

THE PRODUCT

BITUFLEX Mineral are self-protected 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 Mineral** 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 Mineral** is covered with colored mineral slate chips, with an 8cm slate free side margin for overlap welding, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

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

BITUFLEX Mineral is used as a top layer in an exposed multi layer roofing system where there is a need to satisfy specific aesthetical requirements and/or for exposed systems for the following roofing applications:

- Pre-stressed concrete or pre engineered steel structures.
- Metal decks or wooden substrates
- Re-roofing jobs on existing bituminous felts, tiles and other compatible substrates.
- Under roofing clay tiles on pitched roofs where tiles are fixed with mortar
- Flashings for exposed up-stands in SBS modified bitumen roofing systems.

SBS Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement.

MAJOR FEATURES

- **Enhanced Surface Characteristics:** the slate chips surfacing reduces the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **Substantial Dimensional Stability.**
- **Good Resistance to Chemicals** and industrial environment when used without protection.
- **Superior Isotropic Mechanical Properties:** the composite reinforcement provides the membrane 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)
- **Fire Retarding Properties.**

SURFACE FINISH

The lower surface of **BITUFLEX Mineral** is laminated with a Polyethylene film while the upper surface is covered with one of the mineral slate chips or special granules, available in the following colors:

- Grey **BITUFLEX Mineral – GY**
- Green **BITUFLEX Mineral – GR**
- Red **BITUFLEX Mineral – R**
- white **BITUFLEX Mineral – W**

APPLICATION

BITUFLEX Mineral 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 Mineral** can be applied to the substrate fully bonded, semi bonded or mechanically fastened, and the method of adhesion to the substrate shall be decided according to the waterproofing system design. Side laps shall be 8 cm, while end laps shall be from 12-15 cm. Loose mineral slate chips can be used to treat overlaps for aesthetical requirements. For more info on application refer to BituNil application guide.

STORAGE & HANDLING

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

STANDARD SUPPLY DATA & PALLETISING

Group 1000	Group 1005	Weight*	Standard Roll Size	Rolls / Pallet	
				Group 1000	Group 1005
3000	3005	3.0 Kg/sqm	1M X 10M	39	39
3500	3505	3.5 Kg/sqm	1M X 10M	30	33
4000	4005	4.0 Kg/sqm	1M X 10M	30	30
4500	4505	4.5 Kg/sqm	1M X 10M	25	25
5000	5005	5.0 Kg/sqm	1M X 10M	23	25

*Weight tolerance as per UEAtc. Directives for Group 1000 and UEAtc. ± 5% for Group 1005

Loading Capacity: 20 pallets / 20' Container

BITUFLEX Mineral

SBS Modified Bitumen Waterproofing Membranes

C: Composite Polyester Reinforcement

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

BITUFLEX 5 Mineral
BITUFLEX 10 Mineral
BITUFLEX 15 Mineral

PROPERTIES	TEST	UNIT	TEST METHOD	TOLERANCE	BITUFLEX 5 CSM	BITUFLEX 10 CSM	BITUFLEX 15 CSM	
Dimensional Properties	Thickness	mm	EN-1849-1	± 5%	-	-	-	
	Weight (Mass Per Unit Area)	kg/m2	EN-1849-1	± 10%	4.5	4.5	4.5	
	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 ⁽¹⁾	° 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
		Water Impermeability - Watertightness at High pressure ⁽²⁾	Kpa	EN-1928 Method B	Min.	300	300	300
	Miscellaneous Properties	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 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.	≤30	≤30	≤30
		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	-	-	-	SL or GR	SL or GR	SL or GR	
	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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