

Terrafoam HS

High-Strength Expanded Polystyrene Insulation

Terrafoam HS is a rigid, closed-cell expanded polystyrene (EPS) insulation engineered for high-load applications where standard insulation products may not provide sufficient compressive resistance. It is designed for geotechnical, below-grade, and other demanding applications requiring stable long-term thermal performance and high compressive strength. Terrafoam HS is manufactured without CFCs, HCFCs, or other refrigerant gases and does not lose R-value over time.



Terrafoam HS is suitable for applications such as perimeter insulation, under-slab insulation, frost protected shallow foundations, buried utility protection, highway and railroad bed construction, airport runways and taxiways, plaza decks, underground parking structures, bridge abutments, ramps, industrial bearing pads, coolers, freezers, skating arenas, and roofing systems including tapered insulation.

APPLICATIONS

- Perimeter insulation for grade beams and foundation walls
- Under concrete slabs and crawlspaces
- Frost protected shallow foundations
- Frost protection for buried utilities
- Highway and railroad bed construction
- Airport runways, taxiways, and aprons
- Bridge abutments, approach slabs, and plaza decks
- Underground parking structures
- Large earth structures, ramps, and beams
- Isolating bearing pads under heavy process equipment and industrial traffic
- Ice arenas, curling facilities, snow melt systems, coolers, and freezers
- Masonry and cavity wall assemblies
- Roof insulation, including flat, sloped, and tapered systems
- Exterior Insulated Finish Systems (EIFS)

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 and applicable codes. Surfaces should be smooth, dry, and ready to receive insulation where applicable.

STORAGE, HANDLING AND PROTECTION

Terrafoam HS must be protected from damage during transit and from UV degradation during storage and after installation. Storage areas should minimize physical damage and keep material away from heat, sparks, flames, and other ignition sources. Care should be taken to protect exposed product surfaces from prolonged solar exposure. Do not expose the product to volatile hydrocarbons such as fuel oils, gasoline, and some alcohols.

CLASSIFICATIONS

Terrafoam HS is available in the following grades:

- HS-25
- HS-30
- HS-40
- HS-60
- HS-80
- HS-100

SIZES

Terrafoam HS is available in a range of thicknesses and sheet sizes depending on grade. Custom sizes and profiles are available.

	Sheet Thickness	Sheet Size
HS-25,30,40,60	1/2" to 48" (12 mm to 1220 mm)	2' x 8' (610 x 2440 mm) 4' x 8' (1220 x 2440 mm)
HS-80,100	1" to 6" (25 mm to 152 mm)	2' x 4' (610 mm x 1220 mm)

Square edge / butt edge boards are standard. Shiplap edges, tapered modules, sloped insulation, and other custom profiles may be available depending on product type and project requirements.

PACKAGING

Packaging and bundle sizes vary by product type, thickness, region, and available sheet dimensions. Please contact Beaver Thermal Solutions to confirm locally available packaging specifications and bundle sizes.

MAINTENANCE INSTRUCTIONS AND PROCEDURES

Avoid exposing Terrafoam HS to volatile hydrocarbons, aromatic or aliphatic hydrocarbons, esters, amines, and anhydrous acids, which may degrade expanded polystyrene.

TERRAFOAM HS® : PRODUCT DATA SHEET

TECHNICAL DATA

Physical Property	Units Imperial (Metric)	ASTM Test Procedure	HS-25	HS-30	HS-40	HS-60	HS-80	HS-100
Minimum Thermal Resistance @ 0°C (32°F), per 1 in.	hr-ft ² ·°F/BTU (m ² ·°C/W per 25 mm)	ASTM C177	4.62 (0.81)	4.65 (0.82)	5.0 (0.88)	5.0 (0.88)	5.0 (0.88)	5.0 (0.88)
Minimum Thermal Resistance @ 24°C (75°F), per 1 in.	hr-ft ² ·°F/BTU (m ² ·°C/W per 25 mm)	ASTM C177	4.27 (0.74)	4.30 (0.75)	4.3 (0.75)	4.3 (0.75)	4.3 (0.75)	4.3 (0.75)
Compressive Strength (min)	psi (kPa)	ASTM D1621	25 (170)	30 (210)	40 (275)	60 (415)	80 (552)	100 (690)
Flexural Strength (typical/min)	psi (kPa)	ASTM C203 / D1623	50 (345)	56 (370)	75 (517)	105 (725)	128 (880)	150 (1035)
Water Vapour Permeance (max)	perm-in / perm (ng/Pa·s·m ²)	ASTM E96	2.25 (130)	2.25 (130)	2.5 (143)	2.5 (143)	2.5 (143)	2.5 (143)
Water Absorption (max)	%	ASTM D2842	2	2	1	1	1	1
Capillary Action	—	—	none	none	none	none	none	none
Dimensional Stability, % linear change	%	ASTM D2126	1.5	1.5	1	1	1	1

TECHNICAL INFORMATION

Chemical Properties

Expanded polystyrene should not be exposed to volatile hydrocarbons such as fuel oils, gasoline, and some alcohols. Anhydrous acids such as sulfuric, glacial, and formic acid may also attack expanded polystyrene. The product is also incompatible with aromatic or aliphatic hydrocarbons, esters, and amines.

Flammability Characteristics

Terrafoam HS contains a fire-retardant additive to inhibit accidental ignition from a small fire source. However, it will burn when exposed to a large continuous flame or intense heat. Normal fire precautions and good housekeeping methods should be followed during storage and installation. Exposed insulation should be covered with a finish acceptable to local building authorities and codes.

Health and the Environment

Terrafoam HS contains no CFCs, HCFCs, or other refrigerant gases and provides stable long-term thermal performance without thermal drift. It is non-toxic, hypo-allergenic, biologically inert, and will not support mould, mildew, fungus growth, or pests. It does not off-gas under normal conditions and does not irritate skin under normal handling.

CODE EVALUATIONS APPROVALS

CCMC 12982-L.

TECHNICAL SUPPORT

For technical inquiries please contact:

- productsupport@bvrthermal.com
- (888) 453-5961 Toll Free

Website: <https://bvrthermal.com/>

APPLICABLE STANDARDS

Terrafoam HS-(25-100) is manufactured to meet or exceed applicable requirements of:

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 D1623	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
ASTM C272	Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
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.

MANUFACTURER

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