Polystrada SA Plus

Adhesive waterproofing prefabricated SAMI road geocomposite membrane made from highly modified bitumen, designed as an anti-pumping and anti-cracking interlayer, serving a significant reinforcing function for strengthening and the distribution of particularly heavy loads

POLYSTRADA SA PLUS has been designed and produced to provide a waterproofing contribution and allow stress in the pavement structure to be relieved/absorbed. This membrane is an innovative solution for reinforcing asphalt structures and replaces reinforcing mesh or other traditional systems (SAMIs, geotextiles, etc.) in the construction of new road pavements and maintenance work.
POLYSTRADA SA PLUS is an elastomeric **prefabricated geomembrane comprising a dual self-adhesive bituminous compound**, and whose reinforcement consists in a non-rotting glass mesh with a melting point ≥ 250 °C and a high-strength polyester nonwoven fabric, with CE marking. Excellent dimensional stability, compatible with future milling, and excellent mechanical strength properties.
It is suitable for **waterproofing (to address the problem of pumping), as a barrier to crack propagation, and for reinforcement and load distribution on road pavements. Having an important structural function, its use is recommended when dealing with high-traffic situations and roads that take heavy loads and/or when the existing pavement to be rehabilitated is extremely distressed**.
POLYSTRADA SA PLUS comes with the upper face finished with aggregate to allow for road construction equipment to be operated and driven over the treated surface without any problem.
POLYSTRADA SA PLUS is part of the family of products incorporating ADESO® technology, an innovative self-adhesive compound that delivers excellent adhesion to all surfaces along with remarkable longevity. The bond is strengthened further by the heat of the asphalt pavement and under the effect of traffic and sunlight. Its self-adhesive properties mean **POLYSTRADA SA PLUS** retains all its original properties, as the membrane is cold applied, without the need for torching.

Flexibility at low temperature
-25 °C

CE 1370 PRODUCT COMPLIANT WITH EUROPEAN STANDARD

ADVANTAGES

- **Meets the requirements of standard EN 13249** (geotextile for roads and railways), **standard EN 14695** (bridges and viaducts), and **standard EN 13707** (waterproofing membranes);
- **Crack propagation resistance**, by virtue of the elastomeric blend's high polymer content, and the use of a special carrier, delivering excellent elasticity and adhesion qualities, effectively sealing existing cracks and reducing stress, while stopping these cracks from propagating to the upper courses;
- **Waterproofs and stops the passage of water into the lower layers**, preventing the phenomena of pumping and migration of fines from the lower structure;
- **Environmentally friendly system**, cold applied and compatible with all asphalt mixes, **including recycled mixes**;
- **Entirely millable and recyclable** without the need for special equipment;
- When it comes to **new road projects**, using this membrane allows **asphalt - including recycled mixes - to be laid to shallower depths, significantly speeding up the construction schedule and reducing project costs**;
- **Increases the road surface's service life significantly**, resulting in a drastic reduction in maintenance work compared to traditional surfaces;
- **The carrier's excellent mechanical properties** enable the membrane to distribute the most severe stress on the pavement caused by vehicle traffic;
- **Elasticity:** designed to dampen vibrations produced by traffic travelling on the road, and reduce fatigue stress in highly trafficked roads.

SPECIFICATION CLAUSE

POLYSTRADA SA PLUS elastomeric prefabricated waterproofing geocomposite membrane manufactured by Polyglass SpA, to be laid as an interlayer between the pavement's load-bearing courses - between the base and binder, or binder and wearing course - to serve a reinforcing function and act as a barrier to stop existing cracks propagating to the surface.
Self-adhesive 2.5 mm-thick geocomposite membrane comprising a latest generation SBS-polymer-modified distilled bitumen compound, with a composite fibreglass mesh carrier with a melting point over 250 °C laminated with a high-strength polyester nonwoven fabric, with CE marking. The non-metal structure and absence of contaminants means the membrane is compatible with future milling of the road surface without needing to be taken to a special landfill
With flexibility down to -25 °C, the membrane has a backing film on its self-adhesive underside to be peeled off as it is applied, and a mineral finish on the upper face that is highly compatible with asphalt mixes and can take road construction equipment straight away.
The top's special elastomeric compound has a melting point in the 130 to 140 °C range, ensuring compatibility and bonding with the overlay. On the underside, the self-adhesive property improves further over time under the effect of traffic and sunlight, ensuring that the lower courses are impermeable to water, and preventing the pumping action that causes fines to be drawn out of the structure, ultimately leading to its collapse.

