

Product Information Bulletin 248

PlastiSpan 40 Insulation Material Property Data

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PlastiSpan® 40 Insulation Material Property Data Sheet

PlastiSpan® 40 insulation is a closed cell expanded polystyrene (EPS) insulation that meets the requirements of ASTM C578¹, Type XIV. **PlastiSpan 40** insulation closed cell structure resists water absorption so it will retain its thermal resistance value even in applications where severe temperature differentials occur.

PlastiSpan 40 insulation high compressive resistance is ideal for use in applications where heavy loads are expected such as low temperature freezer floor or highway construction. **PlastiSpan 40** insulation compressive resistance at 1% strain resists compressive creep under specified loads on the long term.

Material Property	Test Method	Units	Values
Compressive Resistance <i>Minimum @ 10% strain</i>	ASTM D1621	kPa (psi)	276 (40)
Thermal Resistance ² <i>Minimum per 25 mm (1 inch) thickness</i>	ASTM C518	m ² ·°C/W (ft ² ·h·°F/BTU)	0.75 (4.3)
Flexural Strength <i>Minimum</i>	ASTM C203	kPa (psi)	414 (60)
Water Vapour Permeance <i>Maximum</i>	ASTM E96	ng/(Pa·s·m ²) (Perms)	130 (2.3)
Water Absorption ³ <i>Maximum</i>	ASTM C272	% By volume	2.0
Dimensional Stability <i>Maximum, 7 Days @ 70 ± 2°C (158 ± 4°F)</i>	ASTM D2126	% Linear Change	1.5
Limiting Oxygen Index <i>Minimum</i>	ASTM D2863	%	24
Additional Material Properties			
Compressive Resistance ⁴ <i>Minimum @ 1% strain</i>	ASTM D1621	kPa (psi)	103 (15.0)
Shear Strength <i>Minimum</i>	ASTM C273	kPa (psi)	210 (30)
Thermal Resistance ⁵ <i>Minimum per 25 mm (1 inch) thickness</i>	ASTM C518	Mean Temperature, °C (°F)	-3.9 (25) -10 (14)
		m ² ·°C/W (ft ² ·h·°F/BTU)	0.84 (4.8) 0.87 (5.0)
Surface Burning Characteristics <i>Rating or Classification</i>	CAN/ULC S102.2	Flame Spread	290
		Smoke Developed	Over 500

1. ASTM C578, **Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation**. **PlastiSpan 40** insulation material properties exceed requirements for CAN/ULC-S701, type 3 (**Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering**).

2. Thermal resistance value measured at a mean temperature of 24 °C (75 °F).

3. Water absorption laboratory test methods involve complete submersion under a head of water. The laboratory water absorption value above is applicable to specific end-use design requirements only to the extent that the end-use conditions are similar to test method requirements.

4. Compressive resistance at 1% strain is within the elastic limit for **PlastiSpan 40** insulation and is accepted as the design compressive resistance to limit long-term deformation under structural load.

5. **Thermal resistance values at additional mean temperatures of -3.9 °C (25 °F) and -10 °C (14 °F) are provided for reference purposes where applicable.**