APP BITUBOND Mineral

Heavy Duty APP Modified Bitumen Waterproofing Membranes.
With Composite Polyester Reinforcement

THE PRODUCT

BITUBOND Mineral are self-protected plastomeric 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 APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUBOND 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 **BITUBOND 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

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

- Exposed roofing in civil, industrial, and military works where the roof finish needs to blend harmoniously with the surrounding environment.
- Exposed re-roofing jobs on compatible substrates.
- Under roofing clay tiles on pitched roofs where tiles are fixed with mortar
- Flashings for exposed up-stands in APP modified bitumen roofing systems.

MAJOR FEATURES

- **Enhanced Surface Characteristics:** where the slate chips surfacing reduces the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **Good Resistance to Chemicals** and industrial environment when used without protection.
- **High U.V. Resistance**
- **Excellent Isotropic Mechanical Properties** represented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
  - Distinguished resistance to mechanical stresses in exposed applications.
- **Superior Performance** under a wide range of temperature fluctuation, (from -20◦C to 150◦C)
- **Fire Retarding Properties.**

SURFACE FINISH

The lower surface of **BITUBOND 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 **BITUBOND Mineral** – GY
- Green **BITUBOND Mineral** – GR
- Red **BITUBOND Mineral** – R
- white **BITUBOND Mineral** – W

APPLICATION

BITUBOND 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. **BITUBOND 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

BITUBOND 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
5000	5005	5.0 Kg/sqm	1M X 10M	23	25
5500	5505	5.5 Kg/sqm	1M X 8 M	23	25
6000	-	6.0 Kg/sqm	1M X 5 M	33	-

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

BITUBOND
Mineral

BITUBOND 15 Mineral
BITUBOND 20 Mineral

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 CZM	BITUBOND 20 CZM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	5	5
		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 Temprature	°C	EN-1110	Min.	120	130
		Flexability At Low Temprature(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 - 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	20
		Resistance to root pentration	-	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	-	-	-	SL or GR	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

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
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

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 Temprature	° C	EN-1110	Min.	120	130
		Flexability At Low Temprature(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 - 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.	-	-
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20
		Resistance to root pentration	-	EN-13948	-	NPD	NPD
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	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP BITUGUARD Smooth
BITUGUARD Mineral

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement

THE PRODUCT
BITUGUARD is a Plastomeric waterproofing membrane 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 **BITUGUARD** 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 **BITUGUARD** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES
BITUGUARD can be used for roofing & waterproofing applications with high dimensional stability requirements and subjected to normal mechanical stresses & weathering conditions.

BITUGUARD is a multipurpose waterproofing membrane particularly recommended in single or multi-layer systems for the following applications:
- Flat and sloped ballasted roofs.
- Underground structures waterproofing.
- Re-roofing works.
- Wet areas and mechanical rooms waterproofing.

BITUGUARD MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURE
- **High Dimensional Stability** provided by the composite reinforcement
- **Chemical Resistance** to basic solutions found in the soil and rain water.
- **Good Performance** under a wide range of temperature fluctuation, (from 0 ◦C to 150◦C)

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

- Fine Sand — **BITUGUARD** – S/E
- Polyethylene Film — **BITUGUARD** – E/E
- Mineral Slate Chips or Special Granules — **BITUGUARD Mineral**

APPLICATION
BITUGUARD 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. **BITUGUARD** 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
BITUGUARD 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

BITUGUARD

BITUGUARD Smooth
BITUGUARD Mineral

APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUGUARD CP
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	500
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	25
		Elongation At Break - Transverse	%	EN-12311-1	±15	30
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	150
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	200
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	250
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	15
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	450
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	100
		Flexability At Low Temprature(1)	° C	EN-1109	-	-5 to 0
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	100
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	500
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	S or E or SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP BITUPLAST Mineral

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement.

THE PRODUCT

BITUPLAST Mineral is a self-protected plastomeric waterproofing membrane, 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 APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUPLAST 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 **BITUPLAST 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

BITUPLAST Mineral can be used for roofing and waterproofing applications with high dimensional stability requirements & subjected to considerable mechanical stresses and weathering conditions.
BITUPLAST 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:

- Exposed roofing in civil, industrial, and military works where the roof finish needs to blend harmoniously with the surrounding environment.
- Exposed re-roofing jobs on compatible substrates.
- Under roofing clay tiles on pitched roofs where tiles are fixed with mortar
- Flashings for exposed up-stands in APP modified bitumen roofing systems.