POLYGLASS® MAPEI GROUP

Polystrada SA Plus

TECHNICAL CHARACTERISTICS

STANDARD	TECHNICAL CHARACTERISTICS	UNIT OF MEASURE	NOMINAL VALUES POLYSTRADA SA PLUS
EN 1848-1	WIDTH	m	≥ 1
EN 1848-1	LENGTH	m	≥ 15
EN 1849-1	THICKNESS	mm	2,5
EN 1848-1	STRAIGHTNESS	mm/10 m	Meets the requirements
EN 1107-1	DIMENSIONAL STABILITY	%	+0,1/-0,1
EN 12730-A	RESISTANCE TO STATIC LOADING (ON SOFT SUBSTRATE)	kg	≥ 15
EN 1109	FLEXIBILITY AT LOW TEMPERATURE	°C	≤ -25
EN 1110	FLOW RESISTANCE AT ELEVATED TEMPERATURE	°C	≥ 100
EN 1296	ARTIFICIAL AGEING BY EXPOSURE TO ELEVATED TEMPERATURE	-	No defect
EN 1850-1	VISIBLE DEFECTS	-	None
TESTING WITH REFERENCE TO STANDARD EN 14695 (bridges and viaducts)			
EN 12317-1	SHEAR RESISTANCE Longitudinal Transversal	 N/50 mm N/50 mm	 1200 (±20%) 1200 (±20%)
EN 12311-1	TENSILE STRENGTH Longitudinal Transversal ELONGATION AT BREAK Longitudinal Transversal	 N/50 mm N/50 mm % %	 2000 (±20%) 2200 (±20%) 4,0 (±0,2) 4,0 (±0,2)
EN 13653	SHEAR STRENGTH	N/mm^2	≥0,35
EN 13596	DETERMINATION OF BOND STRENGTH On concrete On asphalt mix	 N/mm^2 N/mm^2	 0,35 (±5%) 0,40 (±5%)
EN 14691	COMPATIBILITY BY HEAT CONDITIONING	N/mm^2 %	0,45 C=19,9
EN 14692	RESISTANCE TO COMPACTION OF AN ASPHALT LAYER	-	Waterproof
EN 14693	BEHAVIOUR OF BITUMEN SHEETS DURING APPLICATION OF MASTIC ASPHALT S Δt i	 % mm n°	 0,0 0,40 0,0
EN 14224	DETERMINATION OF THE RESISTANCE CAPACITY TO FESSURE TO -15 °C	°C	Meets the requirements
TESTING WITH REFERENCE TO STANDARD EN 13249 (geotextile for roads and railways)			
EN 14694	WATERTIGHTNESS (DYNAMIC PRESSURE - 500 kPa - 1000 CYCLES)	-	Meets the requirements
EN 13433	DYNAMIC PERFORATION TEST (CONE DROP TEST)	mm	≥ 7
EN 12236	PUNCTURE RESISTANCE TO STATIC LOADING (CBR TEST) Force at break Elongation at break	 kN mm	 ≥ 2,2 ≥ 50
EN 10319	TENSILE STRENGTH Longitudinal Transversal ELONGATION AT BREAK Longitudinal Transversal	 kN/m kN/m % %	 40 (±20%) 40 (±20%) 58 (±5%) 67 (±5%)
EN 14030	RESISTANCE TO ALKALINE LIQUIDS ELONGATION AT BREAK Longitudinal Transversal RESIDUAL RESISTANCE Longitudinal Transversal	 % % % %	 80 (±5%) 130 (±5%) 850 (±5%) 110 (±5%)
EN 12224	RESISTANCE TO ATMOSPHERIC AGENTS ELONGATION AT BREAK Longitudinal Transversal RESIDUAL RESISTANCE Longitudinal Transversal	 % % % %	 110 (±5%) 85 (±5%) 110 (±5%) 108 (±5%)
EN 14223	WATER ABSORPTION	%	≤ 2,7
EN 15381	DETERMINATION OF BITUMEN RETENTION	Kg/m^2	0,06

