresh water.
  - HS-40: Available in two standard board sizes, in any thickness up to 1220 mm (48 inches).
  - HS-60: Available in 610 x 1220 mm 2' x 4' boards, up to 150 mm (6 inches) thick.
  - Available in flat sheets, sloped or custom profiles.
  
- **SUSTAINABILITY CRITERIA**
  - Contains recycled content and can contribute to LEED.
  - Manufactured in Edmonton, AB. and Chilliwack, B.C., Canada (contributes to LEED Credits)
  - Contains no CFC or HCFC gasses; does not contribute to ozone depletion.
  - Stable R-value – will not decrease over time.
  - Non-toxic; does not irritate skin on exposure.
  - Biologically inert and will not support mould, mildew or fungus growth or pests.
  
- **APPLICABLE STANDARDS, RELATED REFERENCES**
  - ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
  - ASTM C578 – Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
  - 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 E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
  - ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
  - CAN/ULC-S701 – Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
  - CCMC #12982-L (HS-40) Canadian Construction Material Centre
    - Performance tests certified by Intertek Testing Services Ltd.



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- **PACKAGING, HANDLING, PROTECTION, AND DELIVERY INSTRUCTIONS**
  - Protect panels from damage during transit.
  - Protect panels from UV exposure during storage and after installation.
  - Do not expose to volatile hydrocarbons, such as fuel oils, gasoline, and alcohols.
- **LIMITATIONS**
  - Surface may degrade with lengthy exposure to ultra-violet light.
  - Will burn when exposed to large continuous flames.
- **SAFETY PRECAUTIONS**
  - Follow normal fire precautions and good housekeeping methods during storage and installation.
- **AVAILABILITY**
  - Available directly from Beaver Plastics or appointed distributors.
- **COST**
  - Varies with application, configuration and relative size of project.
  - Consult manufacturer or distributors for specific product costs or budget pricing.

**PRODUCT PROPERTIES**

- **MATERIALS, COMPOSITION, PROPERTIES**
  - Technical Properties: Rigid, closed cell, expanded polystyrene (EPS) board and as follows:
    - HS-40: Meeting ASTM C578 Type XIV, and exceeds CAN/ULC S701 Type 3.
    - HS-60: Meeting ASTM C578 Type XV, and exceeds CAN/ULC S701 Type 3.
- **ACCESSORIES**
  - Adhesives and/or insulation fasteners.



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**PRODUCT DESCRIPTION**

• **PROPERTIES**

PHYSICAL PROPERTY	METRIC		IMPERIAL	
	HS-40	HS-60	HS-40	HS-60
Compressive Strength (ASTM D1621)	275 kPa (min)	415 kPa (min)	40 psi (min)	60 psi (min)
Compressive Modulus (typical) (ASTM 1621)	9267 kPa	17,933 kPa	1344 psi	2601 psi
Thermal Resistance (ASTM C578)	RSI 0.88 @ -10°C		R 5 @ 15°F	
	RSI 0.75 @ 24°C		R 4.3 @ 75°F	
Flexural Strength	517 kPa (min)	725 kPa (min)	75 psi (min)	105 psi (min)
Water Vapour Permeance (ASTM E96)	143 ng/Pa.s.m <sup>2</sup> (max)	143 ng/Pa.s.m <sup>2</sup> (max)	2.5 perm (max)	2.5 perm (max)
Water Absorption (ASTM D2842)	1% (max)		1% (max)	
Dimensional Stability, % linear change	1% (max)		1% (max)	

• **DIMENSIONS**

	HS-40		HS-60	
	Metric	Imperial	Metric	Imperial
Thickness	1220 mm (max)	48" (max)	25, 50, 75, 100, 125 & 150 mm	1", 2", 3", 4", 5" & 6"
Length x Width	610 x 2440 mm	2' x 8'	610 x 1220 mm	2' x 4'
	1220 x 2440 mm	4' x 8'		
Edge Condition	Butt edges		Butt edges	
Notes	Custom profiles available			



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**PRODUCT PLACEMENT**

- **PREPARATION**
  - Surfaces must be smooth, dry and ready to receive insulation.
- **INSTALLATION**
  - Install products in accordance with the manufacturer's instructions for each specific application.
  - Cover exposed insulation with a finish acceptable to local building authorities.
- **MAINTENANCE INSTRUCTIONS AND PROCEDURES**
  - Avoid exposing to volatile hydrocarbons and anhydrous acids, which may degrade the expanded polystyrene.

**Corporate Identification**

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**Technical Services Available**

Phone toll free, fax or e-mail (see above)



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**Classification and Filing**

OmniClass, Table 23 - Products

23-20 50 24 11 11 11 Expanded Polystyrene Slab and Board Thermal Insulation

MasterFormat 2004:

07 21 00 – Thermal Insulation

07 21 13 – Board Insulation

07 21 13.13 – Foam Board Insulation

07 24 00 – Exterior Insulation and Finish Insulations

07 50 00 – Membrane Roofing

31 23 00 – Subgrade Excavation and Fill

31 23 23 – Fill

MasterFormat 1995:

07213 – Board Insulation

**END.**