



COLD FLEXIBILITY  
**-10 °C**

# PLANA P PLANA P mineral

**PLANA P and PLANA P MINERAL are plastomeric waterproofing membranes with excellent performance indicated for the waterproofing of all structures.**

 <p><b>Guaranteed Quality</b>          UNI EN ISO 9001:2008 and          UNI EN ISO 14001:2004</p>	 <p><i>All year membranes</i></p>
 <p><i>Product in compliance          with European Standards</i></p>	 <p><i>Lateral and endlap          sealing strips</i></p>
 <p><i>Polyglass is a member of          Green Building Council</i></p>	 <p><i>Easily flamed non-stick          polyethylene film</i></p>
 <p><i>Bituminous membrane          polymeric matrix          ageing control</i></p>	 <p><i>Manufacturers of          Bitumen Distillate          Polymer Membranes</i></p>



*Adds value!*

# PLANA P PLANA P mineral



## TECHNICAL DESCRIPTION

**PLANA P** and **PLANA P MINERAL** are plastomeric waterproofing membranes with outstanding performance, made of a latest generation distilled bitumen-based compound modified with POLYPROPYLENE and staple non-woven polyester fabric reinforcement. The general characteristics of these membranes guarantee good versatility and adaptability to various types of use. The special type of compound ensures remarkable characteristics of low temperature flexibility. The sophisticated technology with which these membranes is made guarantees the product's quality, stability, and durability.

## DESTINATION

PRODUCT	SINGLE LAYER		MULTI-LAYER				ROOT BARRIER	VAPOUR BARRIER	FOUNDATIONS		UNDER ROOFING TILE
	E.	U.H.P.	F.L.		U.L.				R.D.	G.	
			E.	U.H.P.	E.	U.H.P.					
3 mm					•	•		•			
4 mm			•	•	•	•		•	•		
5 mm			•	•	•	•		•	•		
4 kg Mineral			•								
4,5 kg Mineral			•								
5 kg Mineral			•								

F.L.: Finishing Layer - U.L.: Underlying Layer - R.D.: Rising Damp - G.: Groundwater - E.: Exposed - U.H.P.: Under Heavy Protection

**PLANA P** and **PLANA P MINERAL** membranes are suited for the waterproofing of traditional, metal, prefabricated civil and industrial of all structures. Waterproofing systems **under heavy protection** can be laid in single layers (whenever permitted by product) or multiple layers with minimum thicknesses of 7 mm (4+3 mm).

## APPLICATION: INSTRUCTIONS AND RECOMMENDATIONS

**PLANA P** can be provided with its upperside covered with a talc, sand, or a non woven polypropylene fabric. Its underside is protected and faced with **POLYFLAM EasyTorch** (reduced printed area increases product adhesion film). The non-stick polyethylene film is flamed during laying.

In the **MINERAL** version, the upperside is protected by an even layer of colored or natural mineral slate chips and features (**BYSTOP** patented) lateral and endlap sealing strip for easy overlapping. Available also in the high reflective version thanks to the use of a special white slate with high solar reflection rate used as top protective layer.

Support surfaces must be dry, clean, and sufficiently smooth and level. Application is made by light flaming with propane gas. Laying is quick and easy.



Talc



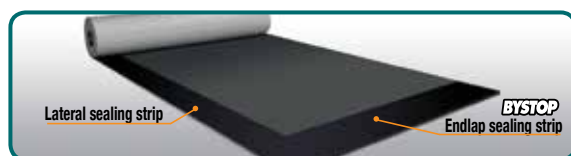
Sand



A non woven polypropylene fabric



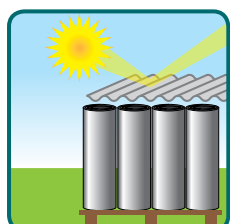
**POLYFLAM EasyTorch**



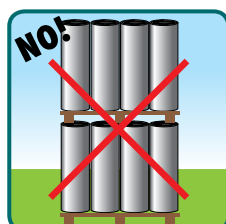
**BYSTOP** (endlap)

