



R-Control® EPS



R-Control EPS

(expanded polystyrene) rigid board insulation is for all types of R-Control construction. R-Control EPS is manufactured in conformance with the following standard.

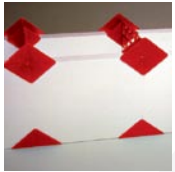
- ASTM C 578 (Thermal Insulation)
- ASTM D 6817 (Geofoam)
- ASTM E 2430 (EIFS boards)



Environmental Advantages

R-Control EPS Insulation...

- Inert, non-nutritive, highly stable
- Contains no CFC, HCFC, or HFC
- Contains no formaldehyde
- Can be recycled



Strength and Thermal Performance

Cost effective thermal design is among the highest priorities in construction. R-Control EPS insulation products are available in a range of densities necessary to provide both thermal resistance (R-value), structural integrity, and cost effectiveness. Other rigid insulation products fail to provide this design flexibility due to limited density availability, and therefore R-Control EPS provides optimum value when compared to other rigid insulations of the same R-value design.



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Exposure to Water and Water Vapor

The mechanical properties of EPS are unaffected by moisture. Exposure to water or water vapor does not cause swelling. If condensation occurs within a system due to design and end-use conditions, thermal efficiency will decrease. Upon drying, full efficiency is restored.

Adhesives, Coatings and Chemicals

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

Resistance to Termites

Foam plastic insulations have been shown to become termite infested under certain exposure conditions. In response, R-Control Building Systems developed Perform Guard® EPS which provides resistance to termites. Please review literature on Perform Guard® for complete information.



EPS provides no nutrient value to plants, animals, and microorganisms. Therefore, bacteria and fungi do not multiply; EPS will not decompose and is highly resistant to mildew.

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 EPS with light-colored, polyethylene film or tarpaulins.

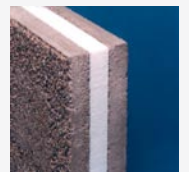
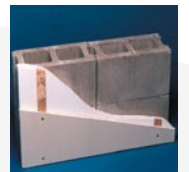
Temperature Exposure/ Flame Retardance

The maximum recommended use temperature for R-Control EPS is 165°F (75°C).

Although flame retardants used in the manufacture of EPS provide an important margin of safety, all EPS products must be considered combustible. Tests have demonstrated that the products of combustion for EPS are carbon monoxide and carbon dioxide, and at concentrations far less than those given off by equal volumes of wood products. The heat of combustion for R-Control EPS is less than 18,000 Btu/lb.

Thermal Barrier

The term "thermal barrier" refers to a fire resistant covering or coating which separates EPS from the building interior. Commonly used thermal barriers, all subject to building code approval, include gypsum board, gypsum or cement plasters, perlite board, spray-applied cellulose, mineral fiber or gypsum coatings, and select plywoods.



R-Control EPS Properties^{1,2,3}

Property		Type XI	Type I	Type VIII	Type II	Type IX	Type XIV
Nominal Density	lb/ft ³ (kg/m ³)	0.75 (12)	1.00 (16)	1.25 (20)	1.50 (24)	2.00 (32)	NA
Density ¹ , min.	lb/ft ³ (kg/m ³)	0.70 (12)	0.90 (15)	1.15 (18)	1.35 (22)	1.80 (29)	2.40 (38)
Design Thermal Resistance per 1.0 in. thickness	75°F °F·ft ² ·h/Btu (°K·m ² /W)	3.22 (0.57)	3.85 (0.68)	3.92 (0.69)	4.17 (0.73)	4.35 (0.77)	4.35 (0.77)
	40°F °F·ft ² ·h/Btu (°K·m ² /W)	3.43 (0.60)	4.17 (0.73)	4.25 (0.75)	4.55 (0.80)	4.76 (0.84)	4.76 (0.84)
Thermal Resistance ¹ , min per 1.0 in. thickness	75°F °F·ft ² ·h/Btu (°K·m ² /W)	3.10 (0.55)	3.60 (0.63)	3.80 (0.67)	4.00 (0.70)	4.20 (0.74)	4.20 (0.74)
	40°F °F·ft ² ·h/Btu (°K·m ² /W)	3.30 (0.58)	4.00 (0.70)	4.20 (0.74)	4.40 (0.77)	4.60 (0.81)	4.60 (0.81)
Compressive Strength ¹ @ 10% deformation, min.	psi (kPa)	5.0 (35)	10.0 (69)	13.0 (90)	15.0 (104)	25.0 (173)	40.0 (256)
Flexural Strength ¹ , min.	psi (kPa)	10.0 (69)	25.0 (173)	30.0 (208)	35.0 (242)	50.0 (345)	60.0 (414)
Water Vapor Permeance ¹ of 1.0 in. thickness, max., perm		5.0	5.0	3.5	3.5	2.5	2.5
Water Absorption ¹ by total immersion, max., volume %		4.0	4.0	3.0	3.0	2.0	2.0
Oxygen Index ¹ , min., volume %		24.0	24.0	24.0	24.0	24.0	24.0
Flame Spread ⁴		20	20	20	20	20	See note ⁵
Smoke Developed ⁴		150-300	150-300	150-300	150-300	150-300	See note ⁵

¹ See ASTM C 578 Standard Specification for complete information

² See ASTM E 2430 Standard Specification for Exterior Insulation and Finish Systems board requirements

³ See ASTM D 6817 Standard Specification for EPS Geofoam properties

⁴ See UL Certificate AFM-1 available from R-Control Building Systems

⁵ Contact R-Control Building Systems for information

Quality Assurance

All R-Control EPS products are made to the exacting standards of our industry-leading Quality Control Program, monitored by Underwriters Laboratories Inc.® and recognized by national code and regulatory bodies.

Warranty

R-Control Building Systems offers a product warranty ensuring thermal performance. For complete details, please contact your R-Control Building Systems supplier.

Industry Affiliations:

EPSMA, NAHB, NRCA,
AIA, SIPA, ICFA, SPRI



R-Control Building Systems

(800) 255-0176 General Information

(800) 255-3908 Technical Information

www.r-control.com

Availability

R-Control Building Systems is North America's largest provider of Expanded Polystyrene (EPS) Insulation Products and Systems with licensed facilities located throughout North America and the world. Please contact your R-Control Building Systems supplier for design consultation, availability and pricing.