MAJOR FEATURES

- **Enhanced Surface Characteristics:** where the slate chips surfacing reduces the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **Enhanced Resistance to chemicals** and industrial environment when used without protection.
- **High U.V. Resistance**
- **Enhanced isotropic mechanical properties** represented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
  - Distinguished resistance to mechanical stresses in exposed applications.
- **Good Performance** under a wide range of temperature fluctuation, (from -5◦C to 150◦C)
- **Fire Retarding Properties.**

SURFACE FINISH

The lower surface of **BITUPLAST 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 **BITUPLAST Mineral** – GY
- Green **BITUPLAST Mineral** – GR
- Red **BITUPLAST Mineral** – R
- white **BITUPLAST Mineral** – W

APPLICATION

BITUPLAST 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. **BITUPLAST 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

BITUPLAST 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

BITUPLAST
Mineral

APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUPLAST CSM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	4.5
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	900
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	550
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	30
		Elongation At Break - Transverse	%	EN-12311-1	±15	35
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	250
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	400
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	20
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	600
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	110
		Flexability At Low Temprature(1)	° C	EN-1109	-	-10 to - 5
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	300
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	900
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	550
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP BITUPLAST Smooth

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement.

THE PRODUCT

BITUPLAST is a Plastomeric waterproofing membrane 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 **BITUPLAST** 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 **BITUPLAST** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES

BITUPLAST can be used for roofing & waterproofing applications with high dimensional stability requirements and subjected to considerable mechanical stresses & weathering conditions.

BITUPLAST is a multi purpose waterproofing membrane particularly recommended in single or multi-layer systems for the following applications:

- Flat and sloped ballasted roofs.
- Underground structures waterproofing.
- Re-roofing works.
- Wet areas and mechanical rooms waterproofing.

MAJOR FEATURE

- **Enhanced Isotropic Mechanical Properties** presented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
- **Chemical Resistance** to basic solutions found in the soil and rain water.
- **Good Performance** under a wide range of temperature fluctuation, (from -5◦C to 150◦C)

SURFACE FINISH

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

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

APPLICATION

BITUPLAST 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. **BITUPLAST** 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

BITUPLAST 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.

BITUPLAST

Smooth

APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUPLAST CS
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	900
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	550
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	30
		Elongation At Break - Transverse	%	EN-12311-1	±15	35
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	250
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	400
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	20
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	600
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	110
		Flexability At Low Temprature(1)	° C	EN-1109	-	-10 to - 5
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	300
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	900
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	550
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	-
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	S or E
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP BITUTER Mineral

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement

THE PRODUCT

BITUTER Mineral is a self-protected plastomeric waterproofing membrane, 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 APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUTER 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 **BITUTER 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

BITUTER Mineral can be used for roofing and waterproofing applications with high dimensional stability requirements & subjected to significant mechanical stresses and weathering conditions.

BITUTER 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:

- Exposed roofing in civil, industrial, and military works where the roof finish needs to blend harmoniously with the surrounding environment.
- Exposed re-roofing jobs on compatible substrates.
- Under roofing clay tiles on pitched roofs where tiles are fixed with mortar
- Flashings for exposed up-stands in APP modified bitumen roofing systems.

MAJOR FEATURES

- **Enhanced Surface Characteristics:** where the slate chips surfacing reduce the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **Good Resistance to Chemicals** and industrial environment when used without protection.
- **High U.V. Resistance**
- **Excellent Isotropic Mechanical Properties** represented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
  - Distinguished resistance to mechanical stresses in exposed applications.
- **Superior Performance** under a wide range of temperature fluctuation, (from -10◦C to 150◦C)
- **Fire Retarding Properties.**

SURFACE FINISH

The lower surface of **BITUTER 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 **BITUTER Mineral** – GY
- Green **BITUTER Mineral** – GR
- Red **BITUTER Mineral** – R
- white **BITUTER Mineral** – W

APPLICATION

BITUTER 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. **BITUTER 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

BITUTER 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

BITUTER

Mineral

APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUTER CXM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	4.5
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	35
		Elongation At Break - Transverse	%	EN-12311-1	±15	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	120
		Flexability At Low Temprature(1)	° C	EN-1109	-	-15 to -10
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	70000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1050
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP BITUTER Smooth

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement

THE PRODUCT

BITUTER is a Plastomeric waterproofing membrane 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 **BITUTER** 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 **BITUTER** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES

BITUTER can be used for roofing & waterproofing applications with high dimensional stability requirements and subjected to significant mechanical stresses & weathering conditions.

