

## Product Name.

R-Shield® MAX 250 Insulation Powered by Graphite

## Product Description.

R-Shield MAX is a next generation insulation product with a maximum R-value powered by graphite. R-Shield MAX is a premium grade insulation manufactured to provide architects, specifiers, distributors, and contractors all the features and benefits inherent in a high quality insulation.

**R-value** – R-Shield MAX 250 has a maximum R-value that never changes over time.

**Strength** – R-Shield MAX 250 has a high compressive strength of 25 psi.

**Moisture Resistance** – R-Shield MAX 250 is a closed cell polystyrene insulation and is resistant to moisture gain.

**Vapor Permeable** – R-Shield MAX 250 allows moisture vapor to move through its structure.

**Drying Potential** – R-Shield MAX 250 rapidly releases absorbed moisture.

Applications.

- Cavity Wall
- Wall Sheathing
- Precast Concrete Core
- Flat/Tapered Roofing
- Plaza Deck/Vegetative Green Roof
- Perimeter/Underslab
- Drainage Board
- Waterproofing Protection

## Powered by Graphite

R-Shield MAX is comprised of many small pockets of air within a polymer matrix containing graphite. The graphite reflects radiant heat energy like a mirror, increasing the material's resistance to heat flow or R-value.

## Technical Data.

### Applicable Standards.

R-Shield MAX 250 meets ASTM C578, Type IX, "Standard Specification for Rigid Cellular Polystyrene Thermal Insulation". Applicable standards include:

- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
- ASTM C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- ASTM D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

## Code Compliances.

R-Shield MAX 250 is manufactured under an industry leading quality control program monitored by UL and further recognized in UL Evaluation Report UL ER40361-01.



R-Shield MAX 250 Insulation complies with the following codes:

International Residential Code (IRC)

International Building Code (IBC)

Underwriters Laboratories, Inc. (UL) Classified, see UL certificate.

### R-value.

R-Shield MAX has air in its closed cells and therefore has a stable R-value. Many other insulations use blowing agents that cause R-value loss and are harmful to the environment.

As temperatures drop, the R-value of R-Shield MAX increases significantly. Many other insulations lose R-value at low temperatures.

## Physical Properties of R-Shield MAX 250.

Property and Test Method		Value
Compressive Strength <sup>1,2</sup> @ 10% deformation, min., ASTM D1621		psi (kPa) 25 (173)
R-value <sup>1,3</sup> , Thermal Resistance, ASTM C518	40°F	°F·ft <sup>2</sup> ·h/Btu (°K·m <sup>2</sup> /W) 5.3 (0.93)
	75°F	°F·ft <sup>2</sup> ·h/Btu (°K·m <sup>2</sup> /W) 5.0 (0.88)
Flexural Strength <sup>1</sup> , min., ASTM C203		psi (kPa) 50 (345)
Water Vapor Permeance <sup>1</sup> of 1.0 in. thickness, max., perm, ASTM E96		2.5
Water Absorption <sup>4</sup> volume % ASTM C272		0.3
Flame Spread Index, ASTM E84		<25
Smoke Developed Index, ASTM E84		<450
Maximum Use Temperature		165 °F (74 °C)
ASTM C578 Compliance, Type		IX

<sup>1</sup> Please refer to ASTM C578 specification for complete information.

<sup>2</sup> 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.

<sup>3</sup> R-values are based on 1-1/8" thickness.

<sup>4</sup> ASTM C272 24 hour immersion followed by 24 hour storage in 75°F/50%RH air.

## Product and Packaging Data.

Product	Product Dimensions Thickness (in) x Width (in) x Length (in)	Pieces per Unit	Unit Dimensions (typical) Width (ft)x Length (ft) x Height (ft)	Square feet per Unit	Board feet per Unit
R-5	1 1/16 x 48 x 96	96	4 x 8 x 8.75	3072	3264
R-7.5	1 5/8 x 48 x 96	72	4 x 8 x 8.75	2304	3264
R-10	2 1/8 x 48 x 96	48	4 x 8 x 8.75	1536	3264

Standard R-15, R-20, or R-30 and custom thicknesses are also available to meet any R-value specifications.

### Installation.

R-Shield MAX boards are easy to handle, cut using a utility knife or serrated blade, and install.

R-Shield MAX is available factory scored and can be field snapped to produce 16", 24", and 48" widths.

### Moisture Resistance.

R-Shield MAX is manufactured to resist moisture absorption in wetting conditions and release absorbed moisture quickly during drying periods, which means R-Shield MAX maintains R-value. The drying potential of R-Shield MAX sets it apart from other insulation materials.

### Product Protection.

R-Shield MAX can be damaged by prolonged direct sunlight exposure or by reflected sunlight. R-Shield MAX must be protected during storage, transportation, and at the project with a light colored opaque material. Please refer to the R-Shield MAX Handling Instructions.

### Flame Retardants.

Although flame retardants present in R-Shield MAX provide an important margin of safety, all R-Shield MAX products must be considered combustible.

A protective barrier or thermal barrier is required as specified in the appropriate building code.

### Temperature Exposure.

R-Shield MAX is able to withstand the rigors of temperature cycling, assuring long-term performance. The maximum recommended long-term exposure temperature for R-Shield MAX is 165°F (74°C).

### Termite Resistant.

R-Shield MAX is available factory treated with a proven and safe additive that effectively resists termites.

### Warranty.

R-Shield MAX is covered by a 50 year limited warranty ensuring thermal performance

### Product Availability and Support.

R-Shield MAX is supported by a team of experts who work with you to answer your questions, offer solutions, and do everything they can to make sure your project goes smoothly and ends successfully.

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