

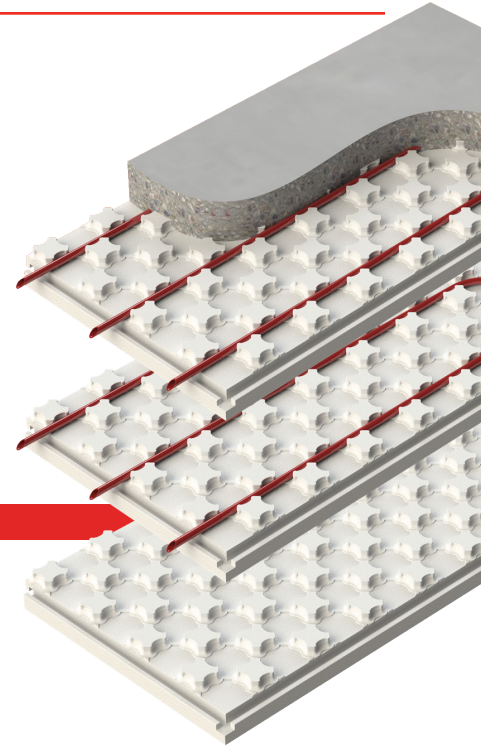


The Advanced Radiant Floor Panel System

Made with high density expanded polystyrene (EPS) designed to support the weight of cast-in-place concrete, and foot traffic during construction. The staggered nodules provide a simple and efficient system for tube installation, while ensuring a tight fit, and proper tube alignment. The nodules create a tube channel that accommodates multi-directional placement of 1/2" (13 mm) or 5/8" (16 mm) I.D. tubing, with 3" (914 mm) on-center points. Manufactured in 2ft x 4ft (610 x 1220 mm) panels with interlocking edges to ensure a stable fit between panel joints. Panels are available in a variety of thicknesses.

BASIC USE

- Under concrete slabs
- Radiant floor heating
- Sandwich slab construction
- Snow melt systems
- Retrofit & overlay applications
- Interior above-grade wall
- Interior foundation
- Above slab



Product Features



Stable long term thermal resistance (R4.7 per inch (25.4mm))



Environmentally responsible



Durable



Vapor Retarder

Environmental & Sustainability

- Produced without the use of chlorofluorocarbon (CFCs), hydrochlorofluorocarbon (HCFCs) or formaldehyde. As a result, Heat-Sheet will not produce harmful emissions to the environment.

Performance Criteria

			Type II	Type IX	Type XIV	Type XIV	Type 2	Type 3	Type 3	Type 3
PROPERTIES		COMPLIANCE	ASTM C578				CAN/ULC S701			
Thermal Resistant	At 75°F (24°C)	ASTM C518 (CAN/ULC S701)	See Sizes							
PHYSICAL	Compressive Resistance min.	ASTM D1621	16 ^a	25 ^a	40 ^a	60 ^a	110 ^a	140 ^a	276 ^a	414 ^a
	Flexural Resistance min.	ASTM C203	35	50	60	>60	240	300	>300	>300
	Dimensional Stability max.	ASTM D2126	2	2	2	2	1.5	1.5	1.5	1.5
MOISTURE	Water Vapor Permeance max.	ASTM E96	3.5 perms ^b	2.5 perms ^b	2.5 perms ^b	2.5 perms ^b	200 ng/Pa·s·m ²	130 ng/Pa·s·m ^{2b}	130 ng/Pa·s·m ^{2b}	130 ng/Pa·s·m ^{2b}
	Water Absorption max.	ASTM C272	3	2	2	2	4	2	2	2
FIRE	Flame Spread Index max.	ASTM E84 (CAN/ULC S102.2)	<25 (<230)							
	Smoke Developed Index max.		<450 (>500)							
	Thickness max.		4" (102mm)							
	Density max.		2.2 pcf (35 kg/m ³)							
	Oxygen Index min.	ASTM D2863	24	24	24	24	24	24	24	24

a. Compressive strengths up to 60 psi (414 kPa) are available.

b. Additional vapor barrier/retarder may not be required depending on nominal panel thickness.



THE ADVANCED RADIANT FLOOR PANEL
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HEAT-SHEET® MATERIAL PROPERTY DATA SHEET

Technical Information

Products are made of combustible materials and may need to be protected from high heat sources. In addition, a thermal barrier may be required when used in the interior of a building. Refer to your local building codes for appropriate protection and thermal barrier requirements.

Made with Type 2 or 3 expanded Polystyrene (EPS), per CAN/ULC S701. And Type II, IX or XIV EPS, per ASTM C578. However, compressive strengths between 16 psi and 60 psi are available.