BITUTER waterproofing membrane is particularly recommended in single or multi-layer systems for the following applications:

- Roofing works for flat or sloped protected roofs.
- 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

- **Substantial Dimensional Stability**: The robust composite reinforcement provides the membrane with superior dimensional stability properties when exposed to high temperature during both production process and application in the field.
- **Enhanced Resistance to Chemicals**: the premium quality bitumen compound used in **BITUTER** makes it resistant to the attack by acids, salts and basic solutions usually found in the soil and rainwater.
- **Good isotropic Mechanical Properties**: presented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
- **High U.V. Resistance.**
- **Superior Performance** under a wide range of temperature fluctuation, (from -10◦C to 150◦C)

SURFACE FINISH

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

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

APPLICATION

BITUTER 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. **BITUTER** 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

BITUTER 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

BITUTER

Smooth

APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUTER CX
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	35
		Elongation At Break - Transverse	%	EN-12311-1	±15	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	120
		Flexability At Low Temprature(1)	° C	EN-1109	-	-15 to -10
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	70000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1050
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	-
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	S or E
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

APP

NiloPlast 5 Smooth
NiloPlast 5 Mineral

APP Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloPlast 5 are plastomeric 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, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membranes compound, the mechanical characteristics of **NiloPlast 5** are established by the non-woven continuous filament spun-bond 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 surface of **NiloPlast 5** is covered with an anti-adhesive finish material while the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloPlast 5 are multi-purpose membranes for roofing & waterproofing applications subjected to different mechanical stresses and moderate weathering conditions, in multi layer systems and can be used as a single layer in specific application.

NiloPlast 5 membranes are particularly recommended for the following applications.

- Roofing or re-roofing works for sloped and flat protected roofs.
- Waterproofing of underground structures
- Waterproofing of wet areas, mechanical rooms and terraces.

NiloPlast 5 MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES

- **Good UV Resistance**
- **Enhanced Resistance To Chemicals**
- **Excellent Mechanical Properties**
- **Enhanced Performance,** under a wide range of temperature fluctuation, (from -5 °C to 150 °C)

SURFACE FINISH

The lower surface of **NiloPlast 5** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloPlast 5 - S/E**
- Polyethylene Film **NiloPlast 5 - E/E**
- Mineral Slate chips or Special Granules **NiloPlast 5 MINERAL**

APPLICATION

NiloPlast 5 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. **NiloPlast 5** 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

NiloPlast 5 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

NiloPlast 5

NiloPlast 5 GF
NiloPlast 5 PP
NiloPlast 5 PS
NiloPlast 5 PX
NiloPlast 5 PY
NiloPlast 5 PZ

APP Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloPlast 5					
						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.	150	150	150	150	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-	-	-	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	350	650	800	900	1000	1100
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	250	400	550	650	700	900
		Elongation At Break - Longitudinal	%	EN-12311-1	±15(polyester only)	2	30	30	35	40	45
		Elongation At Break - Transverse	%	EN-12311-1	±15(polyester only)	2	35	35	35	40	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	130	250	275	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	150	275	275	350	350	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450	550	600	625	750	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	300	325	350	450	550	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	15	15	20	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	300	450	600	700	900	1100
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	100	100	100	100	100	100
		Flexability At Low Temprature(1)	° C	EN-1109	-	-10 To -5	-10 To -5	-10 To -5	-10 To -5	-10 To -5	-10 To -5
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500 cycles			-	-	-	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	350	650	800	900	1000	1100
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	250	400	550	650	700	900
		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
		Fire Classification - External 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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20	20	20	20	20
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

APP

NiloPlast 10 Smooth
NiloPlast 10 Mineral

APP Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloPlast 10 are plastomeric 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, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membranes compound, the mechanical characteristics of **NiloPlast 10** are established by the non-woven continuous filament spun-bond 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 surface of **NiloPlast 10** is covered with an anti-adhesive finish material while the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloPlast 10 are multi-purpose membranes for roofing & waterproofing applications subjected to different mechanical stresses and Significant weathering conditions, in multi layer systems and can be used as a single layer in specific application.

NiloPlast 10 membranes are particularly recommended for the following applications.

- Roofing or re-roofing works for sloped and flat protected roofs.
- Waterproofing of underground structures
- Waterproofing of wet areas, mechanical rooms and terraces.

