

ISOLOFOAM XHD SERIES

Rigid High-Density Expanded Polystyrene Insulation
Designed for applications where standards require a high compressive strength



ISOLOFOAM | XHD 200 | XHD 300 | XHD 400

Ideal for:

- Residential, commercial or industrial concrete slabs
- Exterior foundation walls
- Terraces and parking areas
- Recreation centers and skating rinks
- Roadways and lightweight fill (Geofoam)



Applications

Residential, commercial or industrial concrete slabs

- Guarantees high performance insulation under the concrete slab where greater compressive strength is needed.

Exterior foundations

- Ensures foundation walls are insulated from the outside in applications where heavy traffic is expected in proximity to the building.

Terraces and parking areas

- Maintains stability under freeze-thaw conditions.

Recreation centers and skating rinks

- Adding **ISOLOFOAM XHD** series insulation under skating rinks reduces:
 - frost penetration in the platform;
 - the cooling capacity requirements of the skating surface;
 - energy costs for continuous skating rink usage;
 - ice making and de-icing time for multi-use skating rinks.
- Prevents the slab from lifting by slowing down heat loss in the granular base and the ground.

Roadway insulation

- Used as an anti-freeze layer for roadway and railway construction.
- Helps distribute loads under roadways and bridge access routes in areas where the ground is unstable.
- Distributes loads on swampy ground through its high resistance to sagging and shearing.
- Prevents structural settlement due to its lightweight.

LEED credits

- ISOLOFOAM Group products contribute to obtaining LEED credits.

Environmental Data

Table 1 Contribution of ISOLOFOAM XHD series insulation to LEED Canada NC (V1.0), CS (V1.0) and Housing certification

Credit No.	Sustainable Strategies	Points
EAp2	Minimum Energy Performance	0
EAc1	Optimize Energy Performance	1 to 10
MR c4.1-4.2	Recycled Content	0
MR c5.1-5.2	Regional Materials	According to interpretation
IEQ c4.1	Low-Emitting Materials – Adhesives and Sealants	1
MRC2	Construction Waste Management	1 to 2
IEQ c3.2	IAQ Management Plan – Before Occupancy (option 3)	1
IEQC7.1	Thermal comfort – Conform to ASHRAE Standard 55-2004	1

Advantages and Benefits

High compressive strength

- Compressive strength varying between 140 kPa and 275 kPa.
- Ensures good absorption of building movements through its dimensional stability.

Long-life thermal efficiency

- Even when exposed to periods of intense freeze-thaw, **ISOLOFOAM XHD** series insulation helps save energy, year after year, with no loss in efficiency.

Water absorption effect

- Expanded polystyrene is often used for applications such as floating docks or lightweight fill because of its stability and durability and its tolerance to humidity and mold, as a result of its closed-cell uniform structure.
- No risk to the water table, microorganisms or small animals as the product is biologically neutral.
- When in contact with water, polystyrene retains its insulating value.

Easy to use

- Handling and installation time are minimized thanks to lightweight products that are available in a wide variety of formats and thicknesses.

A Few of Our Projects...

- **Parliament Hill, Quebec City**
Lightweight fill, embankment
- **Regional Sport and Cultural Complex**
Exterior foundation walls and skating rink insulation
- **Municipal Roadway**
Municipal roadway insulation
- **Louiseville Recreation Centre**
Skating rink insulation



Proven Products...

- Since the 1990's, Quebec Ministry of Transportation has considered expanded polystyrene as a tried and tested product for roadways. It has been used in a number of countries since the early 1960s. (Ref.: MTQ 14301)
- The Canadian Home Builders' Association has recommended expanded polystyrene as an exterior foundation insulation solution for over 40 years. The association has studied the effects of exposure to freeze-thaw cycles. **The results, after 50 freeze-thaw cycles, revealed no effect on the cellular structure of the expanded polystyrene panel and on the integrity of its structure.**
- A field study was carried out in August 2008 to evaluate the performance of expanded polystyrene (EPS) samples on an underground installation and provided an opportunity to observe the product's characteristics after an installation period of 15 years. The results revealed that the expanded polystyrene, with a compressive strength of 10 psi, **kept 94% of its insulating value after 15 years; an excellent performance when compared to other sources of insulation.**

Furthermore, **the EPS demonstrated a very low level of water absorption.** Note that this study was carried out with a **low density material with a higher water absorption % than ISOLOFOAM XHD series products, which are of a much higher density.**

Expanded polystyrene demonstrates proven performance, making it your top choice for high-performance insulation.

The study is available for consultation at <http://www.epsmolders.org>.

PHYSICAL PROPERTIES

PROPERTIES	METHODS	UNITS	ISOLOFOAM XHD		
			200	300	400
THERMAL RESISTANCE	ASTM C-518	$^{\circ}\text{F}\cdot\text{ft}^2\cdot\text{h}/\text{Btu}/\text{in}$ ($\text{m}^2\cdot^{\circ}\text{C}/\text{W}/25\text{ mm}$)	4.20 (0.74)	4.25 (0.75)	4.35 (0.77)
COMPRESSIVE STRENGTH MIN.	ASTM D-1621	kPa (psi)	140 (20)	210 (30)	275 (40)
COMPRESSIVE MODULUS	ASTM D-1621	kPa (psi)	–	–	9000 (1305)
FLEXURAL STRENGTH MIN.	ASTM C-203	kPa (psi)	300 (44)	350 (50)	414 (60)
WATER VAPOR TRANSMISSION MAX.	ASTM E-96	$\text{ng}/\text{Pa}\cdot\text{s}\cdot\text{m}^2$ (perms)	130 (2.3)	130 (2.3)	130 (2.3)
WATER ABSORPTION MAX.	ASTM D-2842	%	2	1.8	1.5
DIMENSIONAL STABILITY MAX.	ASTM D-2126	%	0.5	0.5	0.5
COEFFICIENT OF THERMAL EXPANSION	ASTM D-696	$\text{mm}/\text{mm}/^{\circ}\text{C}$ ($\text{in}/\text{in}/^{\circ}\text{F}$)	6×10^{-5} (3.5×10^{-5})	6×10^{-5} (3.5×10^{-5})	6×10^{-5} (3.5×10^{-5})
EFFECTIVE TEMPERATURE RANGE	CONTINUOUS INTERMITTENT	$^{\circ}\text{C}$ ($^{\circ}\text{F}$)	75 (167) 82 (180)	75 (167) 82 (180)	75 (167) 82 (180)
FLAME SPREAD	CAN/ULC S102.2M	–	240	240	240

ISOLOFOAM XHD DIMENSIONS

AVAILABLE SIZES	THICKNESSES	R VALUE (RSI)		
		200	300	400
2' x 8'	1"	4.20 (0.74)	4.25 (0.75)	4.35 (0.77)
	1.2"	5.0 (0.88)	5.1 (0.90)	5.2 (0.92)
	1.5"	6.3 (1.11)	6.35 (1.13)	6.5 (1.16)
	1.8"	7.5 (1.33)	7.6 (1.35)	7.8 (1.39)
	2"	8.4 (1.48)	8.5 (1.50)	8.7 (1.5)
	2.4"	10.0 (1.78)	10.2 (1.80)	10.4 (1.85)

Also available: other thicknesses; 4' x 8' and/or ship lapped 2 or 4 sides.

Innovative products manufactured in Canada

ISOFOIL

ISOCLAD



ISOLOFOAM HD

MAXFOAM



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