NORDFLEX ROUTE

Modified SBS waterproofing membrane for civil engineering works

Pre-fabricated waterproofing membrane made of distilled bitumen and elastomeric polymers (SBS) reinforced with a woven non woven single strand composite polyester fabric, with high mechanical characteristics and excellent dimensional stability.
The particular structure of these products make them suitable for the waterproofing of complex works where the stress on the waterproofing system require the use of products with proven reliability.
Due to the characteristics, the membranes of the NORDFLEX ROUTE series are used with success for the waterproofing of both civil and industrial works, in particular for those with great mechanical stress such as: bridges, viaducts, water works, foundations, parking lots.

Reinforcement: Single strand polyester

Compound: Elastomeric polymer bitumen (SBS)

Upper finish: Sand

Lower finish: PE film

Intended use:

EN 13707 Continuous roofs (certificate no. CE0958-UKCA0120): Under heavy protection / Under asphalt

EN 14695 Viaducts (certificate no. CE0958-UKCA0120)

EN 13969 Retaining walls (certificate no. CE0958-UKCA0120)

Application method: Torch

METHODS OF APPLICATION

For the application of the membrane the use of heat is generally used by means of a gas torch or specific hot air machine. Use protective devices required by law. The application by heat is not suggested when on heat sensitive materials (polystyrene insulation).

- Coordinate the operations in a way to not cause damage to the construction elements and underground structure. Avoid to leave the structure for the night or for periods of prolonged work interruptions without having been properly sealed.
- **The application surface must not have any depressions to avoid the risk of ponding water, the slope must be at least 1.5% on concrete decks and 3% for steel or wooden ones, this to guarantee a proper run off of rainwater.**
- The water drainage spouts should be sufficiently big enough to allow for rain water to be eliminated in an efficient way.
- Prepare cementitious substrates, including verticals and details, with a bituminous primer either by brush or airless, approx. 300/400 g/m^2.
- Allow this preparation layer to dry before proceeding with any other operation.
- With prefabricated constructions, apply a suitable reinforcing strip along all joints. In the presence of construction joints, prefabricated panels or metal decks, suitable expansion joints are to be considered.
- The membranes must be applied to the substrate fully bonded.
- All details, perimeters, verticals, change of slope as well as projecting area must be fully bonded.
- If using the membrane for application under hot asphalt, the thickness of the binder course must be minimum 6 cm with a granulometry of 0-15 mm, while for the surface course the thickness must be minimum 4 cm and granulometry of 0-12 mm.
- If used on a laying surface with a residual humidity greater than 5%, it is mandatory to apply PRIMER EPOX, as indicated in the product technical data sheet.
- In case of refurbishing an existing driveway cover, the product must be applied on original concrete support (all existing waterproofing layers must be removed).

For further information and news it is recommended to consult the NORD BITUMI technical literature; our Technical Office is always available to evaluate particular problems and to provide the necessary assistance to best apply our waterproofing membranes.

Technical Data Sheet

NORDFLEX ROUTE

Modified SBS waterproofing membrane for civil engineering works

Technical Data Sheet

APPLICATION

- ✓ On cementitious surfaces and similar apply, by roller or airless, bituminous primer, approx. consumption 300 g/m^2.
- ✓ Apply by torch application a 25 cm strip of membrane reinforced with polyester along all vertical up stands.
- ✓ To have all overlaps with the slope, position the membrane always starting from the lowest point, alternating the overlapping areas.
- ✓ To facilitate the flow of water towards the drains, so as to encounter as few joints as possible between the sheets, the direction of installation of the membranes must be longitudinal to the direction of the slope of the roof.
- ✓ In case of installation of the waterproof sealing element on top of an insulating package, the main direction of the insulating panels must be perpendicular to the direction of installation of the membranes, taking care to install the panels with staggered quincunx combinations.
- ✓ Cut the corners of membrane sheet which will be laid under the nest sheet at a 45° angle (10x10 cm).
- ✓ The joints, both side and head, must be respectively overlapped by 10 & 15 cm.
- ✓ The second layer of membrane will be applied astride and over the first one, always in the same direction, and approx. 1/4 of its length from the previous sheet.
- ✓ The bituminous membrane will be applied with a propane gas torch to the substrate. It is necessary to heat the entire surface, except for the side & head laps, making sure that the compound forms a liquid mass in front of the roll to assure that it saturates any superficial porosity.
- ✓ The side laps (10 cm) and head laps (15 cm) will be heat welded with an appropriate torch; during this stage the overlaps should be pressed by using a roller (15 kg) from which a bead of compound should flow and therefore avoiding to have to iron the overlaps.
- ✓ Apply the vertical membrane sheet having the same characteristics of the waterproofing membrane and dimensions equal to the width of the roll, making sure that it overlaps the horizontal one by at least 10 cm, heating it with a gas torch and squeezing it with a trowel until a bead of compound appears from underneath.
- ✓ The height of the verticals must be equivalent or superior to the finished surface by at least 15 cm.
- ✓ Apply the hot asphalt directly over the NORDFLEX ROUTE using a paving-machine. The bituminous emulsion is required only on the perimeter area. The thickness of the structural course has to be minimum of 6 cm (size 0-15 mm) while the thickness of the friction course has to be 4 cm at least (size 0-12 mm).