NiloPlast 10 MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES

- **Good UV Resistance**
- **Enhanced Resistance To Chemicals**
- **Excellent Mechanical Properties**
- **Enhanced Performance,** under a wide range of temperature fluctuation, (from -10 °C to 150 °C)

SURFACE FINISH

The lower surface of **NiloPlast 10** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloPlast 10 - S/E**
- Polyethylene Film **NiloPlast 10 - E/E**
- Mineral Slate chips or Special Granules **NiloPlast 10 MINERAL**

APPLICATION

NiloPlast 10 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. **NiloPlast 10** 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

NiloPlast 10 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

NiloPlast 10

NiloPlast 10 GF
NiloPlast 10 PP
NiloPlast 10 PS
NiloPlast 10 PX
NiloPlast 10 PY
NiloPlast 10 PZ

APP Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloPlast 10					
						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.	150	150	150	150	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-	-	-	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	350	650	800	900	1000	1100
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	250	400	550	650	700	900
		Elongation At Break - Longitudinal	%	EN-12311-1	±15(polyester only)	2	30	30	35	40	45
		Elongation At Break - Transverse	%	EN-12311-1	±15(polyester only)	2	35	35	35	40	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	130	250	275	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	150	275	275	350	350	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450	550	600	625	750	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	300	325	350	450	550	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	15	15	20	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	300	450	600	700	900	1100
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	110	110	110	110	110	110
		Flexability At Low Temprature(1)	°C	EN-1109	-	-15 To -10	-15 To -10	-15 To -10	-15 To -10	-15 To -10	-15 To -10
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500 cycles			-	-	-	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	350	650	800	900	1000	1100
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	250	400	550	650	700	900
		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
		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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20	20	20	20	20
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

APP

NiloPlast 15 Smooth
NiloPlast 15 Mineral

APP Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloPlast 15 are plastomeric 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, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membranes compound, the mechanical characteristics of **NiloPlast 15** are established by the non-woven continuous filament spun-bond 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 surface of **NiloPlast 15** is covered with an anti-adhesive finish material while the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloPlast 15 are multi-purpose membranes for roofing & waterproofing applications subjected to different mechanical stresses and Critical weathering conditions, in multi layer systems and can be used as a single layer in specific application.

NiloPlast 15 membranes are particularly recommended for the following applications.

- Roofing or re-roofing works for sloped and flat protected roofs.
- Waterproofing of underground structures
- Waterproofing of wet areas, mechanical rooms and terraces.

NiloPlast 15 MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES

- **Good UV Resistance**
- **Enhanced Resistance To Chemicals**
- **Excellent Mechanical Properties**
- **Enhanced Performance,** under a wide range of temperature fluctuation, (from -15 °C to 150 °C)

SURFACE FINISH

The lower surface of **NiloPlast 15** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloPlast 15 - S/E**
- Polyethylene Film **NiloPlast 15 - E/E**
- Mineral Slate chips or Special Granules **NiloPlast 15 MINERAL**

APPLICATION

NiloPlast 15 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. **NiloPlast 15** 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

NiloPlast 15 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

NiloPlast 15

NiloPlast 15 GP
NiloPlast 15 PP
NiloPlast 15 PS
NiloPlast 15 PX
NiloPlast 15 PY
NiloPlast 15 PZ

APP Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloPlast 15					
						GP	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/m²	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.	150	150	150	150	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-	-	-	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	650	800	900	1000	1100
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	400	550	650	700	900
		Elongation At Break - Longitudinal	%	EN-12311-1	±15(polyester only)	2	30	30	35	40	45
		Elongation At Break - Transverse	%	EN-12311-1	±15(polyester only)	2	35	35	35	40	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	140	250	275	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	190	275	275	350	350	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450	550	600	625	750	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	300	325	350	450	550	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	15	15	20	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	300	450	600	700	900	1100
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	120	120	120	120	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	-20 to -15	-20 to -15	-20 to -15	-20 to -15	-20 to -15	-20 to -15
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500 cycles			-	-	-	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	650	800	900	1000	1100
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	400	550	650	700	900
		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
		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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20	20	20	20	20
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

APP

NiloPlast 20 Smooth
NiloPlast 20 Mineral

APP Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloPlast 20 are plastomeric 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, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membranes compound, the mechanical characteristics of **NiloPlast 20** are established by the non-woven continuous filament spun-bond 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 surface of **NiloPlast 20** is covered with an anti-adhesive finish material while the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloPlast 20 are multi-purpose membranes for roofing & waterproofing applications subjected to different mechanical stresses and Extreme weathering conditions, in multi layer systems and can be used as a single layer in specific application.

