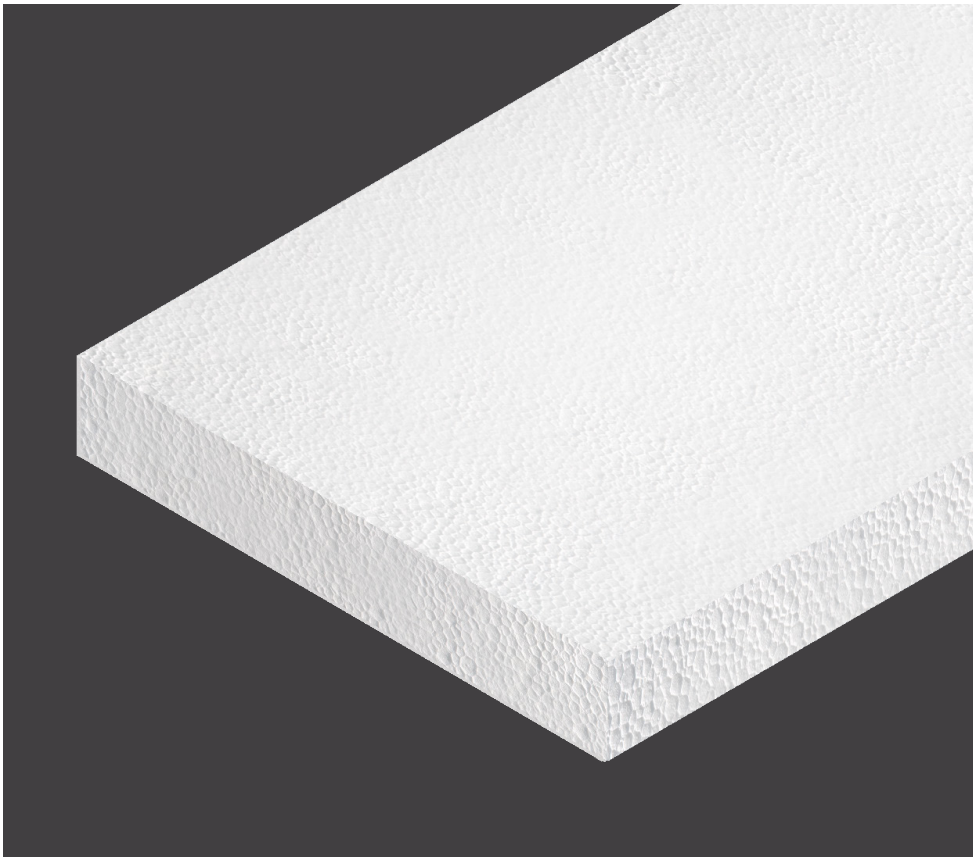
EPS Insulation

Expanded Polystyrene Rigid Foam Insulation



- High-performance rigid insulation
- Meets ASTM C578
- Can be used in a variety of applications
- Fabrication flexibility to virtually any shape/size

Kingspan®

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Description

Kingspan Insulation, LLC ("Kingspan") manufactures high-quality expanded polystyrene (EPS) rigid foam insulation. Kingspan EPS is a cellular, light-weight, resilient rigid foam providing a host of unique properties. EPS provides the thermal efficiency, temperature range, damage and moisture control, flammability rating, or moisture vapor permeability characteristics. Our product's excellent workability characteristics make it easy to handle, shape, and install. In addition, our geofoam meets or exceeds the requirements of ASTM D6817, Standard Specification for Rigid Cellular Polystyrene Geofoam.

A wide range of core thickness and densities is available for residential, commercial, industrial, or cold storage applications. The high-quality rigid foam is free of voids and cavities. Available in panels, blocks, tapered board, custom shapes, and loose fill, EPS excels in an array of applications. With its high R-values, the resulting lower energy costs can significantly lower energy costs. Wood, metal, and/or FRP skins can be readily added, improving maintenance, strength, and integrity characteristics. With available compressive strengths from 10 to 35 psi, the vast majority of construction applications can be accommodated.

Versatile Applications

Building construction (roof, wall, and foundation)

- Cavity wall and drywall base insulation
- Exterior and interior foundation wall insulation
- Roof applications (tapered panel and Holey-Board)

Refrigeration

- Building and transportation applications
- Perfect for walk-in coolers, tanks, vessels

Transportation

- Refrigerated rail and truck

Packaging Insulation

- Custom fabricated panels
- Shape molded corner protectors and cooler boxesDecking
- Transoms

Compliances and Approvals

EPS insulation products have been tested and found to meet the requirements of the specifications listed below. A Kingspan representative can provide you the assistance in determining the suitability of these and any unlisted specifications.

- UL Evaluation Report ER12579-01*
- ASTM C578
- ASTM D6817
- FM 4470*
- Miami-Dade County*

*Only EPS manufactured in Kingspan Miami have certifications/approvals

Handling & Storage

When stored outdoors, EPS should be protected from exposure to direct sunlight using the original packaging or an opaque, light–colored tarp. EPS that has been unwrapped should be covered or rewrapped. EPS left exposed should be covered within 60 days to minimize UV damage. Once the exposed EPS is covered, the damage stops and is limited to the thin layer of cells on the surface that was exposed to the UV. EPS cells below the UV exposed surface layer are generally undamaged and the EPS overall performance remains intact.

