R-SHIELD® RIGID INSULATION

TECH DATA

COOLER AND FREEZER

R-Shield® expanded polystyrene insulation is a closed cell, moisture resistant rigid foam used for all types of cooler and freezer applications. R-Shield insulation conforms to ASTM C578, "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation".

R-Shield insulation is manufactured under an industry leading quality control program monitored by UL and further recognized in UL Evaluation Report UL ER40361-01 and ICC ESR-4743.

PRODUCT			R-SHIELD® RIGID INSULATION					
			100	130	150	250	400	600
Compressive Strength[1,2] @ 10% deformation, min. ASTM D1621		psi (kPa)	10 (69)	13 (90)	15 (104)	25 (173)	40 (276)	60 (414)
R-value[1], Thermal Resistance, per inch, ASTM C518	20°F	°F·ft²·h/Btu (°K·m²/W)	4.4 (0.77)	4.5 (0.80)	4.8 (0.85)	5.0 (0.88)	5.0 (0.88)	5.1 (0.90)
	55°F	°F·ft²·h/Btu (°K·m²/W)	4.0 (0.71)	4.1 (0.72)	4.4 (0.77)	4.6 (0.81)	4.6 (0.81)	4.7 (0.83)
Density, Nominal ASTM C303		lb/ft³ (kg/m³)	1.0 (16)	1.25 (20)	1.5 (24)	2.0 (32)	2.5 (40)	3.0 (48)
Flexural Strength[1], min. ASTM C203		psi (kPa)	25 (173)	30 (208)	35 (242)	50 (345)	60 (414)	75 (517)
Water Vapor Permeance[1] of 1.0 in. thickness, max., perm ASTM E96			5.0	3.5	3.5	2.5	2.5	2.5
Water Absorption[1] by total immersion, max., volume % ASTM C272			4.0	3.0	3.0	2.0	2.0	2.0
Flame Spread ASTM E84			<25	<25	<25	<25	<25	<25
Smoke Developed ASTM E84			<450	<450	<450	<450	<450	<450
ASTM C578 Compliance, Type			I	VIII	II	IX	XIV	XV

[1] Please refer to ASTM C578 specification for complete information.

[2] Compressive strength is measured at 10 percent in accordance with ASTM C578. A safety factor is required to prevent long-term creep for sustained loads. For static loads, a safety factor of 3:1 is recommended.

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^{0}F (74^{0}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.

A PRODUCT OF PREMIER® BUILDING SYSTEMS

R-SHIELD® RIGID INSULATION

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