NiloPlast 20 membranes are particularly recommended for the following applications.

- Roofing or re-roofing works for sloped and flat protected roofs.
- Waterproofing of underground structures
- Waterproofing of wet areas, mechanical rooms and terraces.

NiloPlast 20 MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES

- **Good UV Resistance**
- **Enhanced Resistance To Chemicals**
- **Excellent Mechanical Properties**
- **Enhanced Performance,** under a wide range of temperature fluctuation, (from - 20 °C to 150 °C)

SURFACE FINISH

The lower surface of **NiloPlast 20** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloPlast 20 - S/E**
- Polyethylene Film **NiloPlast 20 - E/E**
- Mineral Slate chips or Special Granules **NiloPlast 20 MINERAL**

APPLICATION

NiloPlast 20 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. **NiloPlast 20** 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

NiloPlast 20 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

NiloPlast 20

NiloPlast 20 GP
NiloPlast 20 PP
NiloPlast 20 PS
NiloPlast 20 PX
NiloPlast 20 PY
NiloPlast 20 PZ

APP Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloPlast 20					
						GP	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.	150	150	150	150	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-	-	-	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	650	800	900	1000	1100
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	400	550	650	700	900
		Elongation At Break - Longitudinal	%	EN-12311-1	±15(polyester only)	2	30	30	35	40	45
		Elongation At Break - Transverse	%	EN-12311-1	±15(polyester only)	2	35	35	35	40	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	140	250	275	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	190	275	275	350	350	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450	550	600	625	750	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	300	325	350	450	550	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	15	15	20	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	300	450	600	700	900	1100
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	120	120	120	120	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	≤-20	≤-20	≤-20	≤-20	≤-20	≤-20
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500 cycles			-	-	-	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	650	800	900	1000	1100
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	400	550	650	700	900
		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
		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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20	20	20	20	20
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

APP

NiloPlast Smooth
NiloPlast Mineral

APP Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloPlast are plastomeric 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, which is modified with APP polymers. While the APP polymers enhance the thermal, mechanical, and aging properties of the membranes compound, the mechanical characteristics of **NiloPlast** are established by the non-woven continuous filament spun-bond 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 surface of **NiloPlast** is covered with an anti-adhesive finish material while the lower surface is laminated with a thermo-fusible polyethylene film.

USES

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

NiloPlast membranes are particularly recommended for the following applications.

- Roofing or re-roofing works for sloped and flat protected roofs.
- Waterproofing of underground structures
- Waterproofing of wet areas, mechanical rooms and terraces.

NiloPlast MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES

- **Good UV Resistance**
- **Enhanced Resistance To Chemicals**
- **Excellent Mechanical Properties**
- **Enhanced Performance,** under a wide range of temperature fluctuation, (from 0 °C to 150 °C)

SURFACE FINISH

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

- Fine Sand — **NiloPlast - S/E**
- Polyethylene Film — **NiloPlast - E/E**
- Mineral Slate chips or Special Granules — **NiloPlast MINERAL**

APPLICATION

NiloPlast **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. **NiloPlast** 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

NiloPlast 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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.

NiloPlast

NiloPlast GF
NiloPlast PP
NiloPlast PS
NiloPlast PX
NiloPlast PY
NiloPlast PZ

APP Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloPlast					
						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.	150	150	150	150	150	150
		Compound Elongation	%	UNI 8202/8	± 15%	-	-	-	-	-	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	350	650	800	900	1000	1100
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	250	400	550	650	700	900
		Elongation At Break - Longitudinal	%	EN-12311-1	±15(polyester only)	2	30	30	35	40	45
		Elongation At Break - Transverse	%	EN-12311-1	±15(polyester only)	2	35	35	35	40	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	125	200	250	250	250	250
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	150	250	250	250	300	300
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450	550	600	625	750	800
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	300	325	350	450	550	600
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	15	15	20	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	300	450	600	700	900	1100
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	100	100	100	100	100	100
		Flexability At Low Temprature(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 Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500 cycles			-	-	-	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	350	650	800	900	1000	1100
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	250	400	550	650	700	900
		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
		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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20	20	20	20	20	20
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

SBS

BITUFLEX Mineral

SBS Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement.

