# SBS NiloFlex

## THE PRODUCT

**NiloFlex** are elastomeric waterproofing membranes, manufactured in an advanced continuous calendaring process by saturating and coating a synthetic carrier with a waterproofing compound made of a special grade of bitumen, modified with SBS polymers. While the SBS polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **NiloFlex** are established by the nonwoven continuous filament spunbond Polyester or Glassfiber mat which acts as the reinforcement that provides the membrane with its particular tensile strength, tear resistance, puncture resistance and elongation properties.

The upper surfaces of **NiloFlex** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermofusible polyethylene film.

**SBS Modified Bitumen Waterproofing Membranes**
With Non-Woven Spun-Bond Polyester or Glassfiber Reinforcement.

## MAJOR FEATURES

- Significant compound elastic behavior
- Excellent mechanical properties
- Enhanced performance under a wide range of temperature fluctuation, (From 0°C to 100 °C)

## USES

**NiloFlex** are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and normal weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

**NiloFlex** membranes are particularly recommended for the following applications:

- Protected waterproofing of roof decks or substrates subject to movements.
- Foundations & underground structures.
- Waterproofing of wet areas, mechanical rooms and terraces.

## SURFACE FINISH

The lower surface of **NiloFlex** is laminated with a polyethylene film. The upper surface is covered with the following surface finish material:

• Polyethylene Film **NiloFlex – E/E**

## APPLICATION

**NiloFlex** is usually applied by using a propane torch or a hot air generator as well as by mechanical fastening. It can also be applied using special adhesives in cold or hot applications. The substrate surface must be clean, dry, smooth, and free from any irregularities. According to the surface conditions, a coat of BituNil primer maybe required prior to the application of the membrane. **NiloFlex** can be applied to the substrate fully bonded, semi bonded or loose laid, and the method of adhesion to the substrate shall be decided according to the waterproofing system design. Side laps should be from 8-10 cm, while end laps should be from 12-15 cm. For more information on application refer to BituNil application guide..

## STORAGE & HANDLING

**NiloFlex** rolls should be kept in an upright position in a flat, properly ventilated and sheltered storage area.

## SUPPLY DATA & PALLETISING

| Group 100 | Group 105 | Thickness * | Standard Roll Size | Rolls / Pallet | |
|---|---|---|---|---|---|
| | | | | Group 100 | Group 105 |
| 200 | 205 | 2mm | 1M x 10M | 28 | 28 |
| 300 | 305 | 3mm | 1M x 10M | 28 | 28 |
| 400 | 405 | 4mm | 1M x 10M | 23 | 23 |
| 500 | 505 | 5mm | 1M x 8 M | 23 | 23 |
| **Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105* | | | | | |

***Loading Capacity: 20 pallets / Container***

*The above quantities are indicative only and may be subject to changes in order to comply with transport limitations according to the final destination of the product.*

*BituNil membranes are made of non-polluting substances, therefore are safe products during production, application and use*

# NiloFlex

## SBS Modified Bitumen Waterproofing Membranes

***G :Glassfiber,*** *GF: Low Wt., GP: Medium Wt.*
***P : Polyester,*** *PP: Low Wt., PS: Medium Wt.*
*PX:(Medium/High) Wt., PY: High Wt., PZ: Heavy Duty.*