Meets vapor barrier/retarder requirements in accordance with the National Building Code of Canada, and the International Residential Code. Confirm with local bylaws.

Resists compressive creep and shrinkage. Predicted maximum creep strains of 2.0% (less than 50 yrs) provided compressive stress does not exceed 35% of compressive resistance (Prediction of Creep Strain of the Expanded Polystyrene (EPS) in Long-term Compression," ISSN 1392-1320 MATERIALS SCIENCE (MEDŽIAGOTYRA). Vol. 13, No. 4. 2007)

Sizes

Screed volume rates: To top of Heat-Sheet nodules = 0.043 ft³/ft²
For each additional inch of slab = 0.083 ft³/ft²

Product	Nominal Panel Thickness ¹	Overall Thickness ²	Average R-value ³	Panels/Bundle ⁷	Sqft/Bundle ⁷
HS-R4 ⁴	0.5"	1 3/8"	4	16	128
HS-R6 ⁴	1.0"	1 7/8"	6	14	112
HS-R8	1.5"	2 3/8"	8	8	64
HS-R10 ^{5,6}	2.0"	2 7/8"	10	8	64
HS-R12 ^{5,6}	2.5"	3 3/8"	12	6	48
HS-R14 ^{5,6}	3.0"	3 7/8"	14	6	48
HS-R16.1 ^{5,6,8}	3.0"	3 7/8"	16.1	6	48
HS-R20 ^{5,6}	4 3/8"	5 1/4"	20	6	48

1. Refers to thickness of the panel minus the nodules (grid height per image shown).
2. Refers to thickness of nodule plus nominal panel thickness.
3. In accordance with ASTM C578, and CAN/ULC S701, at 75°F (24°C). R-value is determined based on weighted average R-value of nodule and panel profile.
4. These panels do not interlock, and are designed to be applied only over flat surfaces such as concrete slabs and wood subfloors.
5. Additional vapor barrier may not be required when using Type 3 EPS, per CAN/ULC S701, and the National Building Code of Canada.
6. Additional vapor retarder may not be required when using Type IX or XIV EPS, per ASTM C578, and the International Residential Code. Confirm with your local building official prior to use.
7. Panels per bundle may vary. Contact your local Heat-Sheet representative to confirm.
8. Made with Graphite Polystyrene (GPS) to provide an incremental R-2.1.
9. Custom orders may be available upon request. Confirm availability of all Heat-Sheet products with your local supplier.

Manufacturers

AMC Foam Technologies Inc.
35 Headingley St.
Headingley Manitoba, R4H 0A8
877-789-762

Beaver Thermal Solutions Inc.
11581-272 St.
Acheson, Alberta, T7X 6E9
888-453-5961
#215-44393 Simpson Rd.
Chilliwack, BC V2R 5M3
888.453.5961

Form Systems, Inc.
330 Cain Drive
Haysville, Kansas 67060
1-888.838.5038

Perma R Products Inc.
2604 Sunset Dr.
Grenada, MS, 38901
800-647-6130

106 Perma R Rd.
Johnson City, TN, 37604
800-647-6130

Progressive Foam Technologies
1 Southern Gateway Dr.
Gnadenhutten, OH, 44629
800-860-3626

Applicable Standards

ASTM C578	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
ASTM C518	Standard Test Method for Steady-state Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
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 D2842	Standard Test Method for Water Absorption of Rigid Cellular Plastics.
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials.
ASTM E96	Standard Test Methods for Water Vapor Transmission of Materials.
ASTM C203	Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.
ASTM C303	Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation.
ASTM D2863	Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index).
CAN/ULC-S701	Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
CAN/ULC S102.2	Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.

Packaging

Heat-sheet packaging and bundle sizes vary. Please contact your local Heat-sheet manufacturer or dealer to confirm your local packaging specifications and available bundle sizes.

Disclaimer of Liability

References to "Logix Brands" or the "Company" mean the manufacturer selling the Products to Owner (the "Manufacturer") unless otherwise expressly noted. The Owner assumes all risks as to the use of the material. As the Manufacturer has no control over installation design and workmanship, accessory materials or application conditions, the Manufacturer does not warranty the performance or results of any installation containing the Products. The Products must be handled and installed according to the instructions outlined in the applicable Product installation guide and used only for the particular purposes recommended in the Heat-sheet literature available on www.heat-sheet.com.

Technical Support

For North American technical inquires please contact techdept@logixbrands.com

Code Evaluation Approvals

- CCMC 14007-L
- QAI Certification Listing No. B1031-2



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