

1. PRODUCT NAME

Korolite® 250 EPS Insulation for Tilt-Up

2. MANUFACTURER

Airfoam Industries Ltd.
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3. PRODUCT DESCRIPTION

Korolite® Expanded Polystyrene (EPS) is a high-performance, closed cell, rigid foam insulation material that uses air as main ingredient. EPS insulation resists moisture and mold/fungi growth with low environmental impacts, high & stable Long-Term Thermal Resistance, and good drying potential over the long service lives of buildings. Korolite® EPS Insulation for Tilt-Up applications is specifically designed to serve as an insulation layer between the fascia and structural wythes. The boards pre-marked on one side to allow for easy placement of fiberglass tilt-up ties. The marks are spaced at 16" [406mm] on center with 8" [203mm] perimeter edge distance.

Sizes: Korolite® 250 EPS Insulation for Tilt-Up is available in 4' widths x 8' lengths [1.22m x 2.44m] and various common thicknesses listed in Table 2 but can be custom ordered in any thickness between 1 and 6 inches to meet your requirements.

4. TECHNICAL DATA

Code Compliance

Refer to Airfoam's Code Compliance Research Report CCRR-0379 at www.airfoam.com/Airfoam-Code-Report-CCRR-0379.pdf
Korolite® 250 EPS insulation is third-party certified and complies with:

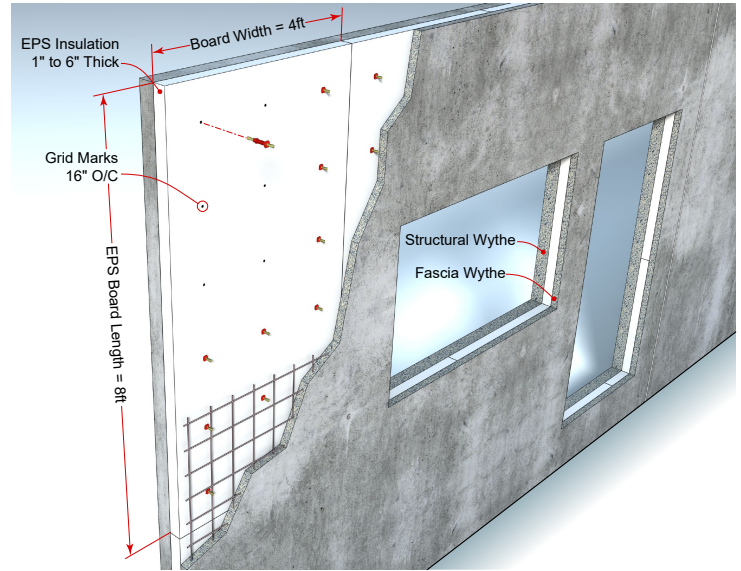
- **Thermal Insulation** Canada: CAN/ULC-S701.1 **Type 3**,
US: ASTM C578 **Type IX**, ICC-ES AC12
- **Surface Burning Characteristics:** CAN/ULC-S102.2, ASTM E84 (UL 723)

Material Properties

Korolite® 250 EPS Insulation for Tilt-Up exhibits the typical physical properties indicated in Table 1 and below when tested as represented.
Insulation values for given thicknesses are listed in Table 2.

Applicable Standards

- ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- ASTM C203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM C272 - Standard Test Method for Water Absorption of Core Materials for Sandwich Constructions
- ASTM C303 - Standard Test Method for Dimensions and Density of Preformed Block and Board—Type Thermal Insulation



- ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
- ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
- ASTM C1512 - Standard Test Method for Characterizing the Effect of Exposure to Environmental Cycling on Thermal Performance of Insulation Products
- ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics
- ASTM D2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- ASTM D2863 - Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics
- ASTM E2178 - Standard Test Method for Air Permeance of Building Materials
- ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials
- ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Material
- CAN/ULC-S101 - Standard Methods of Fire Endurance Tests of Building Construction and Materials
- CAN/ULC-S102 - Standard Method of Test for Surface Burning Characteristics of building Materials and Assemblies
- CAN/ULC-S701.1 - Standard for Thermal Insulation, Polystyrene, Boards & Pipe Covering
- ICC-ES AC12 - Foam Plastic Insulation
- NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components

TABLE 1. Korolite® 250 EPS Insulation for Tilt-Up - Material Properties

Property ¹	Units	Value	Standard	
Compressive Resistance ^{1,4}	psi	25	ASTM D1621	
Minimum @ 10% Deformation	kPa	172	Proc. A	
Thermal Resistance ^{1,2,3} minimum at mean temperatures of:				
R-value / inch thickness		25°F ⁶	4.8	ASTM C518 or C177
		40°F ⁶	4.6	
		75°F	4.27	
R _{si} / 25mm thickness		-4°C ⁶	0.83	
		4°C ⁶	0.80	
		24°C	0.74	
Water Vapor Permeance ^{1,2}	perm	2.3	ASTM E96	
Tested at 1" thickness	ng/(Pa•s•m ²)	132	desiccant	
Water Absorption ^{1,5}	USA	2	ASTM C272, 1 day	
Maximum % by volume	Canada	2	ASTM D2842, 4 days	
Dimensional Stability ¹	% linear change max.	1.5	ASTM D2126, 7 days @ 70±2°C	
EPS Flexural Strength ¹	psi	50	ASTM C203	
Minimum	kPa	345	Proc. B	

¹ The test methods used to determine the material properties provide a means of comparing different cellular plastic thermal insulations. They are intended for use in specifications, product evaluations and quality control but they are not intended to predict end-use product performance.

² Values are for 1 inch or 25mm thick samples with laminated skins intact and seams, fasteners & penetrations properly sealed. Better values will result for thicker materials.

