

BASF Styrodur® 5000 CS Extruded Rigid Polystyrene Foam (Europe)

Category : Polymer , Thermoplastic , Polystyrene (PS) , Expanded Polystyrene (EPS) , Polystyrene, Extrusion Grade

Material Notes:

Description: Styrodur C is the green extruded rigid polystyrene foam (XPS) from BASF. As a thermal insulation, it makes a significant contribution to climate protection by reducing CO2 emissions. The key features of Styrodur C are high compressive strength, low water absorption, and outstanding thermal insulation. It is also rot-proof and easy to handle on site. Compressive strength is the major factor that differentiates the various grades of Styrodur C. Applications: Load-bearing floor slabs, Load-bearing floors, Perimeter floor slabs, Perimeter basement walls, Perimeter subsoil water areas, Inverted flat roofs, Duo roofs, Plus roofs, Parking decks, Promenade roofs, Roof gardens, Conventional flat roofs, Warehouses, Roads and railways, and Ice rinks. Information provided by BASF

Order this product through the following link:

http://www.lookpolymers.com/polymer_BASF-Styrodur-5000-CS-Extruded-Rigid-Polystyrene-Foam-Europe.php

Physical Properties	Metric	English	Comments
Density	0.0450 g/cc	0.00163 lb/in ³	
Water Absorption	0.20 %	0.20 %	by immersion; DIN EN 12087
	<= 3.0 %	<= 3.0 %	by diffusion; DIN EN 12088
Water Vapor Transmission	100 - 150 g/m ² /day	6.44 - 9.66 g/100 in ² /day	DIN EN 12086
Deformation	<= 5.0 %	<= 5.0 %	DIN EN 1605
	@Pressure 0.0400 MPa, Temperature 70.0 °C	@Pressure 5.80 psi, Temperature 158 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength	0.500 MPa	72.5 psi	
Creep Strength	0.250 MPa	36.3 psi	Compressive; DIN EN 1606
	@Strain <=2.00 %	@Strain <=2.00 %	
	0.250 MPa	36.3 psi	Compressive; long-term; 50 years; DIN EN 1606
	@Strain <=2.00 %	@Strain <=2.00 %	
	0.300 MPa	43.5 psi	Compressive; mid-term; DIN EN 1606
	@Strain <=2.00 %, Time 3.60e+6 sec	@Strain <=2.00 %, Time 1000 hour	
Modulus of Elasticity	0.0125 GPa	1.81 ksi	Long-term; DIN EN 826
	0.0400 GPa	5.80 ksi	
Tensile Modulus	0.0400 GPa	5.80 ksi	

Mechanical Properties	Metric	English	Comments
Compressive Strength	0.250 MPa	36.3 psi	s_{perm}; DIBT Z-23.34-13525
	0.355 MPa	51.5 psi	f_{cd}; DIBT Z-23.34-13525
	0.700 MPa @Strain 10.0 %	102 psi @Strain 10.0 %	DIN EN 826
Compressive Modulus	0.0140 GPa	2.03 ksi	Elasticity; Long term E50; DIN EN 826
	0.0400 GPa	5.80 ksi	Elasticity; Short term E; DIN EN 826
Shear Strength	0.300 MPa	43.5 psi	
	0.300 MPa	43.5 psi	Allowable
Adhesive Bond Strength	<= 0.100 MPa	<= 14.5 psi	on concrete
	<= 0.100 MPa	<= 14.5 psi	on mineralic surfaces
	<= 0.100 MPa	<= 14.5 psi	on gluing mortar
	<= 0.100 MPa	<= 14.5 psi	on plasters
	>= 0.200 MPa	>= 29.0 psi	on metals
	>= 0.200 MPa	>= 29.0 psi	on wood

