



INFINITY PRO ROAD

Compound
SBS

Cold flexibility
-25°C

PROPERTIES

INFINITY PRO ROAD is a SAMI (Stress Absorbing Membrane Interlayer) geo-composite membrane made of distilled bitumen modified with SBS (Styrene-Butadiene-Styrene) polymers, with an adhesive coating on the lower face. INFINITY PRO ROAD greatly extends the useful life of asphalt pavements and is most suitable for the reinforcement of pavements subjected to intense dynamic stresses or that are highly degraded; it significantly extends the maintenance intervals of pavements with considerable cost savings. Unlike traditional systems with geogrid nets, INFINITY PRO ROAD reduced thickness systems are designed for installation directly onto a milled surface, for optimal pavement reconstruction and a swift, efficient and cost-effective work sequence. INFINITY PRO ROAD systems are designed for installation without the use of free flames; the self-adhesive lower face allows for cost-effective, time saving, safe, quick and easy installation at ambient temperature.

REINFORCEMENT

Geo-composite multilayer reinforcement consisting of a high-duty top performing non-woven polyester fabric and multidirectional fiberglass.

RECOMMENDED INTENDED USE

SAMI waterproofing geo-composite designed for the reinforcement, stress-relief, repair and maintenance, of new and/or deteriorated asphalt pavements.	INFINITY PRO ROAD 2,5 mm
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AVAILABLE SURFACE FINISHES

Upper surface	Fine sand with 10 cm siliconized film at sidelaps.
Lower surface	Silicone release film, split lengthwise along the centerline for easy placement, alignment and installation of the rolls

USE & APPLICATION

INFINITY PRO ROAD is specifically designed to be used as SAMI waterproofing geo-composite for the reinforcement, stress-relief, repair and maintenance of new and/or deteriorated asphalt pavements. It is a highly effective reinforcement system studied for the restoration of deteriorated asphalt pavements, that provides exceptional stress-relief, improves fatigue life and prevents or mitigates cracking and rutting. In fact, when correctly installed between:

- road substrate/embankment and new asphalt layers (binder+ wearing course)
- milled surface of existing subgrade or degraded pavement and the new asphalt layers (binder + wearing course)

INFINITY PRO ROAD prevents:

- propagation of fatigue cracking (**bottom-up cracking**)
- propagation of **reflective cracking**
- permanent deformations caused by **rutting**
- the rise of water and of fine particles from the deepest unbound layers due to the dynamic stresses generated by vehicular traffic (**pumping effect**)

INFINITY PRO ROAD is fast and safe to apply and is a time and cost saving product.

Some general recommendations:

- INFINITY PRO ROAD must be stored in a vertical position and single stack, in covered and ventilated spaces away from direct sunlight, frost or weather agents. Do not store under tarpaulins.
- Avoid:
 - long storage on site if not properly sheltered;
 - exposure to sunlight until the time of application;
 - long open air storage at temperatures above 28 °C.
- Rolls of INFINITY PRO ROAD shall be handled with care, crushing or slamming of rolls shall be avoided at all times. Do not handle with sharp or pointed instruments.
- Do not remove the siliconized film of INFINITY PRO ROAD before laying.
- Install at a minimum surface temperature above 10°C in dry ambient conditions.
- The receiving surface shall be thoroughly clean, dry and free of any dust, debris, loose particles, moisture, frost or combinations thereof which may prevent proper adhesion of the product to the receiving substrate. Wet brushing should be avoided.
- The residual thickness of the milled substrate shall be minimum 4 cm.
- Milling grooves should not be excessively deep
- Superficial application should be strictly avoided: INFINITY PRO ROAD must be positioned under a minimum of 6 cm of asphalt, measured after compaction.
- In particularly critical cases (i.e. high-speed roads with high traffic loads, high-speed sections, curved sections with high tangential stresses or particularly deteriorated asphalt pavings) the minimum pavement thickness shall be adequately increased
- To avoid damage, detachment or uplifting of the installed INFINITY PRO ROAD geo-composites, any rubber wheeled site vehicles shall be operated at very low speed, avoiding sudden accelerations, braking or sharp turns.
- No tracked vehicles shall be allowed over INFINITY PRO ROAD geo-composites.

