APP BITUBOND Smooth

Heavy Duty APP Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement

THE PRODUCT

BITUBOND are Plastomeric waterproofing membranes manufactured in an advanced continuous calendaring process by saturating and coating a heavy duty composite carrier with a waterproofing compound made of a special grade of bitumen, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUBOND** are established by the composite carrier made of non-woven Polyester armoured with fiberglass 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 mat.
The upper surface of **BITUBOND** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES

BITUBOND can be used for heavy duty waterproofing applications with high dimensional stability requirements and subjected to extreme weathering conditions.

BITUBOND membranes are particularly recommended in single or multi-layer systems for the following applications:

- Roofing works for protected roofs, subject to high mechanical stresses.
- Waterproofing of foundations & underground structures with critical site conditions.
- Civil engineering applications such as hydraulic works, parking decks, bridges, viaducts, tunnels, waste dumps, etc.
- Waterproofing of substrates where high vapor impermeability is required.

MAJOR FEATURE

- **Exceptional Dimensional Stability**: The heavy duty composite reinforcement provides the membrane with superior dimensional stability properties when exposed to high temperature during both production process and application in the field.
- **Excellent Resistance to Chemicals & U.V.**: the superior quality bitumen compound used in **BITUBOND** makes it resistant to the attack by acids, salts and basic solutions usually found in the soil and rainwater.
- **Superior Isotropic Mechanical Properties**: presented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
- **Enormous Resistance** to impact loads, tear and puncture.
- **Superior Performance** under a wide range of temperature fluctuation, (from -20◦C to 150◦C)

SURFACE FINISH

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

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

APPLICATION

BITUBOND 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. **BITUBOND** can be applied to the substrate fully bonded, semi bonded or loose laid. 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

BITUBOND 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
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

BITUBOND
Smooth

BITUBOND 15
BITUBOND 20

APP Modified Bitumen Waterproofing Membranes

C: Composite Polyester Reinforcement
CP: Low Wt. CS: Medium Wt. CX: High Wt. CZ: Heavy Duty .

Properties		Test	Unit	Test Method	Tolerance	BITUBOND 15 CZ	BITUBOND 20 CZ
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-	-
		Determination Of Width	m	EN-1848-1	± 1%	1	1
		Determination Of Length	m	EN-1848-1	± 1%	10	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10	± 10
Compound Properties		Softening point (R&B)	°C	ASTM D- 36	Min.	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1200	1200
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	1100	1100
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	45	45
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	300	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	400	400
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	950	950
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	600	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	30	30
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1200	1200
	Thermal Properties	Flow Resistance At Elevated Temperature	°C	EN-1110	Min.	120	130
		Flexibility At Low Temperature(1)	°C	EN-1109	-	-15 TO -20	≤-20
		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	800	800
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1
		Vapour Permeability	µ	EN 1931	-	80000	80000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed	Passed
			500 cycles			Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1200	1200
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	1100	1100
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed	Passed
			500 cycles		-	Passed	Passed
		Fire Classification - Extenal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E
		Adhesion Of Granules	%	EN-12039	Max.	-	-
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20
		Resistance to root penetration	-	EN-13948	-	NPD	NPD
Supply Data		weight	kg/m2	-	-	5 to 6	5 to 6
		Thickness	mm	-	-	4 to 5	4 to 5
		Roll Length	M	-	-	10	10
		Roll Width	M	-	-	1	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)					
		Upper Surface Finish	-	-	-	S or E	S or E
		Lower Surface Finish	-	-	-	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 .

Distributor:

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.

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