**NiloFlex GF**
**NiloFlex PP**
**NiloFlex PS**
**NiloFlex PX**
**NiloFlex PY**
**NiloFlex PZ**

| PROPERTIES | | TEST | UNIT | TEST METHOD | TOLERANCE | NiloFlex | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | GF | PP | PS | PX | PY | PZ |
| Dimensional Properties | | Thickness | mm | EN-1849-1 | ± 5% | 4 | 4 | 4 | 4 | 4 | 4 |
| | | Weight (Mass Per Unit Area) | kg/m$^2$ | EN-1849-1 | ± 10% | - | - | - | - | - | - |
| | | Determination Of Width | m | EN-1848-1 | ± 1% | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Determination Of Length | m | EN-1848-1 | ± 1% | 10 | 10 | 10 | 10 | 10 | 10 |
| | | Straightness (Ortometry ) | mm | EN-1848-1 | - | ± 10 | ± 10 | ± 10 | ± 10 | ± 10 | ± 10 |
| Compound Properties | | Softening point (R&B) | ° C | ASTM D- 36 | Min. | 100 | 100 | 100 | 100 | 100 | 100 |
| | | Compound Elongation | % | UNI 8202/8 | ± 15% | 800 | 800 | 800 | 800 | 800 | 800 |
| Membrane Properties | Mechanical properties | Tensile Strength - Longitudinal | N/50mm | EN-12311-1 | ± 20% | 350 | 600 | 750 | 900 | 950 | 1000 |
| | | Tensile Strength - Transverse | N/50mm | EN-12311-1 | ± 20% | 250 | 400 | 500 | 600 | 700 | 750 |
| | | Elongation At Break - Longitudinal | % | EN-12311-1 | ±15 (polyester only) | 2 | 35 | 35 | 40 | 45 | 50 |
| | | Elongation At Break - Transverse | % | EN-12311-1 | ±15 (polyester only) | 2 | 40 | 40 | 40 | 50 | 50 |
| | | Tearing Strength - Longitudinal (Nail-Shank) | N | EN-12310-1 | ± 30% | 100 | 150 | 175 | 200 | 200 | 250 |
| | | Tearing Strength - Transverse (Nail-Shank) | N | EN-12310-1 | ± 30% | 100 | 150 | 175 | 200 | 200 | 250 |
| | | Tensile Tear Resistance - Longitudinal | N | ASTM D- 5147 . D 4073 | ± 30% | 425 | 500 | 650 | 700 | 850 | 850 |
| | | Tensile Tear Resistance - Transverse | N | ASTM D- 5147 . D 4073 | ± 30% | 275 | 275 | 400 | 500 | 600 | 600 |
| | | Resistance to Static Loading | Kg | EN 12730 Method A | Min. | 7 | 15 | 20 | 20 | 25 | 25 |
| | | Dynamic Puncturing (Impact Resistance) | mm | EN 12691 Method B | Min. | 300 | 550 | 650 | 700 | 900 | 1100 |
| | Thermal Properties | Flow Resistance At Elevated Temperature | ° C | EN-1110 | Min. | 90 | 90 | 90 | 90 | 90 | 90 |
| | | Flexibility At Low Temperature(1) | ° C | EN-1109 | - | -5 to 0 | -5 to 0 | -5 to 0 | -5 to 0 | -5 to 0 | -5 to 0 |
| | | Dimensional Stability | % | EN-1107-1 | Max. | ±0.1 | ±0.5 | ±0.5 | ±0.5 | ±0.5 | ±0.5 |
| | | Water Impermeability- Water tightness at Low pressure | 60 Kpa | EN-1928 Method A | - | Passed | Passed | Passed | Passed | Passed | Passed |
| | | Water Impermeability- Water tightness at High pressure(2) | Kpa | EN-1928 Method B | Min. | 100 | 150 | 200 | 300 | 350 | 400 |
| | Miscellaneous Properties | Water Absorption | % | ASTM D-5147 | Max. | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| | | Vapour Permeability | µ | EN 1931 | - | 60000 | 60000 | 60000 | 60000 | 60000 | 60000 |
| | | Fatigue resistance on cracks | 500 cycles | UNI 8202/13 | - | - | Passed | Passed | Passed | Passed | Passed |
| | | | 200 cycles | | | - | Passed | Passed | Passed | Passed | Passed |
| | | Shear Resistance Of joints - Longitudinal | N/50mm | EN-12317-1 | ± 20% | 350 | 600 | 750 | 900 | 950 | 1000 |
| | | Shear Resistance Of joints - Transverse | N/50mm | EN-12317-1 | ± 20% | 250 | 400 | 500 | 600 | 700 | 750 |
| | | Thermal Ageing in air (in oven 28 days at 70°C) | - | UNI 8202 /26 | - | Passed | Passed | Passed | Passed | Passed | Passed |
| | | Ageing Due To Atmospheric Agents (U.V Test weathering) | - | ASTM G 53 UNI 8202/29 | - | Passed | Passed | Passed | Passed | Passed | Passed |
| | | Fatigue resistance at Joints | 200 cycles | UNI 8202/32 | - | - | Passed | Passed | Passed | Passed | Passed |
| | | | 500 cycles | | - | - | Passed | Passed | Passed | Passed | Passed |
| | | Fire Classification - Extemal Fire Performance | Class | EN 13501-5/ ENV 1187 | - | F Roof | F Roof | F Roof | F Roof | F Roof | F Roof |
| | | Reaction to fire | Class | EN 13501-1 | - | E | E | E | E | E | E |
| | | Adhesion Of Granules | % | EN-12039 | Max. | - | - | - | - | - | - |
| | | Adhesion To Concrete (Torch Applied) | N/ 50mm | Pelage UEAtc | - | 40 | 40 | 40 | 40 | 40 | 40 |
| | | Resistance to root penetration | - | EN-13948 | - | NPD | NPD | NPD | NPD | NPD | NPD |
| Supply Data | | weight | kg/m2 | - | - | 3 to 6 | 3 to 6 | 3 to 6 | 3 to 6 | 3 to 6 | 3 to 6 |
| | | Thickness | mm | - | - | 2 to 5 | 2 to 5 | 2 to 5 | 2 to 5 | 2 to 5 | 2 to 5 |
| | | Roll Length | M | - | - | 10 | 10 | 10 | 10 | 10 | 10 |
| | | Roll Width | M | - | - | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule) | | | | | | | | | |
| | | Upper Surface Finish | - | - | - | E | E | E | E | E | E |
| | | Lower Surface Finish | - | - | - | E | E | E | E | E | E |

***The declared average values represent the best performance achieved at the present state of our knowledge, BituNil S.A.E reserves the possibility to change, without warning, the technical characteristics in order to make the product more responding to the application requirements. The choice of the type of membrane for the kind of use is at the purchaser's discretion .***

**Tolerances for the above values if not mentioned are according to the UEAtc directives.**
**(1) Exact value depends on thickness of the product.**
**(2)Deviating from the standard method , The assessment is made in 1 Hour test 4mm or 4.5Kg/m2 products.**

**Distributor:**


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