For complete product information, recommendations and correct installation, refer to the "PRO ROAD" catalogue provided by Copernit.

Properties	Test Method	Unit	INFINITY PRO ROAD 2,5 mm	Toll.
Length	EN 1848-1	m	15 (-1%)	≥
Width	EN 1848-1	m	1,0 (-1%)	≥
Thickness	EN 1849-1	mm	2,5	±5%
Tensile strength (at break) L/T	EN 12311-1	kN/m	35/35	±20%
Elongation (at break) L/T	EN 12311-1	%	30/30	±15
Tear resistance (nail test) L/T	EN 12310-1	N	500/500	±30%
Resistance to static loading	EN 12730 (A)	kg	25	≥
Impact resistance	EN 12691	mm	1500	≥
Dimensional stability	EN 1107-1	%	±0,1	≤
Flexibility at low temperature	EN 1109	°C	-25	≤
Flow resistance at elevated temperature	EN 1110	°C	100	≥
Watertightness (method B)	EN 1928	kPa	200	≥
Bond strength	EN 13596	N/mm ²	0,4	≥
Dynamic watertightness	EN 14694	kPa	500	≥
Resistance to compaction of an asphalt layer	EN 14692	--	Pass	--
Reaction to fire	EN 13501-1	Class	E	--

**Experimentation carried out in collaboration with the Polytechnic University of Marche
UNIVPM – Ancona (Italy) – Prof. Ing. F. Canestrari**

Interface shear strength - T_{peak} (ASTRA test - Ancona Shear Testing Research and Analysis at 20°C, normal stress applied $\sigma = 0.2MPa$)	ASTRA test UNI/TS 11214 UNIVPM - ICEA	MPa	Modified asphalt concrete: ≥0,30 Unmodified asphalt concrete: ≥0,30
Interface shear strength - T_{peak} (ASTRA test - Ancona Shear Testing Research and Analysis at 40°C, normal stress applied $\sigma = 0.2MPa$)	ASTRA test UNI/TS 11214 UNIVPM - ICEA	MPa	Modified asphalt concrete: ≥0,20 Unmodified asphalt concrete: ≥0,20
3 point static bending resistance at 20 °C, with 5% voids (expressed as reinforcement performance factor " k_s ", compared to a non-reinforced system of reference)	3PB Three Point Bending test UNIVPM - ICEA	k_s	15 mm deflection: Modified asphalt concrete: 9,49 Unmodified asphalt concrete: 8,95
			30 mm deflection: Modified asphalt concrete: 19,77 Unmodified asphalt concrete: 14,35
3 point static bending resistance at 20 °C, subject to the % of voids in the bituminous conglomerate (expressed as reinforcement performance coefficient, " k_{norm} ", compared to an asphalt concrete of reference with 6% voids and 15mm deflection)	3PB Three Point Bending test UNIVPM - ICEA	k_{norm}	Modified asphalt concrete: Voids 3%: 1,22 Voids 6%: 1,00 Voids 9%: 1,16 Voids 12%: 1,43 Voids 15%: 1,14
			Unmodified asphalt concrete: Voids 3%: 0,99 Voids 6%: 1,00 Voids 9%: 1,22 Voids 12%: 1,52 Voids 15%: 1,08
Dynamic 4-point flexural resistance ($T = 20$ °C, frequency 1Hz, sinusoidal loading maximum amplitude 1.6kN)	4PB Four Point Bending test UNIVPM - ICEA	N_f n° cicli a fessurazione	≥24000*
Resistance to reflective cracking – Reflective Cracking test with Wheel Tracker – 2017 updated test configuration	UNIVPM – ICEA 2017 test protocol	n° cycles to collapse	$T=30^\circ C$, load 520 N: Modified asphalt concrete: ≥14000* Unmodified asphalt concrete: ≥10000*
		n° cycles to collapse	$T=30^\circ C$, load 660 N: Modified asphalt concrete: ≥13000*

(*) Tests interrupted after exceeding time limits without cracking and without collapse of the specimen