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.

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

BITUFLEX
Mineral

BITUFLEX 5 Mineral
BITUFLEX 10 Mineral
BITUFLEX 15 Mineral

SBS 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	BITUFLEX 5 CSM	BITUFLEX 10 CSM	BITUFLEX 15 CSM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-	-	-
		Weight (Mass Per Unit Area)	kg/m^2	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
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	750	750	750
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	90	100	100
		Flexability At Low Temprature(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 Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed
		Water Impermeablility- 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 - Extemal 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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS BITUFLEX Smooth

SBS Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement.

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.

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.
- **Enhanced 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.
- **Good 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.
- **Superior 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.

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

BITUFLEX
Smooth

BITUFLEX 5
BITUFLEX 10
BITUFLEX 15

SBS 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	BITUFLEX 5 CS	BITUFLEX 10 CS	BITUFLEX 15 CS
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	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
		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
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	750	750	750
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	90	100	100
		Flexability At Low Temprature(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 Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed
		Water Impermeablility- 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 - Extemal 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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS BITUGUM Mineral

Heavy Duty SBS Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement.

THE PRODUCT

BITUGUM 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 **BITUGUM 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 **BITUGUM 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

BITUGUM Mineral can be used for heavy duty roofing and waterproofing applications with high dimensional stability requirements & subjected to excessive movements induced by stresses, and to extreme weathering conditions.

BITUGUM 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.

MAJOR FEATURES

- **Excellent 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**.
- **High 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.
- **Outstanding Compound Elastic Behavior**, which enables the compound to recover 100% of its original dimensions after 200% elongation.
- **High Performance** under a wide range of temperature fluctuation, (from -30◦C to 120◦C)
- **Fire Retarding Properties.**

SURFACE FINISH

The lower surface of **BITUGUM 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 **BITUGUM Mineral** – GY
- Green **BITUGUM Mineral** – GR
- Red **BITUGUM Mineral** – R
- white **BITUGUM Mineral** – W

APPLICATION

BITUGUM 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. **BITUGUM 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

BITUGUM 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

BITUGUM
Mineral

BITUGUM 20 Mineral
BITUGUM 25 Mineral
BITUGUM 30 Mineral

SBS 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	BITUGUM 20 CXM	BITUGUM 25 CXM	BITUGUM 30 CXM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-	-	-
		Weight (Mass Per Unit Area)	kg/m^2	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.	130	130	130
		Compound Elongation	%	UNI 8202/8	± 15%	1200	1500	1600
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1000	1000	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650	650	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40	40	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	40	40	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	250	250	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	325	325	350
		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%	500	500	500
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000	1000	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	110	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	-25 TO -20	-30 TO -25	≤ -30
		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500	500	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1	< 1
		Vapour Permeability	μ	EN 1931	-	80000	80000	80000
		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%	1000	1000	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650	650	650
		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 - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)	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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

BITUGUM Smooth

Heavy Duty SBS Modified Bitumen Waterproofing Membranes
With Composite Polyester Reinforcement.

THE PRODUCT

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

USES

BITUGUM membranes are used for heavy duty roofing and waterproofing applications with high dimensional stability requirements & subjected to excessive movements induced by stresses, and to extreme weathering conditions.

BITUGUM membranes are particularly recommended for the following applications:

- Protected roofing subject to high movements such as pre-stressed, pre-cast concrete, or steel structures.
- Roofing for substrates where high vapor impermeability is required.
- Protected waterproofing for civil engineering applications such as hydraulic works, parking decks, bridges, viaducts, tunnels, waste dumps, etc.

MAJOR FEATURES

- **Outstanding compound elastic behavior**, which enables the compound to recover 100% of its original dimensions after 100% elongation.
- **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.
- **Excellent Resistance to Chemicals**: the superior quality bitumen compound used in **BITUGUM** 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 **BITUGUM** with isotropic mechanical properties, which enables It to exhibit uniform behavior in all directions unlike other types of non-woven polyester.
- **Enormous Resistance,** to impact loads, tear, and puncture.
- **Optimum performance** under a wide range of temperature fluctuation, (from -30◦C to 130◦C)

SURFACE FINISH

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

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

APPLICATION

BITUGUM 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. **BITUGUM** 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

BITUGUM 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

BITUGUM
Smooth

BITUGUM 20
BITUGUM 25
BITUGUM 30

SBS 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	BITUGUM 20 CX	BITUGUM 25 CX	BITUGUM 30 CX
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	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
		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.	130	130	130
		Compound Elongation	%	UNI 8202/8	± 15%	1200	1500	1600
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1000	1000	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650	650	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40	40	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	40	40	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	250	250	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	325	325	350
		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%	500	500	500
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25	25	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000	1000	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	110	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	-25 TO -20	-30 TO -25	≤ -30
		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500	500	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1	< 1
		Vapour Permeability	μ	EN 1931	-	80000	80000	80000
		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%	1000	1000	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650	650	650
		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 - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)	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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS TORCHFLEX

SBS Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement.