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	8.00 $\mu\text{m}/\text{m}^{\circ}\text{C}$	4.44 $\mu\text{in}/\text{in}^{\circ}\text{F}$	DIN 53752
CTE, linear, Transverse to Flow	6.00 $\mu\text{m}/\text{m}^{\circ}\text{C}$	3.33 $\mu\text{in}/\text{in}^{\circ}\text{F}$	DIN 53752
Thermal Conductivity	0.0330 W/m-K	0.229 BTU-in/hr-ft ² -°F	Moisture Content: 0%
	0.0340 W/m-K	0.236 BTU-in/hr-ft ² -°F	Moisture Content: 1%
	0.0340 W/m-K	0.236 BTU-in/hr-ft ² -°F	Moisture Content: 2%
	0.0350 W/m-K	0.243 BTU-in/hr-ft ² -°F	Moisture Content: 3%
	0.0350 W/m-K	0.243 BTU-in/hr-ft ² -°F	Moisture Content: 4%
	0.0360 W/m-K	0.250 BTU-in/hr-ft ² -°F	Moisture Content: 5%
	0.0370 W/m-K	0.257 BTU-in/hr-ft ² -°F	Moisture Content: 6%
	0.0380 W/m-K	0.264 BTU-in/hr-ft ² -°F	Moisture Content: 8%
	0.0390 W/m-K	0.271 BTU-in/hr-ft ² -°F	Moisture Content: 10%

Thermal Properties	0.0400 W/m-K Metric	0.278 BTU-in/hr-ft ² -°F English	Moisture Content: 12% Comments
	0.0320 W/m-K @Thickness 40.0 mm	0.222 BTU-in/hr-ft ² -°F @Thickness 1.57 in	DIN EN 13164
	0.0330 W/m-K @Thickness 50.0 mm	0.229 BTU-in/hr-ft ² -°F @Thickness 1.97 in	DIN EN 13164
	0.0340 W/m-K @Thickness 60.0 mm	0.236 BTU-in/hr-ft ² -°F @Thickness 2.36 in	DIN EN 13164
	0.0350 W/m-K @Thickness 80.0 mm	0.243 BTU-in/hr-ft ² -°F @Thickness 3.15 in	DIN EN 13164
	0.0370 W/m-K @Thickness 100 mm	0.257 BTU-in/hr-ft ² -°F @Thickness 3.94 in	DIN EN 13164
	0.0380 W/m-K @Thickness 120 mm	0.264 BTU-in/hr-ft ² -°F @Thickness 4.72 in	DIN EN 13164
	0.0240 W/m-K @Thickness 50.0 mm, Temperature -80.0 °C	0.167 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature -112 °F	
	0.0260 W/m-K @Thickness 50.0 mm, Temperature -60.0 °C	0.180 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature -76.0 °F	
	0.0280 W/m-K @Thickness 50.0 mm, Temperature -40.0 °C	0.194 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature -40.0 °F	
	0.0300 W/m-K @Thickness 50.0 mm, Temperature -20.0 °C	0.208 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature -4.00 °F	
	0.0320 W/m-K @Thickness 50.0 mm, Temperature 0.000 °C	0.222 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature 32.0 °F	
	0.0330 W/m-K @Thickness 50.0 mm, Temperature 10.0 °C	0.229 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature 50.0 °F	
	0.0340 W/m-K @Thickness 50.0 mm, Temperature 20.0 °C	0.236 BTU-in/hr-ft ² -°F @Thickness 1.97 in, Temperature 68.0 °F	
	0.0350 W/m-K	0.243 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric	English	Comments
	@Thickness 50.0 mm, Temperature 30.0 °C	@Thickness 1.97 in, Temperature 86.0 °F	
	0.0360 W/m-K	0.250 BTU-in/hr-ft ² -°F	
	@Thickness 50.0 mm, Temperature 40.0 °C	@Thickness 1.97 in, Temperature 104 °F	
	0.0370 W/m-K	0.257 BTU-in/hr-ft ² -°F	
	@Thickness 50.0 mm, Temperature 50.0 °C	@Thickness 1.97 in, Temperature 122 °F	
Maximum Service Temperature, Air	75.0 °C	167 °F	DIN EN 14706

Descriptive Properties	Value	Comments
Commercial Status	Europe	
Dimensional Stability at Heat	< 5%	70°C, 90% rh; DIN EN 1604
Dynamic Stiffness	120-800 MN/m ³	
Freeze-Thaw-Resistance	<1%	DIN EN1209
Long-term Bedding Modulus for 30-160 mm	0.069 - 0.417 N/mm ³	EN 1606

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