


**THERMAL INSULATING PANELS
COUPLED WITH BITUMINOUS
MEMBRANES**

Panel Black

PANEL BLACK 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 BLACK 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 high thermal insulation capacity of expanded polystyrene and the waterproofness of a bituminous membrane. PANEL BLACK are made of thermal insulation EPS panel with graphite additive, with high thermal insulation capacity, closed-cell, self-extinguishing class E, in compliance with the requirements of European Directive 89/106/ECC and produced considering and applying the EN 13163 product standards, with the CE marking.

Fields of use

PANEL BLACK fit any type of cover: flat, sloped and curved, unpaved and unballasted. They are quick to apply and once installed, thanks to the overlapping flange, the cover is already waterproofed. After installing the PANEL BLACK, a second waterproofing membrane or the definitive roof covering can be applied.

Installation

PANEL BLACK should be anchored according to the nature and slope of the application surface and local weather conditions (windy, cold weather etc.) using adequate mechanical fasteners, with suitable bonding systems or with appropriate bossed membranes. PANEL BLACK offers excellent resistance to mechanical stress together with excellent thermal and acoustic insulation; the system's bituminous component is exclusively to protect the insulating element. Laying of the next gripping layer must be carried out in total adhesion and on top of the underlying 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/m ²	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.

EPS Graphite technical specifications (in compliance with current EN 13163 standards)

**THERMAL INSULATING PANELS
COUPLED WITH BITUMINOUS
MEMBRANES**

CHARACTERISTICS	U.M.	CODE	100 HEAT RESISTANCE R_D (mq k)/W EN 12667	150 HEAT RESISTANCE R_D (mq k)/W EN 12667	STANDARD
Available thicknesses	30	mm	1,00	1,00	
	40	mm	1,33	1,33	
	50	mm	1,67	1,67	
	60	mm	2,00	2,00	
	70	mm	2,33	2,33	
	80	mm	2,67	2,67	
	90	mm	3,00	3,00	
	100	mm	3,33	3,33	
	120	mm	4,00	4,00	
140	mm	4,67	4,67		
Panel Size	m		1 X 2	1 X 2	
Length tolerance	mm	Li	± 2	± 2	EN 822
Width tolerance	mm	Wi	± 2	± 2	EN 822
Thickness tolerance	mm	Ti	± 1	± 1	EN 823
Orthogonal tolerance	mm	Si	± 2/±1000	± 2/±1000	EN 824
Flatness tolerance	mm	Pi	± 5	± 5	EN 825
Declared thermal conductivity	10°C W/mk	λ_D	0.030	0.030	EN 12667
Dimensional stability	%	DS(N)i	± 0.2	± 0.2	EN 1603
Flexural strength	kPa	BSi	135	≥ 200	EN 12089
Compressive strength at 10% deformation	kPa	CS(10)i	≥ 100	≥ 150	EN 826
Tensile strength perpendicular to faces	kPa	TRi	≥ 150	≥ 250	EN 1607
Water absorption in the long term by total immersion	% Vol limit value	Wit	≤ 3	≤ 3	EN 12087
Water absorption in the long term by partial immersion	kg/m ²	WL(P)	≤ 0,5	≤ 0,5	EN 12087
Water vapour transmission by diffusion	ng/Pa.s.m	Mui/Zi	30-70	30-70	EN 12086
Reaction to fire	class	RF	E	E	EN 13501-1
Water absorption by capillarity	%	-	None	-	
Linear expansion coefficient	K ⁻¹	-	65x10 ⁻⁶	-	
Permeability to water vapor	mg/ (mhPa)	δ	0,009-0,020	0,009-0,020	EN 12086
Behavior when cutting	kPa		≥ 75	≥ 150	EN 12090
Cutting module	kPa	G	≥ 1000	≥ 1100	EN 12090
Specific heat capacity	J/(kg k)		1260	1450	UNI EN 12524
Temperature of use	°C		-40/+75	-40/+75	

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



We reserves the rights to change or modify the nominal values without prior notice or advice. The information contained in this data sheet are based on our experience. We cannot take any responsibility for a possible incorrect use of the products. The customer has to choose under their own responsibility a product fit for the intended use.

THERMAK
info@thermak.it
www.thermak.it

MATCO S.r.l.
Via Quadrelli, 69
37055 Ronco all'Adige (VR)
Tel. +39.045.6608111