

Technical data sheet

GT4

DESCRIPTION

STIFERITE is an high performance insulation board manufactured from CFC or HCFC free closed cell rigid polyisocyanurate polyiso foam. It's covered on both side with Duotwin® facing, and on one side torch bonded to a polyester reinforcement bituminous waterproofing membrane (thickness 4 mm). The board sides have 8 cm of selvage.

MAIN APPLICATIONS

Thermal insulation and waterproofing base sheet of flat and pitched roof

GUIDELINE FOR DRAFTING OF TECHNICAL SPECIFICATIONS*

STIFERITE GT4 mades with STIFERITE GT in polyiso rigid foam (PIR) of thickness...(*), covered on both sides with Duotwin® facing, and on one side torch bonded to a polyester reinforcement bituminous waterproofing membrane (thickness 4 mm), has:

Thermal insulation property

Declared thermal conductivity: $\lambda_D = 0.023 \text{ W/mK}$ (EN 13165 Annessi A e C)

Weight percentage of recycled material: **3.14 – 2.49 %**

Weight percentage of renewable material: **3.66 – 2.87 %**

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 100 mm of thick: $\mu = 148$ (EN 12086)

Water vapour diffusion resistance: $Z = ... \text{ m}^2\text{hPa/mg}$ (EN 12086)

Flatness after one-sided wetting: $FW \leq 10 \text{ mm}$ (EN 13165)

Water absorption by total immersion: $W_{It} < 1 \%$ (EN 12087)

Water absorption by partial immersion: $W_{Sp} < 0.1 \text{ kg/m}^2$ (EN 1609)

Euroclass reaction to fire: **F** (EN 11925-2)

Apparent dynamics stiffness: $s'_t = ... \text{ MN/m}^3$ (EN 29052-1)

Environmental product declaration for 80 mm thickness (ISO 14040 and MSR 1999:2)

Glass fiber reinforcement bituminous waterproofing membrane property

Thickness: **4 mm** (EN 1849-1)

Tensile strength: **longitudinal 400 N/5 cm e trasversal 300 N/5 cm** (EN 12311-1)

Elongation at break: **longitudinal 35 % e trasversal 35 %** (EN 12311-1)

Tear resistance: **longitudinal 130 N e trasversal 130 N** (EN 12310-1)

Cold flexibility: **-10 ° C** (EN 1109)

Heat resistance: **120° C** (EN 1110)

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

(*Parameters change according to panel thickness. To determine the values corresponding to the used thickness, please use the specifications indicated on this technical sheet.

Characteristics and performances

Thermal insulation

Characteristics [Standard]	Description	Symbol [Units]	Value										
			Some characteristics depend on the thickness (mm)										
			–	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]	0,022										
Declared thermal conductivity [UNI EN 13165 annex A e C]	Value determinad at 10 °C C	λ_D [W/mk]	0,023										

For other characteristics see back →

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Thermal insulation characteristics and performances

Characteristics [Standard]	Description	Symbol [Units]	Value Some characteristics depend on the thickness (mm)									
			-	40	50	60	70	80	90	100	120	140
Declared thermal transmittance	$U_D = \lambda_D / d$	U_D [W/m ² K]		0.58	0.46	0.38	0.33	0.29	0.26	0.23	0.19	0.16
Declared thermal resistance	$R_D = d / \lambda_D$	R_D [m ² K/W]		1.74	2.17	2.61	3.04	3.48	3.91	4.35	5.22	6.09
Board density	Average value with facing characteristics	ρ [Kg/m ³]	36 ± 1.5									
Nominal thickness [EN 823]		d_N [mm]	production from 40 to 120 mm									
Compressive strength [EN 826]	Value determined at 10% deformation	σ_{10} o σ_m [kPa]		150	150	150	150	150	150	150	150	150
Compressive strength [EN 826]	Value determined at 2% deformation	σ_2 [kPa]		5200	6000	6000	6000	6000	5000	5000	5000	5000
Dimensional stability under specified temperature and umidity [EN 1604]	48h (±1) a 70°C (±2) e 90% UR (±5)	DS(TH) [% dimensions]		1	1	1	1	1	1	1	1	1
		[% thickness]		4	4	4	4	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
		[% thickness]		1	1	1	1	1	1	1	1	1
Euroclass reaction to fire [EN 13501-1] [EN 11925 -2] [EN 13823 (SBI)]	Class	Euroclass	F									
Euroclass reaction to fire [EN 11925 -2]	Foam	Euroclass	E									
Specific heat capacity	Value	C_p [J/kg K]	1453									
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 GT from 40 mm o Air from 10 mm o Brick from 8 mm o 15 mm plaster	R_w [dB]	54									
Apparent dynamics stiffness [UNI EN ISO 29052-1]	value	s^t [MN/m ³]	68 (thickness 20 mm)									
			59 (thickness 20 mm)									
Reduction of transmitted impact noise [UNI EN ISO 140-8] [UNI EN ISO 717-2]	Stratigraphy: o floor coverings o STIFERITE GT from 20 mm o heavyweight standard floor from 100 kg/m ²	ΔL_w [dB]	18									
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Thermal insulation characteristics and performances

Characteristics [Standard]	Description	Symbol [Units]	Value Some characteristics depend on the thickness (mm)									
			20	30	40	50	60	70	80	90	100	120
Water vapor diffusion resistance factor [EN 12086]	Value For 100 mm of thick	μ (MU)	148 ± 24									
Water vapor diffusion resistance [EN 12086]	The variation depends on the thickness	Z [m ² hPa/mg]	82 – 21									
Pull through [EN 16382]	Value	[N]	> 800									
Flatness after one-sided wetting [EN 13165]	Value	FW [mm]	≤ 10									
Water absorption [EN 12087]	Total immersion for 28 days	W _{it} [%]	Less than 1% _w									
Water absorption [EN 1609]	Partial immersion	W _{ip} [kg/m ²]	Less than 0.5									
Water absorption [EN 12088]	By diffusion for 28 days	W _{dv} [%]	2.1 (thickness 20 mm)									
		W _{dv} [%]	0.3 (thickness 120 mm)									
		W _{dp} [kg/m ²]	0.43 (thickness 20 mm)									
		W _{dp} [kg/m ²]	0.41 (thickness 120 mm)									
emission rate of volatile organic compounds [EN 16000-9]	Value For 80 mm of thick	–	available on request									
Weight percentage of recycled material	The variation depends on the thickness	%	3.14 – 2.49									
Weight percentage of renewable material	The variation depends on the thickness	%	3.66 – 2.87									
			For other characteristics see back →									

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Polyester reinforcement bituminous waterproofing membrane

Characteristics [Standard]	Description	Symbol [Units]	Value
Mass [EN 1849-1]		[Kg/m ²]	-
Thickness [EN 1849-1]		[mm]	4
Tensile strenght [EN 12311-1]	Longitudinal	[N/5 cm]	400
	Trasversal		300
Elongation at break [EN 12311-1]	Longitudinal	[%]	35
	Trasversal		35
Tear resistance [EN 12310-1]	Longitudinal	[N]	130
	Trasversal		130
Cold flexibility [EN 1109]		[° C]	- 10
Heat resistance [EN1110]		[° C]	120

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 +110 °C. During short time they can resist also to temperatures till + 200 °C, or corresponding to the temperature of fused bitumen, 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.						

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