

CLASS S

DESCRIPTION

STIFERITE CLASS S is an height performance insulation board with a rigid polyisocyanurate polyiso foam core, blowing without CFC or HCFC, covered on both side with saturated fiber glass.

MAIN APPLICATIONS

Insulation of roofs also under synthetic mantles
Insulation of floors
Insulation of walls

GUIDELINE FOR DRAFTING OF TECHNICAL SPECIFICATIONS*

Thermal insulation **STIFERITE CLASS S** in polyiso rigid foam (PIR) of thickness...(*), covered on both sides with saturated glass fiber, has:

Declared thermal conductivity: $\lambda_D = \dots$ W/mK (EN 13165 Annessi A e C)
Weight percentage of recycled material: **3.23 – 2.45 %**
Compressive strength at 10% deformation: **minimum value = ... kPa (EN 826)**
Compressive strength at 2% deformation: **minimum value = ... kg/m² (EN 826)**
Water vapour diffusion resistance factor for thickness of 100 mm: $\mu = 56$ (EN 12086)
Water vapour diffusion resistance: **Z = ... m²hPa/mg (EN 12086)**
Tensile strength perpendicular to faces: $\sigma_{mt} > 70$ kPa
Deviation from flatness: **S_{max} ± 5 mm (EN 825)**
Flatness after one-sided wetting: **FW ≤ 10 mm (EN 13165)**
Water absorptin by total immersion: **W_{it} < 2 % (EN 12087)**
Water absorptin by partial immersion: **W_{sp} < 0.2 kg/m² (EN 1609)**
Euroclass reaction to fire: **E (EN 11925-2)**
Environmental product declaration for 60 mm thickness (ISO 14040 and MSR 1999:2)

Product of Company certified according to UNI EN ISO 9001:2000 specifications, with CE conformity mark on the whole range.

(*) Not stated parameters change according to thickness. For introducing the values corresponding to the used thickness, please use the specifications indicated on this technical sheet.

Characteristics and performances

Isolamento Termico

Characteristics [Standard]	Description	Symbol [Units]	Value									
			Some characteristics depend on the thickness (mm)									
			20	40	50	60	70	80	90	100	120	140
Average initial thermal conductivity [EN 12667]	Value determinad at 10 °C	$\lambda_{90/90,1}$ [W/mK]	0,024									
Declared thermal conductivity [UNI EN 13165 annex A e C]	Value determinad at 10 °C C	λ_D [W/mk]	0,028 thickness 20 - 70									
			0,026 thickness 80 - 110									
			0,025 thickness 120 - 140									
Declared thermal trasmittance	$U_D = \lambda_D / d$	U_D [W/m ² K]	1.40	0.70	0.56	0.47	0.40	0.33	0.29	0.26	0.21	0.18
Declared thermal resistance	$R_D = d / \lambda_D$	R_D [m ² K/W]	0.71	1.43	1.79	2.14	2.50	3.03	3.49	3.85	4.80	5.60

For other characteristics see back →

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Characteristics [Standard]	Description	Symbol [Units]	Value Some characteristics depend on the thickness (mm)									
			20	40	50	60	70	80	90	100	120	140
Project thermal conductivity [UNI EN 12667]	Value determinad at 20 °C and 50 % RH	λ_U [W/mk]	0,026 thickness 80 - 120									
Board density	Average value with facing characteristics	ρ [Kg/m ³]	35 ± 1.5									
Nominal thickness [EN 823]		d_N [mm]	production from 20 to 140 mm									
Compressive strenght [EN 826]	Value determinad at 10% deformation	$\sigma_{10} \text{ o } \sigma_m$ [kPa]	160	150	150	160	160	150	150	150	150	150
Compressive strenght [EN 826]	Value determinad at 2% deformation	σ_2 [kPa]	5000	5000	5000	6000	6000	5000	6000	6000	6000	6000
Dimensional stability under specified temperature and umidity [EN 1604]	48h (±1) a 70°C (±2) e 90% RH (±5)	DS(TH) [% dimensions]	1	1	1	1	1	1	1	1	1	1
		[% thickness]	6	5	4	3	3	4	4	4	4	4
	48h (±1) a -20°C (±3)	[% dimensions]	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
		[% thickness]	1	1	1	1	1	1	1	1	1	1
Euroclass reaction to fire [EN 13501-1] [EN 11925 -2] [EN 13823 (SBI)]	Class	Euroclass	E									
Specific heat capacity	Value	C_p [J/kg K]	1464									
Acoustic isolation to wall [UNI EN ISO 140-3] [UNI EN ISO 717-1]	Stratigraphy: o 15 mm plaster o Brick from 12 mm o STIFERITE CLASS S from 50 mm o Brick from 8 mm o 15 mm plaster	R_w [dB]	54									
Water vapor diffusion resistance factor [EN 12086]	Value for thickness of 100 mm	μ (MU)	56 ± 2									
Water vapor diffusion resistance [EN 12086]	The variation depends on the thickness	Z [m ² hPa/mg]	4.2 – 8.0									
Tensile strength perpendicular to faces [EN 1607]	Value	σ_{mt} [kPa]	More than 70									
Pull through [EN 16382]	Value	[N]	> 750									
Deviation from flatness [EN 825]	Value	S_{max} [mm]	± 5 for surface ≤ 0.75 m ²									
			± 10 for surface > 0.75 m ²									
Flatness after one-sided wetting [EN 13165]	Value	FW [mm]	≤ 10									

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Characteristics [Standard]	Description	Symbol [Units]	Value Some characteristics depend on the thickness (mm)									
			20	30	40	50	60	70	80	90	100	120
Water absorption [EN 12087]	Total immersion for 28 days	W_{it} [%]	Less than 2% _w									
Water absorption [EN 1609]	Partial immersion	W_{ip} [kg/m ²]	Less than 0.2									
Weight percentage of recycled material	The variation depends on the thickness	%	3.23 – 2.45									

Tolerances and notes

Tolerances [UNI EN 13165]	Thickness	T2 [mm]	<50 ±2 mm		from 50 to 75 ±3 mm		>75 +5 /-2 mm	
	Dimensions		< 1000 ±5 mm	from 1000 to 2000 ±7,5 mm	from 2000 to 4000 ±10 mm	> 4000 ±15 mm		
Notes	stability to the temperature	Stiferite panels are used in a range of continuous temperatures normally included between -40 °C e +120 °C. During short time they can resist also to temperatures till + 200 °C, or corresponding to the temperature of fused, without particular problems. Long exposures to the temperatures could cause deformations to the foam or to the coats, but without causing sublimation or fusion. Resistance to the torch and some other reactions to fire are characteristics connected with the kind of used panel.						
	Aspect	Any possible little areas of non-adhesion between coats and foam are originated by the production process and don't prejudice in any way the physical-mechanical properties of the panels.						