THE PRODUCT

TORCHFLEX is an elastomeric waterproofing membrane, 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 **TORCHFLEX** 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 **TORCHFLEX** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

MAJOR FEATURES

- Substantial dimensional stability provided by the composite reinforcement
- Significant compound elastic, behavior which enables the compound to recover its original dimensions after elongation

USES

TORCHFLEX can be used for roofing and waterproofing applications with high dimensional stability requirements & subjected to normal movements induced by stresses & to normal weathering conditions.

TORCHFLEX membranes is particularly recommended for the following applications:

- Flat and sloped roofs protected applications for small areas.
- Protected waterproofing of substrates subject to movements.
- Under-layer in waterproofing or re-roofing works.

SURFACE FINISH

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

- Polyethylene Film **TORCHFLEX** – E/E

APPLICATION

TORCHFLEX is usually applied by using a propane torch or hot air generator as well as the 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. **TORCHFLEX** 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

TORCHFLEX 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

TORCHFLEX

SBS Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	TORCHFLEX CP
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	100
		Compound Elongation	%	UNI 8202/8	± 15%	800
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	500
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	30
		Elongation At Break - Transverse	%	EN-12311-1	±15	30
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	125
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	150
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	400
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	225
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	10
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	550
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	90
		Flexability At Low Temprature(1)	° C	EN-1109	-	-5 TO 0
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	100
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	500 cycles	UNI 8202/13	-	Passed
			200 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	500
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	-
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	E
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

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 non-woven continuous filament spun-bond 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 thermo-fusible polyethylene film.

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 while the upper surface is covered with one of the following surface finish materials:

- 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.

STANDARD SUPPLY DATA & PALLETISING

Group 100	Group 105	Thickness *	Standard Roll Size	Rolls/ Pallet	
				Group 100	Group 105
200	205	2mm	10 M x 1M	28	28
300	305	3mm	10 M x 1M	28	28
400	405	4mm	10 M x 1M	23	23
500	505	5mm	8 M x 1 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

NiloFlexGF
NiloFlexPP
NiloFlexPS
NiloFlexPX
NiloFlexPY
NiloFlexPZ

SBS Modified Bitumen Waterproofing Membranes

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

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 Temprature	° C	EN-1110	Min.	90	90	90	90	90	90
		Flexability At Low Temprature(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 Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 5 Smooth
NiloFlex 5 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT
NiloFlex 5 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 5** are established by the non-woven continuous filament spun-bond 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 5** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES
NiloFlex 5 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and moderate weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 5 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.

NiloFlex 5 MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

MAJOR FEATURES
- **Significant compound elastic behavior**
- **Enhanced resistance to chemicals**
- **Excellent mechanical properties**
- **Enhanced performance** under a wide range of temperature fluctuation, (From -5 °C to 110 °C)

SURFACE FINISH
The lower surface of **NiloFlex 5** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 5 – S/E**
- Polyethylene Film **NiloFlex 5 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 5 Mineral**

APPLICATION
NiloFlex 5 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 5** 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 5 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 5

NiloFlex 5 GF
NiloFlex 5 PP
NiloFlex 5 PS
NiloFlex 5 PX
NiloFlex 5 PY
NiloFlex 5 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 5					
						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.	110	110	110	110	110	110
		Compound Elongation	%	UNI 8202/8	± 15%	900	900	900	900	900	900
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 Temprature	°C	EN-1110	Min.	90	90	90	90	90	90
		Flexability At Low Temprature(1)	°C	EN-1109	-	-10 TO -5	-10 TO -5	-10 TO -5	-10 TO -5	-10 TO -5	-10 TO -5
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	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.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 10 Smooth
NiloFlex 10 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloFlex 10 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 10** are established by the non-woven continuous filament spun-bond 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 10** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloFlex 10 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and considerable weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 10 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.