³ R means resistance to heat flow. The higher the R-value, the greater the insulating power.

⁴ The elastic limit is between 1% and 2% strain. Compressive resistances at 10% strain are provided for applications where the intended end-use can tolerate plastic (permanent) deformation under load.

⁵ The lab-test methods for water absorption use complete submersion under a head of water for 24 or 96 hours, so the values are applicable to specific design requirements only when the end-use conditions are similar to test method requirements.

⁶ not part of all the industry consensus standards (ASTM C578, CAN/ULC-S701) and provided AS-IS solely for informational purposes.

Environment Data

EPS has much lower environmental impacts than most other foamed plastic insulation materials. The **Environmental Product Declaration (EPD)** has been certified by UL Environment and is available on www.airfoam.com.

Korolite® EPS Insulation may contain up to 30% pre-consumer recycled content. Korolite® EPS Insulation **resists mold & fungi** growth per ASTM C1338 and has no nutritional value for insects. To protect against termites place adequate physical barriers such as membranes around below-grade EPS.

Max. service temperature: Long-Term Exposure 75°C [167°F]; Intermittent Exposure 80°C [176°F].

Thermal expansion coefficient: 5-7 • 10⁻⁵/°K

Capillarity: None.

Fire Characteristics

- Limiting Oxygen Index: min. 24% per ASTM D2863. Airfoam's EPS for construction applications contains a polymeric (non-HBCD) flame-retardant modifier.

Surface Burning Characteristics

- Canada:** CAN/ULC-S102.2: Flame-Spread Rating ≤295, Smoke Developed Classification over 500.
- USA:** ASTM E84 (UL 723)^a: FSI ≤25, SDI ≤450 up to 6" thick.

^a Ceiling measurement only, conducted through determination of flame spread index and smoke-developed index with the removal of any contribution of molten materials ignited on the floor of the Steiner tunnel.

Fire Protection

CAUTION: This product is combustible. Keep away from high heat and ignition sources. A protective barrier or a thermal barrier is required as specified in the appropriate building code.

¼ Hour Fire Rating for a Composite Wall Assembly with EPS c.i. (Continuous Insulation) per **CAN/ULC-S101, ASTM E119**, see Design No. CPIA/CWP 45-01.

Meets **NFPA 285** with specific limitations for an exterior wall assembly.

For more information consult Airfoam's CCRR-0379 at www.airfoam.com/Airfoam-Code-Report-CCRR-0379.pdf, your engineer, local building department or call Airfoam at 800.663.8162.

Solubility & Incompatibility

Insoluble in water and in general chemically inert. EPS dissolves in hydrocarbons (e.g. fuels, oils, tar), organic solvents (e.g. acetone/ketones, benzene, paint thinner), ethers, esters, aldehydes and amines.

5. INSTALLATION

Follow the Korolite® EPS Installation Guide available at www.airfoam.com.

Install Korolite® EPS Insulation in compliance with all applicable building codes. EPS insulation is easy to handle and install and can be cut with a utility knife or any sharp blade. Butt edges and ends tightly to adjacent boards. Ensure compatibility of any other product (such as adhesives, tapes, coatings or finishes) with Expanded Polystyrene. Korolite® EPS Insulation is a non-structural material. Korolite® EPS Insulation shall only be placed into an assembly where the moisture transport mechanisms are well understood and determined to be acceptable in accordance with accepted engineering practice (e.g. current ASHRAE Handbook of Fundamentals).

For safe handling and storage information refer to the Safety Data Sheet (SDS) at www.airfoam.com/SDS.pdf or request a printed copy.

GHS Classification: Non-Hazardous

UV-Light Degradation: Korolite® EPS Insulation can be exposed to direct sunlight for a few weeks. Prolonged exposure to ultraviolet light creates a thin film of yellow dust on the surface of EPS products which has negligible impact on the products' properties but may require removal before adhering other materials such as stucco or self-adhesive membranes.

Please contact us for a free estimate or additional information: www.airfoam.com

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TABLE 2. Korolite® 250 EPS for Tilt-Up - Thermal Resistance by Thickness

Material Thickness	Performance @ 40°F [4°C]*		Minimum @ 75°F [24°C]*	
	R-Value ft²•hr•°F/BTU	R _{si} (m²•°C)/W	R-Value ft²•hr•°F/BTU	R _{si} (m²•°C)/W
1.08" 27.4mm	5.0	0.86	4.61	0.80
2.16" 54.9mm	9.9	1.73	9.22	1.60
3.24" 82.3mm	14.9	2.59	13.8	2.40

* Mean temperatures of the insulation, Minimum only applies when running air conditioning.

6. AVAILABILITY

Korolite® 250 EPS Insulation for Tilt-Up is supplied from Surrey BC through our extensive distribution network. For product availability or to get in touch with your local distributor, call Airfoam at 800.663.8162 or +1.604.534.8626.

7. WARRANTY

Airfoam offers a limited product warranty for defective products. Please visit www.airfoam.com/terms for Terms and Conditions of Sale.

8. MAINTENANCE

No maintenance is required in normal use. EPS insulation that became wet can be dried out within reasonable times per ASTM C1512 tests using adequate drainage and/or ventilation.

9. TECHNICAL SERVICES

Airfoam can provide technical information and support to help address questions when using Korolite® EPS Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, contact Airfoam at:

Online: www.airfoam.com/EPS-Insulation-Support.php

Phone: 800.663.8162 or +1.604.534.8626

Fax: +1.604.534.1212

10. FILING SYSTEM

Korolite® 250 EPS Insulation for Tilt-Up Technical Specifications are filed at: www.airfoam.com



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