

TECHNICAL DATA SHEET 260-1.1

07.21.13.13

Manufacturer

ISORAD is manufactured by Isofoam Group, a premier manufacturer of insulation products for over 40 years.

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Product Description & Applications

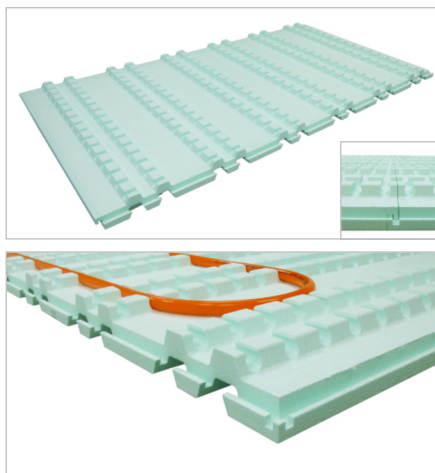
ISORAD is a rigid high-density expanded polystyrene insulation panel, with raised unidirectional grooves for large size tubing retention and a 4-sided interlocking system. Designed for hydronic heating floor insulation.

Mainly intended for large surfaces of new construction and commercial, industrial or agricultural buildings when a radiant heating system embedded in concrete is installed.

Concrete slab - large surface	<ul style="list-style-type: none"> – Provides continuous and uniform underslab insulation. – 4-sided interlocking system. Installation timeliness and effectiveness on jobsites. – Elevated grooves system for excellent large size tubing retention. – Unidirectional tubing installation. Ensures regular spacing between tubing. – Eliminates wire mesh when required to attach tubing only. – Make tubing installation of a hot water or glycol system easier.
Parking and sidewalks	<ul style="list-style-type: none"> – Can also be used for underslab hydronic heating floors, but also for sidewalks and outdoor parking lots to accelerate melting of ice and snow.

Dimensions

ISORAD insulation makes the installation of an hydronic heating system requiring 3/4" or 1" diameter tubing faster and easier.



ISORAD						
Dimension	Thicknesses	Tube Size	R Value (RSI)			
			ISORAD 200		ISORAD 300	
48" x 96" 4-sided interlocking system	1 13/16" (overall : 3 1/16")	3/4"	R7.6	(1.34)	R7.7	(1.35)
		1"				
	2 7/16" (overall : 3 11/16")	3/4"	R10.2	(1.8)	R10.3	(1.82)
		1"				

Tube 3/4": Ø int. 3/4", Ø ext. 7/8" | Tube 1": Ø int. 1", Ø ext. 1 1/8"

Also available : 48" x 48", other thicknesses and compressive strengths.

For more details on 1/2" or 5/8" multidirectional tubing installation, please refer to the **ISORAD V2 R3•R5 or R10•R15** respective Technical Data Sheets.

Environment

Containing between 95% and 98% air and only 2% to 5% of plastics, ISORAD presents risks of toxicity lower than those from conventional building materials and it does not contain HFCs that damage the ozone layer. Contains no gas in its manufacture other than air.

ISORAD has been certified to meet the third-party chemical emissions standards for **UL-GREENGUARD** and **UL-GREENGUARD Gold** Certifications (UL.COM/GG). Isofoam Group products can also contribute to obtaining LEED® credits. Contact us for more details.

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Warranty & Certifications

Meets these standards and requirements:

- CAN/ULC-S701, Type 2 (ISORAD 200), Type 3 (ISORAD 300)
- CCMC #12895-L (ISORAD 200), CCMC #13638-L (ISORAD 300)
- CAN/CSA-B214, Installation Code for Hydronic Heating Systems, R Value required
- GREENGUARD - UL 2818, GREENGUARD Gold - UL 2818

Advantages & Benefits

- Reduces the cost of an hydronic floor heating system installation, as well as the number of components and steps required to install it.
- Raised grooves to make large size tubing installation for hot water or glycol floor heating systems easier. Ensures regular spacing between tubing.
- 4-sided interlocking system keeps panels together when installed. Provides continuous insulation.
- Optimal sizes to minimize handling time.
- Stable and permanent R Value insulation.
- No gas is used in the manufacturing process, but only air.
- Long term stability, even when exposed to extreme freeze-thaw conditions. Low water absorption and high drying potential.
- High compressive strength : 20 or 30 psi.

Installation

Installation of **ISORAD** involves laying the insulation and the tubing before pouring the concrete that is required to cover the heating system.

- A minimum of 3" of concrete above the raised grooves is required. Please refer to the applicable building codes requirements and identify the thickness needed for application loads.
- The tubes must be completely embedded in the concrete.
- The raised grooves system allows the installation of tubes of 3/4" or 1" diameter, as well as spacing every 3".
- Spacing between tubing must be determined by the heating system professional and according to the needs of the building to ensure its performance.
- Panels must have a solid base and be well supported.
- Staples may be needed to maintain tubing in place in some places.

Please refer to applicable building codes and requirements, as well as the energy efficiency you wish to achieve to determine insulating value of the product to choose.

Physical Properties

Insulation Panels	METHODS	UNITS	ISORAD 200	ISORAD 300
THERMAL RESISTANCE	ASTM C-518	m ² •°C/W/25 mm (hrc•ft ² •°F/Btu/in)	0.74 (4.2)	0.75 (4.25)
RÉSISTANCE EN COMPRESSION MIN.	ASTM D-1621	kPa (psi)	140 (20)	210 (30)
FLEXURAL STRENGTH MIN.	ASTM C-203	kPa (psi)	270 (39)	350 (50)
WATER VAPOR TRANSMISSION MAX.	ASTM E-96	ng/Pa•s•m ² (perm)	130 (2.3)	130 (2.3)
WATER ABSORPTION MAX.	ASTM D-2842	%	2.0	1.8
DIMENSIONAL STABILITY MAX.	ASTM D-2126	%	0.5	0.5
COEFFICIENT OF THERMAL EXPANSION	ASTM D-696	mm/mm/°C (in/in/°F)	6 X 10 ⁻⁵ (3.5 X 10 ⁻⁵)	6 X 10 ⁻⁵ (3.5 X 10 ⁻⁵)
EFFECTIVE TEMPERATURE RANGE MAX.	CONTINUOUS	°C (°F)	75 (167)	75 (167)
	INTERMITTENT	°C (°F)	82 (180)	82 (180)
FLAME SPREAD	CAN/ULC S102.2M	-	240	240

The product contains a flame retardant.

The Material Safety Data Sheet of Isofoam Group products is available on the website.

Technical Services

Our experts will be pleased to answer your questions regarding application and installation of our products.

Availability & Cost

Availability: Throughout eastern Canada.

Costs : Current price list available on request.

Project estimations are rapidly available with a physical description made from industrial designs and summary specifications based on information in this technical data sheet.

Limitations & Storage

Combustible material. Inside, a protective barrier or thermal barrier is required as specified by the appropriate building code. Avoid contact between insulation and petroleum-based solvents or their vapours.

Expanded polystyrene insulation is not sensitive to water. Panels can be stored outdoors. Rain, snow and moisture are not a concern before or during construction.

Avoid prolonged exposure to ultraviolet light which may cause discolouration of the product.