



# SBS

# BITUFLEX Smooth

## THE PRODUCT

**BITUFLEX** are elastomeric waterproofing membranes, manufactured in an advanced continuous calendaring process by saturating and coating a composite 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 **BITUFLEX** are established by the composite carrier made of non-woven Polyester armoured with Glassfiber filaments, which acts as the reinforcement that provides the membrane with the profound mechanical properties of the Polyester and the prominent dimensional stability of Glassfiber mats.

The upper surfaces of **BITUFLEX** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

## USES

**BITUFLEX** can be used for roofing and waterproofing applications with high dimensional stability requirements and subjected to considerable movements induced by stresses, and to critical weathering conditions.

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

- Flat and sloped roofs protected applications for medium and large areas.
- Foundations and underground structures with critical site conditions
- Protected waterproofing of roof decks or substrates subject to movements, such as metal decks, insulation boards, tiles, etc.

**SBS Modified Bitumen Waterproofing Membranes**  
With Composite Polyester Reinforcement.

## MAJOR FEATURES

- **Substantial Dimensional Stability:** The composite reinforcement provides the membrane with superior dimensional stability properties when exposed to high temperature during both production process and application in the field.
- **Good Resistance to Chemicals:** the premium quality bitumen compound used in **BITUFLEX** makes it resistant to the attack by acids, salts and basic solutions usually found in the soil and rainwater.
- **Superior Isotropic Mechanical Properties:** the composite reinforcement provides **BITUFLEX** with isotropic mechanical properties, which enables It to exhibit uniform behavior in all directions unlike other types of non-woven polyester.
- **Significant Compound Elastic Behavior,** which enables the compound to recover 100% of its original dimensions after 100% elongation.
- **High Performance** under a wide range of temperature fluctuation, (from -15°C to 120°C)

## SURFACE FINISH

The lower surface of **BITUFLEX** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **BITUFLEX – S/E**
- Polyethylene Film **BITUFLEX – E/E**
- Mineral Slate Chips or Special Granules  
(refer to **BITUFLEX Mineral** separate TDS)

## APPLICATION

**BITUFLEX** 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. **BITUFLEX** 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

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

## STANDARD 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 8M            | 23             | 23        |

\*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105

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

# BITUFLEX Smooth

## SBS Modified Bitumen Waterproofing Membranes

C: Composite Polyester Reinforcement

CP: Low Wt., CS: Medium Wt., CX: High Wt., CZ: Heavy Duty .

