THERMAK

Panel PUR

THERMAL INSULATING PANELS COUPLED WITH BITUMINOUS MEMBRANES

PANEL PUR is an insulating system in panels, put together and heat joined to a bituminous waterproof membrane.
On demand is available a special selvedge for sealing the overlaps, 8 cm wide on polyester versions and 5 cm on fiberglass versions, composed of a strip self-adhesive protected by siliconized polyethylene.
The sealing of the side overlaps always occurs by self-adhesion while the head overlaps or however on the slate, they must be sealed with the help of bituminous mastic PRATIKO MASTIC or, when it is possible, they can be welded with hot air.
This special selvedge allows a fast and safe application (without using flame).
PANEL PUR are recommended for the insulation and waterproofing of covers in general, with the great convenience of using a single product; in fact, they offer the very high thermal insulation capacity of polyurethane and the waterproofness of a bituminous membrane.
PANEL PUR are made from closed cell rigid polyiso foam, protected with covering of multi-layer gas A-Cell®.

Areas of application

PANEL PUR are adaptable to any roof: flat, sloped or curved.
They are fast to apply and once down, the roof is waterproof, thanks to the provided side selvedge.
After installing the PANEL PUR, a second layer of waterproofing membrane can be applied.

Application

PANEL PUR is fixed to the deck depending on the nature and the slope of the application surface and local weather conditions (ventilated areas, harsh climate, etc..) with suitable mechanical fixings, glues or dimpled faced membranes.
PANEL PUR has an excellent resistance to mechanical fatigue together with a very high acoustic and thermal insulation; the bituminous component of the system has an exclusive function of protection of the insulating element.
The application of the second layer, must be fully bonded astride and over the lower membrane.

MEMBRANE TECHNICAL CHARACTERISTICS	M.U.	REFERENCE NORM	P	P	PA	PA	PA	V	V	TOLERANCE
REINFORCEMENT TYPE			Single strand polyester					Fibreglass		
UPPER FACE FINISH			PE film		Mineral*			PE film		
LOWER FACE FINISH			PE film							
THICKNESS	mm	EN 1849-1	3	4				2	3	±5%
MASS	kg/m²	EN 1849-1			3,5	4,0	4,5			±10%
COLD FLEXIBILITY	°C	EN 1109	-10							
FLOW RESISTANCE	°C	EN 1110	120							
FLOW RESISTANCE AFTER AGEING	°C	EN 1296		110		110				-10°C
SHEAR RESISTANCE L / T	N / 5 cm	EN 12317-1	300/200							±20%
TENSILE STRENGTH L / T	N / 5 cm	EN 12311-1	400/300					300/200		±20%
ELONGATION AT BREAK L / T	%	EN 12311-1	35/35					2/2		±15 / ±2
TEAR RESISTANCE L / T	N	EN 12310-1	130/130					70/70		±30%
DIMENSIONAL STABILITY	%	EN 1107-1	-0,3					NPD		
LOSS OF MINERAL SLATE	%	EN 12039			30					
STATIC PUNCTURE RESISTANCE	kg	EN 12730	10							
DYNAMIC PUNCTURE RESISTANCE	mm	EN 12691	700							
FIRE RESISTANCE		EN 13501-5	F ROOF							
REACTION TO FIRE		EN 13501-1	F							
TENSILE STRENGTH AFTER AGEING L / T	N / 5 cm	EN 1296			NPD					±20%
IMPERMEABILITY AFTER ARTIFICIAL AGEING	kPa	EN 1296	60							
WATERTIGHTNESS	kPa	EN 1928	60							

* Mineral self-protected products may undergo color tone variations due to the time and length of storage. Exposure to atmospheric conditions, after application, will tend to uniform the color after a few months. The change in color tone cannot therefore be contested and / or complained of as it is a natural phenomenon that the slate manufacturer himself cannot guarantee.
NPD = No Performance Declared in accordance with the EU Construction Products Directive.

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PUR technical specifications

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CHARACTERISTICS	M.U.	PUR
PANEL DIMENSION	m	1,00 x 1,20
AVAILABLE THICKNESS	mm	40
	mm	50
	mm	60
	mm	80
	mm	100
	mm	120

CHARACTERISTICS	M.U. SYMBOL	VALUE						STANDARD
		40	50	60	80	100	120	
Density	kg/m³	35 ±10%						
Declared thermal conductivity	λ_D (W/mk)	0,027				0,026		EN 13165
Declared thermal resistance $R_D = d/\lambda_D$	R_D (m²K/W)	1,48	1,85	2,22	3,15	3,70	4,44	EN 12667
Dimensional stability (+70±2)°C and (90±5)% R.H. for (48±1) h	%	≤2 linear variation ≤6 variation on thickness						EN 1604
Compression resistance at 10% of deformation	kPa	≥ 150						EN 826
Compressive strength after 50 years with crushing ≤2%	kPa	≥ 25						EN 1606
Water absorption totally submersed for a period of time	Vol. %	≤ 2						EN 12087
Water vapor diffusion resistance	μ	125						EN 12086
Temperature of use	°C	-40 / +110						
Reaction to fire	Euroclass	F						EN 13501-1
Specific heat	J/kgK	1500						

DIMENSIONAL TOLERANCES

Thickness (d)	mm	d < 50 50 ≤ d ≤ 60 d ≥ 60	-2/+2 -3/+3 -3/+5	EN 823 EN 13165	T2
Length and width (L)	mm	L < 1000 1000 ≤ L ≤ 2000	-5/+5 -7,5/+7,5	EN 13165	
Orthogonality (Sb)	mm/m		5	EN 824 EN 13165	
Planarity (Smax) Length ≤ 2500 mm Area ≤ 0,75 m² Area > 0,75 m²	 mm/m mm/m		 ≤ 5 ≤ 10	EN 825 EN 13165	

The data reported in this table refer to a bare, uncoupled panel.

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