RECOMMENDATIONS

To best use the technical characteristics of bituminous membranes and guarantee the maximum performance and durability of the jobs where they are used, some simple but fundamental rules must be respected.

- The rolls are to be stored in an upright position, indoors in a dry and ventilated area, away from heat sources. Absolutely avoid the stacking of rolls and pallets for storage or transport to avoid possible deformations which may compromise a perfect installation. It is recommended to store the product at temperatures above 0°C.
- The rolls shall be kept in a warm or heated storage area during application, should the workability of the material deteriorate or become stiff and difficult to install during application, these should be returned to the heated storage area and substituted with new rolls. The rolls that are temporarily stored on the roof before application, shall be kept elevated by being left on their own pallets and shall be covered and protected from the weather.
- The application surface must be smooth dry & clean.
- The application surface must be previously treated with a suitable bituminous primer, to eliminate dust and enhance the adhesion of the membrane.
- The application surface must not have any depressions to avoid the risk of ponding water, the slope must be at least 1.5% on concrete decks and 3% for steel or wooden ones, this to guarantee a proper run off of rainwater.
- The application must be done at temperature higher than +5°C.
- The application must be interrupted in adverse weather conditions (high humidity, rain, etc.).
- The pallets on which the rolls are packaged are intended for normal warehouse use.
- The materials on stock should be rotated following a first in first out rotation.

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TECHNICAL SPECIFICATIONS

CHARACTERISTICS	TESTING METHOD	M.U.	TOLERANCE	P	
Length/Width	EN 1848-1	m	MLV ≥	10,0 / 1,0	8,0 / 1,0
Visible defects	EN 1850-1	visual		None	
Thickness	EN 1849-1	mm	MDV ±5%	4	5
Straightness	EN 1848-1	mm/10 m		< 20	
Watertightness	EN 1928	kPa	MLV ≥	60	
External Fire Performance	EN 13501-5			F ROOF	
Reaction to fire	EN 13501-1	class		NPD	
Maximum tensile strength (L/T)	EN 12311-1	N/50 mm	MDV -20% +50%	1200/1000	
Elongation (L/T)	EN 12311-1	%	MDV -15 +30	45/45	
Resistance to tearing (L/T)	EN 12310-1	N	MDV -20% +50%	300/300	
Dimensional stability	EN 1107-1	%	MLV ≤	0,5	
Peel resistance of joints (L/T)	EN 12316-1	N/50 mm	MDV ±20N	NPD/NPD	
Cold flexibility	EN 1109	°C	MLV ≤	-25	
Cold flexibility after ageing	EN 1296	°C	MDV +15°C	-20	
Flow resistance	EN 1110	°C	MLV ≥	100	
Flow resistance after ageing	EN 1296	°C	MDV -10°C	90	
Joint strength (shear resistance) (L/T)	EN 12317-1	N/50 mm	MDV -20% +50%	1100/900	
Resistance to impact	EN 12691-B	mm	MLV ≥	1500	
Resistance to static loading	EN 12730-A	Kg	MLV ≥	25	
Root resistance	EN 13948			NPD	
Watertightness after ageing	EN 1296	kPa	MLV ≥	60	
Bond strenght	EN 13596	N/mm^2	MLV ≥	0,41	
Shear strenght	EN 13653	N/mm^2	MLV ≥	0,23	
Compatibility by heat conditioning	EN 14691	%	MLV ≥	191	
Crack Bridging Ability	EN 14224	°C	MLV ≥	-20	
Resistance to dynamic water pressure	EN 14694			pass	
Resistance to compaction of an asphalt layer	EN 14692			pass	
Behaviour of bitumen sheets during application of mastic asphalt	EN 14693	%, mm, %		NPD	

MDV : value declared by the manufacturer associated with a declared tolerance.
MLV : limit value, minimum or maximum, declared by the manufacturer.
NPD : No Performance Declared in accordance with the EU Construction Products Directive.

PACKAGING

PRODUCT	ROLL SIZE	THICKNESS MM	SQUARE METRES PER PALLET
Nordflex Route 4 mm	10 m x 1 m	4	240
Nordflex Route 5 mm	8 m x 1 m	5	184

The waterproofing membrane based on distilled bitumen and polymers, as shown in this data sheet does not require the issue of a MSDS, because it does not contain dangerous substances. The information data sheet for the proper use of products is available. The technical data given is based on average values obtained during production. We reserve the rights to change or modify the nominal values without prior notice or advice. The informations 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.
26/02/2025 - This version supersedes all previous ones.