WARNING: This product is combustible. A protective barrier or thermal barrier is required as specified in the appropriate building code. Protect it from exposure to open flame or other ignition sources during shipping, storage and installation.

Health & Safety

Kingspan EPS is made of synthetic materials that is generally recognized as not providing a food source for insects, fungus, mold, or mildew. It should always be properly installed and stored. For detailed safe handling and safety information, refer to product SDS.

This product should not be used as an exposed interior surface in buildings where people can be expected to be present. An approved fire protection barrier, such as ½" gypsum wallboard or equivalent, should be applied between this product and the interior of such buildings. Fire and building codes should be followed.

All assemblies should be evaluated for effectiveness and location of vapor retarders to avoid condensation and subsequent damage to structures (ASHRAE Handbook of Fundamentals). Since foam sheathings are non–structural, they must be installed over adequately braced framing in accordance with local building codes.

WARNING: Do not stand on or otherwise support your weight on this product unless it is fully supported by a load bearing surface.

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Sustainability

EPS rigid foam insulation is an inert, organic material produced from petroleum and natural gas by-products. Our EPS product does not contain chlorofluorocarbons (CFCs) or hydro-chlorofluorocarbons (HCFCs). It provides no nutritive value to plants, animals or micro-organisms.

Fabrication and Installation

EPS insulation is easily fabricated after manufacture to meet specific design and dimensional requirements. Because of its light weight it is easily stored, handled, and installed on the job site. It can be cut with ordinary tools to ensure tight joints, thus eliminating heat loss.

Cost Efficiency

EPS insulation typically costs less than other rigid board insulants when compared on the basis of R-value. When evaluating the cost efficiency of rigid insulations, compare prices based on R-value per inch of thickness for comparable length and widths.

Other EPS Products

- Holey board roof insulation for lightweight concrete roof applications
- Architectural shapes for decorative and architectural applications; an excellent alternative to wood or concrete
- Geofoam, a lower-cost alternative to soil fills
- Concrete forms

C578 Data Table

Physical Properties[1]	ASTM Method	Units	Type I	Type VIII	Type II	Type IX	Type XIV[2]
Density (min)	D1622	lb/ft³	0.90	1.15	1.35	1.80	2.40
Compressive Strength at 10% Deformation (min)	D1621	lb/in²	10.0	13.0	15.0	25.0	40
Flexural Strength (min)	C203	lb/in²	25.0	30.0	35.0	50.0	60
Thermal Conductivity	C518	Btu.in/hr. ft².°F					
75°F			0.278	0.263	0.250	0.238	0.222
Thermal Resistance (1" thick) (min)	C518	hr.ft².°F/BTU					
75°F			3.60	3.80	4.00	4.20	4.50
Water Absorption (max)	C272	% by Volume	4.0	3.0	3.0	2.0	2.0
Water Vapor Permeability - Transmission (max)	E96	perm-inch	5.0	3.5	3.5	2.5	2.5
Dimensional Stability (max)	D2126	%					
158°F / 97%RH			2.0	2.0	2.0	2.0	2.0
-40°F / Ambient RH			2.0	2.0	2.0	2.0	2.0
Oxygen Index (min)	D2863	Volume %	24.0	24.0	24.0	24.0	24.0

[1] These are nominal values obtained from representative samples internally or third party tested to meet the requirements of ASTM C578, subject to normal manufacturing variances.
[2] Not available from Kingspan Miami facility.

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ASTM D6817								
Physical Properties[1]	ASTM Method	Units	EPS 15[2]	EPS 19	EPS 22	EPS 29	EPS 39[2]	EPS 46[3]
Density (min)	D1622	lb/ft³	0.90	1.15	1.35	1.80	2.40	2.85
Compressive Strength (min)	C165	lb/in²						
1% deformation			3.6	5.8	7.3	10.9	15.0	18.6
5% deformation			8.0	13.1	16.7	24.7	35.0	43.5
10% deformation			10.2	16.0	19.6	29.0	40.0	50.0
Flexural Strength (min)	C203	lb/in²	25.0	30.0	35.0	50.0	60.0	75.0
Oxygen Index (min)	D2863	Volume %	24	24	24	24	24	24

[1] These are nominal values obtained from representative samples internally or third party tested to meet the requirements of ASTM D6817, subject to normal manufacturing variances. For additional ranges and specifications, contact Kingspan.
[2] Not available from Kingspan Miami facility.
[3] Only available from Kingspan Miami Facility.

SCAN ME

Please scan the QR code for the most recent product information.

For more information on specific building product recommendations and installation guidelines, contact your Kingspan Insulation LLC representative.

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kingspan-eps-insulation-product-data-sheet-en-us-v1
Version 1 - 09/2023

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