BituNil

APP OR SBS

BITUGARDEN

THE PRODUCT

BITUGARDEN is a waterproofing membrane manufactured in an advanced continuous calendaring process by saturating and coating a robust composite carrier with a waterproofing compound made of a special grade of bitumen, which is modified with polymers and special **ANTI-ROOT** chemical additives. While the polymers (APP) or (SBS) and **ANTI-ROOT** additives enhance the thermal, mechanical, aging and root penetration resistance properties of the membrane compound, the mechanical characteristics of **BITUGARDEN** are established by the composite carrier made of non-woven Polyester armored 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 **BITUGARDEN** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

High Performance Anti-Root
Modified Bitumen Waterproofing Membranes
For Roof Gardens and Terraces

USES

Due to its special properties, **BITUGARDEN** is particularly used for roof gardens, terraces, planters, and all waterproofing applications where membrane is subject to root penetration. (Refer to BituNil Roof Garden System Design Ref. MG 10)

MAJOR FEATURES

BITUGARDEN is a membrane specially designed to resist root puncture. This feature has been achieved by adding a special chemical additive to the bitumen compound that gives the membrane the ability to resist roots and prevent its penetration without losing any of its premium waterproofing characteristics. Even in direct contact with soil, **BITUGARDEN** does not transfer any polluting elements or present any algaecide or bactericide effects.

BITUGARDEN MINERAL is used as Flashings for exposed up-stands in roof garden/ plaza decks, where membrane is subject to root penetration.

SURFACE FINISH

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

• Fine Sand	**BITUGARDEN- S/E**
• Polyethylene Film	**BITUGARDEN- E/E**
• Mineral Slate Chips or Special Granule	**BITUGARDEN MINERAL**

APPLICATION

BITUGARDEN is usually applied by using a propane torch. 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. **BITUGARDEN** 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 info on application refer to BituNil application guide.

STORAGE & HANDLING

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

SUPPLY DATA & PALLETISING

Thickness/ Weight *	Standard Roll Size	Rolls / Pallet
3mm	1M x 10M	28
4mm	1M x 10M	23
5mm	1M x 8M	23
4 Kg/ sqm	1M x 10M	30
4.5 Kg/ sqm	1M x 10M	25
5 Kg/ sqm	1M x 10M	23

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

بيتونيل BituNil
Nile Waterproofing Materials Co. S.A.E
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BITUGARDEN

BITUGARDEN APP
BITUGARDEN SBS

Anti – Root APP or SBS Modified Bitumen Waterproofing Membranes

C: Composite Polyester Reinforcement
CS: Medium Wt. CX: High Wt.

PROPERTIES		TEST	UNIT	TEST METHOD	TOLERANCE	BITUGARDEN APP	BITUGARDEN SBS
						CX	CS
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	125
		Compound Elongation	%	UNI 8202/8	± 15%	-	1100
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050	850
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650	550
		Elongation At Break - Longitudinal	%	EN-12311-1	±15 %	35	35
		Elongation At Break - Transverse	%	EN-12311-1	±15 %	40	35
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	275	200
		Tearing Strength - Transverse (Nail-Shank)	N	EN-12310-1	± 30%	350	225
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850	750
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450	400
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000	750
	Thermal Properties	Flow Resistance At Elevated Temperature	° C	EN-1110	Min.	120	100
		Flexibility At Low Temperature(1)	° C	EN-1109	-	-15 To -10	-20 To -15
		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3
		Water Impermeability- Water tightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed
		Water Impermeability- Water tightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500	300
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1
		Vapour Permeability	μ	EN 1931	-	70000	60000
		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%	1050	850
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650	550
		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 - Extemal 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.	≤30	≤30
		Adhesion To Concrete (Torch Applied)	N/ 50mm	Pelage UEAtc	-	20	40
		Resistance to root penetration	-	EN-13948	-	Passed	Passed
Supply Data		weight	kg/m2	-	-	3 to 6	3 to 6
		Thickness	mm	-	-	2 to 5	2 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 or SL or GR	S or E or SL or GR
		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 .

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:

Nile Waterproofing Materials Co. S.A.E
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