TECHNICAL DATA SHEET 250-2.1

07.21.13.13

Manufacturer

ISORAD V2 is manufactured by Isolofoam Group, a premier manufacturer of insulation products for over 40 years.

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Product Description & Applications

ISORAD V2 is a rigid expanded polystyrene insulation panel with a multidirectional tube retaining system and a 4-sided interlocking system designed for hydronic radiant floor heating insulation.

R3 and **R5** versions are primarily intended for new construction of residential, multi-units and commercial buildings when a radiant heating system's tubing embedded in concrete is installed on upper storey floors.

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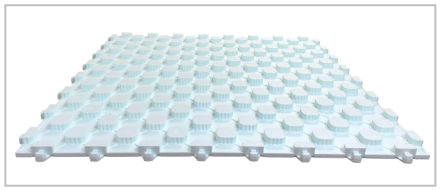
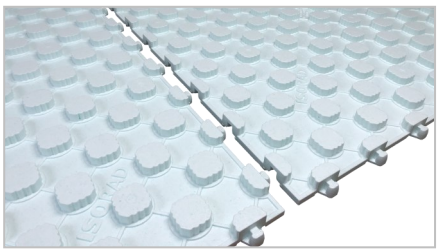
Upper storey floor	– Thin configuration to maintain ceiling height. – Can be installed on a concrete slab or on a wooden subfloor designed for this purpose. – Provides continuous and uniform insulation for maximum heating system performance. – Contributes to the soundproofing of the slab by uncoupling the radiant slab. – Eliminates the need for wire mesh and plastic grid when required to attach tubing only. – Make tubing installation easier and faster.

Dimensions

ISORAD V2 insulation panels facilitate installation of 1/2" or 5/8" tubes.





ISORAD V2 | R3 • R5

Dimensions	Thicknesses	R Value (RSI)	
48" x 48" **Interlock 4 sides**	1/2" (overall 1 1/2")	3	(0.53)
	1" (overall 2")	5	(0.88)

1/2" tube: Ø int. 1/2", Ø ext. 5/8" | 5/8" tube: Ø int. 5/8", Ø ext. 3/4"

For slab on grade or under slab radiant floor heating insulation, please refer to the **ISORAD V2 | R10 • R15** Technical Data Sheet.

Environment

Containing between 95% and 98% air and only 2% to 5% of plastics, **ISORAD V2** 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 V2 has been certified to meet the third-party chemical emissions standards for **UL-GREENGUARD** and **UL-GREENGUARD Gold** Certifications **(UL.COM/GG)**. Isolofoam Group products can also contribute to obtaining LEED® credits. Contact us for more details.

Illustrations for information purposes only. The actual product may differ from the illustrations.

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Warranty & Certifications

Meets these standards and requirements:

- CAN/ULC S701, Type 3
- CCMC #13638-L (ISORAD V2 300)
- CAN/CSA-B214, Installation code for hydronic heating systems, R value requirement
- GREENGUARD - UL 2818, GREENGUARD Gold - UL 2818

Advantages & Benefits

- Stable and permanent R value insulation.
- Reduces the cost of installing an hydronic floor heating system.
- Make tubing installation of a hot water or glycol floor heating system easier. Ensures regular spacing between tubing.
- Effective interlocking system prevents panels from moving when installed, ensuring continuous insulation. Allows easy and quick positioning of the panels to ensure alignment of the retaining tubing system and .
- Easy and fast insulation installation. Starting arrow and cutting lines on the back of the panel to simplify installation. Limits material waste. Can be cut with a utility knife.

Installation

The installation of **ISORAD V2** involves laying the insulation panels and tubing before pouring the concrete that is required to cover the heating system. See the installation guide for all the details.

NOTE: ISORAD V2 R3 and R5 insulation panels are primarily intended for installation on a concrete slab or wood subfloors. It is not recommended for use over rough surfaces such as crushed stone.

- A minimum of 1" of concrete above the tube retaining system is required. Consider 0.140 cubic feet per square feet. Fiber reinforced concrete is recommended.
- The tubes must be completely embedded in the concrete.
- Compatible with water or glycol systems. When an electrical system is preferred, it must be compatible with plastic insulation.
- The floor structure must have the load bearing capacity to support the loads related to the application including the concrete overload.
- The use of a polyethylene membrane is recommended to contain the concrete placement. It should be placed under the panel and raised above the concrete level.
- Panels must have a solid base and be well supported.

For installation under a concrete slab on grade or below ground level, an insulation value of R10 min. is usually required, please refer to applicable codes requirements.

Physical Properties

Insulation panel	METHODS	UNITS	ISORAD V2 300
THERMAL RESISTANCE MIN.	ASTM C-518	m^2•°C/W/25 mm (hre•ft^2•°F/Btu/in)	0.75 (4.30)
COMPRESSIVE STRENGTH MIN.	ASTM D-1621	kPa (psi)	210 (30)
FLEXURAL STRENGTH MIN.	ASTM C-203	kPa (psi)	350 (50)
WATER VAPOR TRANSMISSION MAX.	ASTM E-96	ng/Pa•s•m^2 (perms)	130 (2.3)
WATER ABSORPTION MAX.	ASTM D-2842	%	1.5
DIMENSIONAL STABILITY MAX.	ASTM D-2126	%	1.5
COEFFICIENT OF THERMAL EXPANSION MAX.	ASTM D-696	mm/mm/°C (in/in/°F)	6 X 10^{-5} (3.5 X 10^{-5})
EFFECTIVE TEMPERATURE RANGE MAX.	CONTINUOUS	°C (°F)	75 (167)
	INTERMITTENT	°C (°F)	82 (180)
FLAME SPREAD	CAN/ULC S102.2M	-	240

The product contains a flame retardant.

Material Safety Data Sheet of Isolofoam Group products 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.

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.

NOTICE: The information and data contained in the present document are offered in good faith based on information we believe to be reliable. This document contains no representations or warranties expressed or implied as to the information data or suggestions, or as to the absence or infringement of any patent or rights of third parties. Reference is made to the terms and conditions under which above mentioned products are sold. All suggestions must be adapted as to their application and consequently modified, if necessary, to conform to local conditions and materials use.

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