FORTE
EPS SOLUTIONS INC

IDEAS. RESOURCES. SOLUTIONS.

HDS20
HDS30
HDS40

Thermo | HDS

HIGH DENSITY RIGID INSULATION

APPLICATIONS

- Under Commercial and Industrial Concrete Slabs
- Vertical Commercial Foundation Walls
- Residential Basement Slabs and Foundation Walls
- Sidewalks and Platforms
- Lightweight Fill
- Community Centres and Skating Rinks

BENEFITS

- Compressive Strengths 155kPa up to 275 kPa 20 PSI up to 40 PSI
- Retains Thermal Properties throughout Life Cycle
- Moisture Resistant throughout Life Cycle
- Best Value for $ spent vs other Insulation Products

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SPECIFICATIONS

Available in sheets 2′ x 8′ and 4′ x 8′, thickness 1″ up to full block size of 32″ Shiplap or butt edge.

TYPE		HDS 20	HDS 30	HDS 40
Density, min., kg/m3(lb/ft3)	ASTM C303	21.6 (1.35)	28.8 (1.80)	38.4 (2.40)
Compressive Resistance, min., kPa (psi) at 1 % deformation	ASTM D1621	50 (7.3)	75 (10.9)	103 (15.0)
Compressive Resistance, min., kPa (psi) at 5 % deformation	ASTM D1621	115 (16.7)	170 (24.7)	241 (35.0)
Compressive Resistance, min., kPa (psi) at 10 % deformation	ASTM D1621	135 (20)	200 (30)	276 (40.0)
Flexural Strength, min., kPa (psi)	ASTM C203	240 (35.0)	345 (50.0)	414 (60.0)
Oxygen index, min., volume %	ASTM D2863	24	24	24
Thermal Resistance m2•°C/ (W•25mm) (R-value per inch thickness) minimum @ 24C (75F)	ASTM C518	0.7 (4.0)	0.74 (4.2)	0.76 (4.3)
Water Vapor Permeance ng/(Pa•s•m2) (perms)	ASTM E96	66.83*	63.8*	63.67*
Water Absorption max % by volume	ASTM D2842	0.3*	0.58*	0.46*
Dimensional Stability max % linear change	ASTM D2126	1.5	1.5	1.5

*The water absorption values given are based on actual test results conducted by ULC.
This information is presented as average values as identified by accepted ASTM standards and test methods and as such the values can vary as the reult of normal manufacturing processes. Please consult Technical Support for more detail. Fortefy HDS conforms to S-102.2 & S-701 standards.

WHY EPS VS XPS? GET THE FACTS!

Facts about moisture resistance and R-value retention of EPS[1]

A 30 month field research study conducted by the National Research Council of Canada/Institute for Research in Construction (NRC/IRC) jointly with the Expanded Polystyrene Association of Canada (EPAC) on EPS samples concluded the following:

1) The moisture content of EPS insulation directly exposed to high moisture content soil conditions was found to be less than 0.5% by volume on average at the end of the exposure.
2) In-situ thermal performance of the EPS insulation monitored during the exposure period remained constant, i.e., there was no loss in thermal resistance.
3) Laboratory test results from samples removed after the exposure confirmed thermal performance and durability, i.e., there was no change in material properties.
4) "A second part of the research project included development of a durability test protocol that subjected test material to extreme thermal gradient and environmental cycling, including freeze-thaw cycling.Testing performed by NRC on samples of the same material that was subjected to the 30-month field exposure confirmed that all types of EPS insulation retained their specified material properties even after being subjected to the durability test protocol".

Facts about the effect of freeze-thaw on properties of EPS[2]

An independent third party testing was conducted on EPS in accordance with ASTM C1512-07, a standard which assesses the effect of freeze-thaw cycling on thermal performance and also determines the moisture absorption of insulation when exposed to the rigors of environmental cycling. The tests concluded the following: "These independent tests confirm the freeze-thaw and moisture resistance properties of EPS insulation. Test results confirm no loss in R-value or change in compressive strength for EPS. Additionally, the results clearly demonstrate that EPS insulation does not absorb excessive amounts of moisture".

Facts about In-situ R value retention over the long term of EPS and XPS[3]

Independent testing conducted after a 15 year period installation of EPS and XPS samples concluded the following:

1) EPS Type I out performs XPS Type X in both R-value retention and decreased water absorption.
2) Whereas the in-service R-value of the XPS insulation is reduced by half, expanded polystyrene still delivers 94% of its specified Rvalue of 3.6 per inch after 15 years.

References: 1) EPS Industry Alliance, EPS Below Grade Series 101, August 2008
2) EPS Industry Alliance, EPS Below Grade Series 102, August 2008
3) EPS Industry Alliance, EPS Below Grade Series 103, November 2008

Expanded Polystyrene is a combustible material and therefore should be protected from open sources of ignition, such a flames or other sources of combustion. All our products are 100% recyclable. **Go Green.**

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