## STOCKING

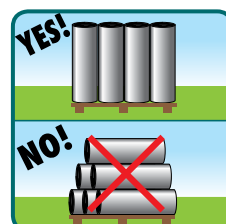
Keep the products in a dry place, away from direct sunlight. Do not place the pallets, one on top of another and the rolls must always be stocked in a vertical position. The contact with solvents and organic liquids may damage the product. Avoid application if the temperature is excessively low or high, avoid stamping (shoes with crampons, small objects or sharp edges). For further information contact Polyglass SpA Technical Office.



Keep out of direct sunlight



Avoid stocking pallets without evenly distributing the load



Keep the rolls standing



Absolutely avoid puncturing the product

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# TECHNICAL SPECIFICATIONS

TEST METHOD	TECHNICAL CHARACTERISTICS	UNIT OF MEASURE	NOMINAL VALUES	NOMINAL VALUES
EN 1848-1	LENGTH	m	≥10	≥10
EN 1848-1	WIDTH	m	≥1	≥1
EN 1848-1	STRAIGHTNESS	mm/10 m	Pass	Pass
EN 1849-1	THICKNESS	mm	4 (-0,2)	NPD
EN 1849-1	MASS PER UNIT AREA	kg/m <sup>2</sup>	NPD	4 (±10%)
EN 1928-B	WATERTIGHTNESS	kPa	Pass	Pass
EN 1928-B	WATERTIGHTNESS AGAINST ARTIFICIAL AGEING	kPa	Pass	Pass
EN 1928-B	WATERTIGHTNESS AGAINST CHEMICAL	kPa	Pass	Pass
EN 13897	WATERTIGHTNESS AFTER STRETCHING	%	NPD	NPD
EN 13501-5	EXTERNAL FIRE PERFORMANCE	-	NPD	NPD
EN 13501-1	REACTION TO FIRE	Euroclass	E	E
EN 12316	PEEL RESISTANCE	N/50 mm	NPD	NPD
EN 12317	SHEAR RESISTANCE	N/50 mm	NPD	NPD
EN 12311-1	TENSILE PROPERTIES			
	MAXIMUM LOAD AT BREAK			
	Longitudinal	N/50 mm	650 (±20%)	650 (±20%)
	Transversal	N/50 mm	400 (±20%)	400 (±20%)
	ELONGATION AT BREAK			
EN 12691-A	Longitudinal	%	45 (±15)	45 (±15)
	Transversal	%	45 (±15)	45 (±15)
EN 12730-A	RESISTANCE TO IMPACT	mm	≥800	≥800
EN 12730-A	RESISTANCE TO STATIC LOADING	kg	≥10	≥10
EN 12310-1	RESISTANCE TO TEARING			
	Longitudinal	N	150 (±30%)	150 (±30%)
EN 12310-1	Transversal	N	170 (±30%)	170 (±30%)
EN 1107-1	DIMENSIONAL STABILITY	%	≤0,3	≤0,3
EN 1108	FORM STABILITY UNDER CYCLIC TEMPERATURE CHANGE	%	NPD	NPD
EN 1109	COLD FLEXIBILITY	°C	≤-10	≤-10
EN 1110	FLOW RESISTANCE AT ELEVATED TEMPERATURE	°C	≥110	≥110
EN 1110	ARTIFICIAL AGEING BEHAVIOUR (FLOW RESISTANCE)	°C	≥100	≥100
EN 1296	ARTIFICIAL AGEING BEHAVIOUR (VISIBLE DEFECTS)	-	Pass	NPD
EN 12039	ADHESION OF GRANULES	%	NPD	≤30
EN 1931	WATER VAPOUR PROPERTIES μ	-	130000 (±20%)	130000 (±20%)
EN 1931	TRANSMISSION PROPERTIES	-	±50% initial value	±50% initial value
EN 1296	WATER VAPOR AFTER THERMAL AGING μ	-	±50% initial value	±50% initial value
EN 1850-1	VISIBLE DEFECTS	-	ABSENT	ABSENT