**BITUFLEX 5**

**BITUFLEX 10**

**BITUFLEX 15**

| PROPERTIES  | TEST                           | UNIT  | TEST METHOD | TOLERANCE                | BITUFLEX 5<br>CS | BITUFLEX 10<br>CS | BITUFLEX 15<br>CS |            |
|---|--------------------------------|---|-------------|--------------------------|------------------|-------------------|-------------------|------------|
| Dimensional Properties  | Thickness                      | mm  | EN-1849-1   | ± 5%                     | 4                | 4                 | 4                 |            |
|   | Weight (Mass Per Unit Area)    | kg/m2   | EN-1849-1   | ± 10%                    | -                | -                 | -                 |            |
|   | Determination Of Width         | m   | EN-1848-1   | ± 1%                     | 1                | 1                 | 1                 |            |
|   | Determination Of Length        | m   | EN-1848-1   | ± 1%                     | 10               | 10                | 10                |            |
|   | Straightness (Ortometry )      | mm  | EN-1848-1   | -                        | ± 10             | ± 10              | ± 10              |            |
| Compound Properties   | Softening point (R&B)          | ° C   | ASTM D- 36  | Min.                     | 110              | 120               | 125               |            |
|   | Compound Elongation            | %   | UNI 8202/8  | ± 15%                    | 900              | 1000              | 1100              |            |
| Membrane Properties   | Mechanical properties          | Tensile Strength - Longitudinal                                       | N/50mm      | EN-12311-1               | ± 20%            | 850               | 850               | 850        |
|   |                                | Tensile Strength - Transverse   | N/50mm      | EN-12311-1               | ± 20%            | 550               | 550               | 550        |
|   |                                | Elongation At Break - Longitudinal                                    | %           | EN-12311-1               | ±15              | 35                | 35                | 35         |
|   |                                | Elongation At Break - Transverse                                      | %           | EN-12311-1               | ±15              | 35                | 35                | 35         |
|   |                                | Tearing Strength - Longitudinal (Nail-Shank)                          | N           | EN-12310-1               | ± 30%            | 175               | 200               | 200        |
|   |                                | Tearing Strength - Transverse (Nail-Shank)                            | N           | EN-12310-1               | ± 30%            | 200               | 225               | 225        |
|   |                                | Tensile Tear Resistance - Longitudinal                                | N           | ASTM D- 5147 . D 4073    | ± 30%            | 750               | 750               | 750        |
|   |                                | Tensile Tear Resistance - Transverse                                  | N           | ASTM D- 5147 . D 4073    | ± 30%            | 400               | 400               | 400        |
|   |                                | Resistance to Static Loading  | Kg          | EN 12730 Method A        | Min.             | 25                | 25                | 25         |
|   | Thermal Properties             | Dynamic Puncturing (Impact Resistance)                                | mm          | EN 12691 Method B        | Min.             | 750               | 750               | 750        |
|   |                                | Flow Resistance At Elevated Temperature                               | ° C         | EN-1110                  | Min.             | 90                | 100               | 100        |
|   |                                | Flexibility At Low Temperature <sup>(1)</sup>                         | ° C         | EN-1109                  | -                | -10 to -5         | -15 to -10        | -20 to -15 |
|   |                                | dimensional Stability   | %           | EN-1107-1                | Max.             | ±0.3              | ±0.3              | ±0.3       |
|   |                                | Water Impermeability - Watertightness at Low pressure                 | 60 Kpa      | EN-1928 Method A         | -                | Passed            | Passed            | Passed     |
|   | Miscellaneous Properties       | Water Impermeability - Watertightness at High pressure <sup>(2)</sup> | Kpa         | EN-1928 Method B         | Min.             | 300               | 300               | 300        |
|   |                                | Water Absorption  | %           | ASTM D-5147              | Max.             | < 1               | < 1               | < 1        |
|   |                                | Vapour Permeability   | µ           | EN 1931                  | -                | 40000             | 60000             | 60000      |
|   |                                | Fatigue resistance on cracks  | 200 cycles  | UNI 8202/13              | -                | Passed            | Passed            | Passed     |
|   |                                |   | 500 cycles  |                          | Passed           | Passed            | Passed            |            |
|   |                                | Shear Resistance Of joints - Longitudinal                             | N/50mm      | EN-12317-1               | ± 20%            | 850               | 850               | 850        |
|   |                                | Shear Resistance Of joints - Transverse                               | N/50mm      | EN-12317-1               | ± 20%            | 550               | 550               | 550        |
|   |                                | Thermal Ageing in air (in oven 28 days at 70°C)                       | -           | UNI 8202 /26             | -                | Passed            | Passed            | Passed     |
|   |                                | Ageing Due To Atmospheric Agents (U.V Test weathering)                | -           | ASTM G 53<br>UNI 8202/29 | -                | Passed            | Passed            | Passed     |
|   |                                | Fatigue resistance at Joints  | 200 cycles  | UNI 8202/32              | -                | Passed            | Passed            | Passed     |
|   |                                |   | 500 cycles  |                          | Passed           | Passed            | Passed            |            |
|   |                                | Fire Classification - External Fire Performance                       | Class       | EN 13501-5/ ENV 1187     | -                | F Roof            | B Roof(t2)        | B Roof(t2) |
|   |                                | Reaction to fire  | Class       | EN 13501-1               | -                | E                 | E                 | E          |
|   |                                | Adhesion Of Granules  | %           | EN-12039                 | Max.             | -                 | -                 | -          |
|   |                                | Adhesion To Concrete (Torch Applied)                                  | N/ 50mm     | Pelage UEAtc             | -                | 40                | 40                | 40         |
|   | Resistance to root Penetration | -   | EN 13948    | -                        | NPD              | NPD               | NPD               |            |
|   | Supply Data                    | weight  | kg/m2       | -                        | -                | 3 to 6            | 3 to 6            | 3 to 6     |
|   |                                | Thickness   | mm          | -                        | -                | 2 to 5            | 2 to 5            | 2 to 5     |
|   |                                | Roll Length   | M           | -                        | -                | 10                | 10                | 10         |
| Roll Width  |                                | M   | -           | -                        | 1                | 1                 | 1                 |            |
| Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule) |                                |   |             |                          |                  |                   |                   |            |
|   | Upper Surface Finish           | -   | -           | -                        | S or E           | S or E            | S or E            |            |
|   | Lower Surface Finish           | -   | -           | -                        | S or E           | S or E            | S or 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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