

## CANADA

R-Shield expanded polystyrene insulation is a closed cell, moisture resistant rigid foam used for all types of construction applications. R-Shield insulation meets or exceeds the requirements of CAN/ULC-S701.1, “Standard for Thermal Insulation, Polystyrene Boards”.

R-Shield insulation is manufactured under an industry leading quality control program monitored by UL.



R-SHIELD INSULATION PROPERTIES				
Property		CAN/ULC-S701		
		Type 1	Type 2	Type 3
Density, Nominal ASTM C303	kg/m <sup>3</sup>	16	24	32
Thermal Resistance <sup>1</sup> @ 24°C, min. ASTM C518	m <sup>2</sup> .°C/W	0.65	0.70	0.74
Compressive Strength, min. ASTM D1621	kPa	70	110	140
Flexural Strength, min. ASTM C203, Procedure B	kPa	170	240	300
Water Vapor Permeance <sup>1</sup> , max. ASTM E96	ng/Pa.s.m <sup>2</sup>	300	200	130
Water Absorption, max. ASTM D2842	volume %	6.0	4.0	2.0
Dimensional Stability, max. ASTM D2126	% linear change	1.5	1.5	1.5
Limiting Oxygen Index <sup>2</sup> , min. ASTM D2863	%	24	24	24

<sup>1</sup>For 25 mm thick material.

<sup>2</sup>Flame Spread rating of 210 and a Smoke Developed rating of greater than 500 for thickness of 25 mm - 100 mm UL Classified in accordance with CAN/ULC-S102.

## **Thermal Performance.**

The R-value of R-Shield insulation remains constant and does not suffer from R-value loss. The closed cell structure of R-Shield insulation contains air and not blowing agents which deplete over time.

## **Exposure to Water and Water Vapor.**

The mechanical properties of expanded polystyrene are unaffected by moisture. Exposure to water or water vapor does not cause swelling.

## **Temperature Exposure/Flame Retardants.**

Expanded polystyrene is able to withstand the rigors of temperature cycling, assuring long-term performance.

Although flame retardants used in the manufacture of expanded polystyrene provide an important margin of safety, all expanded polystyrene products must be considered combustible.

The maximum recommended long-term exposure temperature for R-Shield insulation is 165°F (74°C).

## **Weathering.**

Long-term exposure to sunlight causes yellowing and a slight embrittlement of the surface due to ultraviolet light. This has little effect on mechanical properties. If stored outdoors, cover expanded polystyrene with opaque polyethylene film, tarps, or similar material.

## **Termite Resistant.**

Foam plastic insulations have been shown to become termite infested under certain exposure conditions. R-Shield insulation provides resistance to termite infestation. Please review literature on R-Shield insulation with termite resistance for complete information.

## **Resistance to Mold and Mildew.**

Expanded polystyrene will not decompose and will not support mold or mildew growth. Expanded polystyrene provides no nutrient value to plants or animals.

## **Adhesives, Coatings, and Chemicals.**

Solvents which attack expanded polystyrene include esters, ketones, ethers, aromatic, and aliphatic hydrocarbons and their emulsions, among others. If expanded polystyrene is to be placed in contact with materials (or their vapors) of unknown composition, pretest for compatibility at maximum exposure temperature.

Do not install or use expanded polystyrene with coal tar pitch, highly solvent-extended mastics, or solvent-based adhesives without adequate separation.

## **Warranty.**

Premier Building Systems offers a product warranty ensuring thermal performance, physical properties, and termite resistance.

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