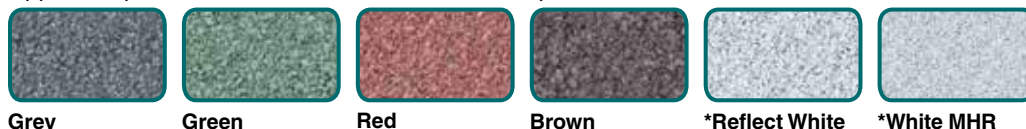
In compliance with EN 13707 products standards (layers for roofing), EN 13970 product standards (vapour control layer) and EN 13969 TYPE T products standards (layers for foundations).

## DIMENSIONS - PACKAGING

PRODUCT	THICKNESS mm	WEIGHT kg/m <sup>2</sup>	DIMENSIONS m
PLANA P	3	-	1x10
PLANA P	4	-	1x10
PLANA P	5	-	1x8
PLANA P MINERAL (Grey)	-	4	1x10
PLANA P MINERAL (Other colours)	-	4	1x10
PLANA P MINERAL (Grey)	-	4,5	1x10
PLANA P MINERAL (Other colours)	-	4,5	1x10
PLANA P MINERAL (Grey)	-	5	1x8
PLANA P MINERAL (Other colours)	-	5	1x8

## AVAILABLE COLOURS

Upperside protected with colored mineral slate chips:



\* High reflection colors (Cool Roof).

**Reflect White** - SRI (Solar Reflect Index) ASTM E 1980-11: 57%<sup>1</sup>; R<sub>i</sub>: 48%; E: 94%.

**White MHR** - SRI (Solar Reflect Index) ASTM E 1980-11: 85%<sup>1</sup>; R<sub>i</sub>: 69%; E: 94%.

<sup>1</sup> Initial values according to ASTM, referring to new materials.

Considering the various situations of use, the numerous types of support surfaces and the possibilities for use inside COMPLEX WATERPROOF LAYERING, Polyglass SpA cannot assume any liability for damages derived from the product's results in terms of function or aesthetics. Rev. 1-19