** Without pre-treatment according to clause 4.3.8 of EN 14695.*

PACKAGING

PRODUCT	THICKNESS mm	WEIGHT kg/m^2	DIMENSIONS m
POLYSTRADA SA PLUS S R	2,5	-	1x15

STORAGE

The product comes in rolls and is packed upright on shrink-wrapped pallets.
Use always a weight distributing element if you are forced to stack the pallets one on top of each other. A solid distributing element will avoid damages to the rolls underneath.
Contact with solvents or organic liquids can damage the product.
Keep the product in a dry place, out of direct sunlight, protected from heat sources and freezing temperatures.

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INSTALLATION TIPS

All installation work should be carried out with an ambient temperature of at least +5°C, and with a surface temperature greater than +10 °C.
Surfaces due to be covered with the membrane must be dry, clean, and free of all foreign matter. Any cracks (wider than 1 mm) in the substrate must be repaired with the relevant POLYSTRADA Sealant. The material must be rolled out parallel to the direction of travel.
The membrane must be side lapped by 8-10 cm and end lapped by at least 12-15 cm to ensure the layer laid provides mechanical continuity.
Roll out **POLYSTRADA SA PLUS**, making sure the adhesive side faces down. Peel off half of the mono-silicone coated backing film on the underside of the roll, attach the membrane to the load-bearing structure, then peel off the other half, being careful not to allow wrinkles to form on the underside. For optimal adhesion, we recommend rolling the membrane with a static roller compactor.
The membrane is self-adhesive and hence does not need to be fixed mechanically or torched on. Thanks to the aggregate finish, **POLYSTRADA SA PLUS** does not stick to the wheels of the construction equipment, making the job of laying the mix easier and encouraging it to bond.
The asphalt overlay must then be installed at a temperature of at least +150 °C to ensure a perfect bond and give a minimum thickness of at least 5 cm once compacted. In more critical situations - such as around bends, roundabouts, or where the pavement is in a particularly poor state of repair - the thickness of the asphalt mix will need to be reassessed accordingly.
The heat of the asphalt mix laid on top of the **POLYSTRADA SA PLUS** geomembrane further improves the membrane's self-adhesive properties, promoting a strong bond, to the point where the layer underneath is completely saturated.
When dealing with environmental installation conditions that prove critical - owing to the presence of dust or moisture on the substrate - it may be advisable to use the solvent-based adhesion-promoting primer POLYPRIMER HP 45 PROFESSIONAL.
For further details on application, please contact the Polyglass SpA Technical Support Department.

SAFETY REGULATIONS

The polymer bitumen membranes, manufactured by Polyglass SpA, are made from bitumen distilled from crude oil and do not contain tar (derived from coal), asbestos or chlorine.

DISCLAIMER

The values given are approximate average data relating to the current product range and may be edited or updated by Polyglass SpA at any time without any prior notice.
As Customer or User, it is your responsability to check that the technical data sheet you have is valid for the batch of product in your hands and, whatever the case, that you have the latest version issued.
Always refer to the latest up-to-date version of the Technical Data Sheet and relevant Declaration of Performance, both of which you can find on our site www.polyglass.com.
As the End User, it is your responsibility to check that the product is fit for its intended purpose.

PRODUCT FOR PROFESSIONAL USE

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