FLAT ROOF WITH PEDESTRIAN ACCESS



FLAT ROOF WITH LIMITED ACCESS



PROFILED METAL DECKS



INDUSTRIAL SAWTOOTH ROOFS



CURVED ROOFS



PITCHED ROOFS



FOUNDATIONS



UNDERGROUND CAR PARK



RAISED CAR PARK



ROOF GARDENS



BRIGDES AND VIADUCTS



RESERVOIRS AND CANALS



GALLERY AND TUNNEL



RENEWAL WATERPROOFING CONVERING ONLY  
RELINING WITH INSULATING MATERIAL  
SPECIAL RE-ROOFING WORK



DETAILS

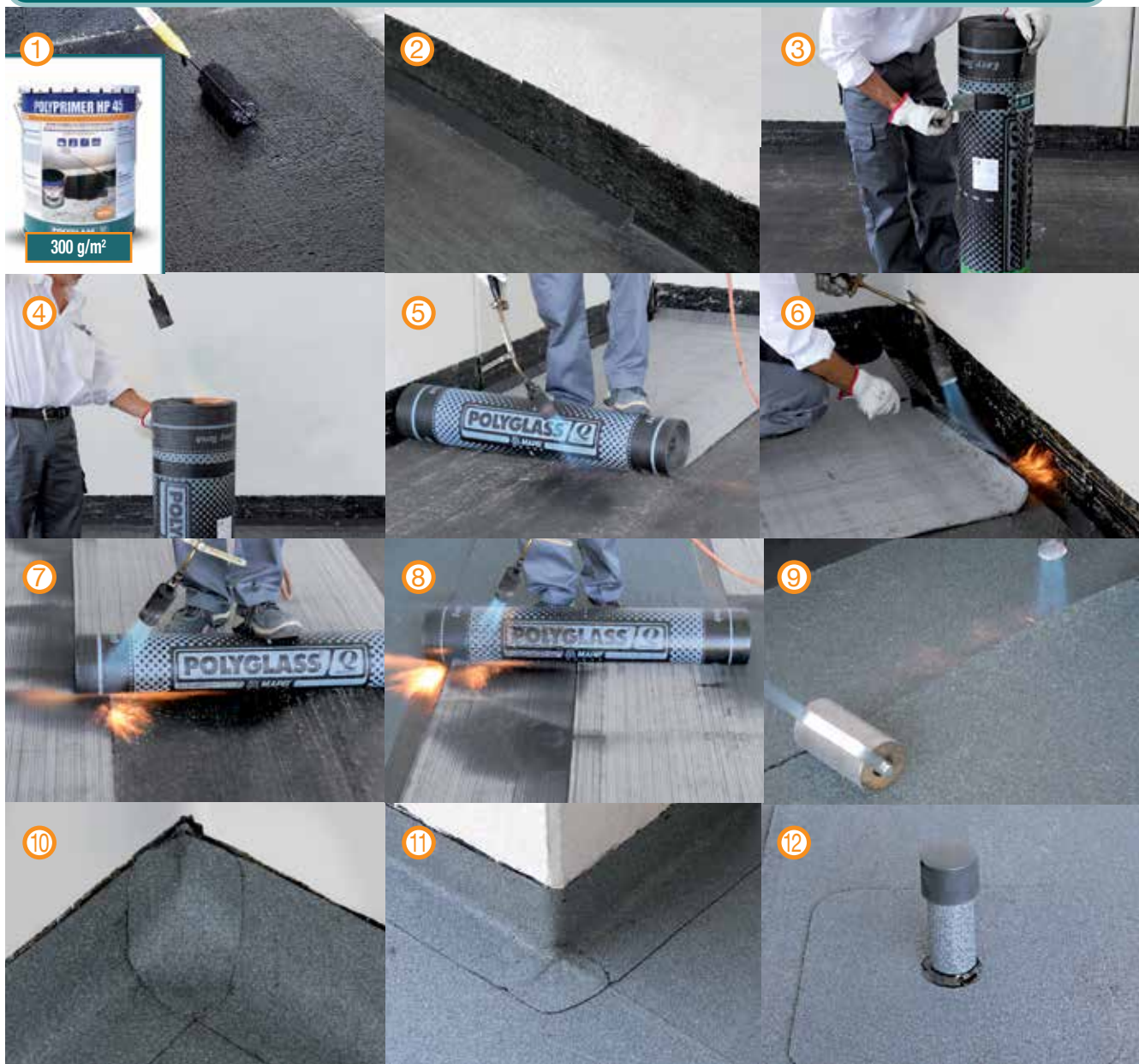


SPECIAL ROOFS

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# WATERPROOFING MEMBRANES

## APPLICATION METHOD



- ① Treat the area to be waterproofed with bituminous primer (POLYPRIMER HP 45 Professional).
- ② Position the "Bordangolo" near the horizontal-vertical joint.
- ③ Completely strip away the product identification tape.
- ④ In the colder months, we recommend heating up the roll of membrane before applying it.
- ⑤ Position and apply the sheet by flaming its bottom surface.
- ⑥ Pull the sheet up to a certain height against vertical surfaces.
- ⑦ Apply the second sheet with adequate overlapping.
- ⑧ Lay the second layer by overlapping. Do not cross the sheets.
- ⑨ Roll the overlapping areas using the special pressing roller.
- ⑩ Example of internal corner.
- ⑪ Example of external corner.
- ⑫ Example of vent pipe.

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*Adds value!*

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