NiloFlex 10 Mineral is used for exposed applications or as a cap-sheet in a multi-layer system

MAJOR FEATURES

Significant compound elastic behavior

Enhanced resistance to chemicals

Excellent mechanical properties

Enhanced performance under a wide range of temperature fluctuation, (From -10 °C to 120 °C)

SURFACE FINISH

The lower surface of **NiloFlex 10** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 10 – S/E**
- Polyethylene Film **NiloFlex 10 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 10 Mineral**

APPLICATION

NiloFlex 10 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 10** 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 10 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 10

NiloFlex 10 GF
NiloFlex 10 PP
NiloFlex 10 PS
NiloFlex 10 PX
NiloFlex 10 PY
NiloFlex 10 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 10					
						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.	120	120	120	120	120	120
		Compound Elongation	%	UNI 8202/8	± 15%	1000	1000	1000	1000	1000	1000
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%	125	175	200	225	225	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	125	175	200	225	225	275
		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 Temprature	° C	EN-1110	Min.	100	100	100	100	100	100
		Flexability At Low Temprature(1)	° C	EN-1109	-	-15 TO -10	-15 TO -10	-15 TO -10	-15 TO -10	-15 TO -10	-15 TO -10
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	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	-	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 15 Smooth
NiloFlex 15 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloFlex 15 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 15** are established by the non-woven continuous filament spun-bond 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 15** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloFlex 15 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and significant weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 15 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.

NiloFlex 15 Mineral is used for exposed applications or as a cap-sheet in a multi-layer system

MAJOR FEATURES

Significant compound elastic behavior

Enhanced resistance to chemicals

Excellent mechanical properties

Enhanced performance under a wide range of temperature fluctuation, (From -15 °C to 125 °C)

SURFACE FINISH

The lower surface of **NiloFlex 15** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 15 – S/E**
- Polyethylene Film **NiloFlex 15 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 15 Mineral**

APPLICATION

NiloFlex 15 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 15** 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 15 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 15

NiloFlex 15 GP
NiloFlex 15 PP
NiloFlex 15 PS
NiloFlex 15 PX
NiloFlex 15 PY
NiloFlex 15 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 15					
						GP	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.	125	125	125	125	125	125
		Compound Elongation	%	UNI 8202/8	± 15%	1100	1100	1100	1100	1100	1100
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	600	750	900	950	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	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%	125	175	200	225	225	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	125	175	200	225	225	275
		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 Temprature	°C	EN-1110	Min.	100	100	100	100	100	100
		Flexability At Low Temprature(1)	°C	EN-1109	-	-20 TO -15	-20 TO -15	-20 TO -15	-20 TO -15	-20 TO -15	-20 TO -15
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	Passed	Passed	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	600	750	900	950	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	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	-	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 20 Smooth
NiloFlex 20 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloFlex 20 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 20** are established by the non-woven continuous filament spun-bond 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 20** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloFlex 20 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and critical weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 20 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.

NiloFlex 20 Mineral is used for exposed applications or as a cap-sheet in a multi-layer system

MAJOR FEATURES

Significant compound elastic behavior

Enhanced resistance to chemicals

Excellent mechanical properties

Enhanced performance under a wide range of temperature fluctuation, (From -20 °C to 130 °C)

SURFACE FINISH

The lower surface of **NiloFlex 20** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 20 – S/E**
- Polyethylene Film **NiloFlex 20 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 20 Mineral**

APPLICATION

NiloFlex 20 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 20** 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 20 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 20

NiloFlex 20 GP
NiloFlex 20 PP
NiloFlex 20 PS
NiloFlex 20 PX
NiloFlex 20 PY
NiloFlex 20 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 20					
						GP	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.	130	130	130	130	130	130
		Compound Elongation	%	UNI 8202/8	± 15%	1200	1200	1200	1200	1200	1200
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	600	750	900	950	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	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%	125	200	225	250	250	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	125	225	250	250	250	275
		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 Temprature	°C	EN-1110	Min.	110	110	110	110	110	110
		Flexability At Low Temprature(1)	°C	EN-1109	-	-25 TO -20	-25 TO -20	-25 TO -20	-25 TO -20	-25 TO -20	-25 TO -20
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	Passed	Passed	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	600	750	900	950	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	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	-	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 25 Smooth
NiloFlex 25 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloFlex 25 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 25** are established by the non-woven continuous filament spun-bond 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 25** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloFlex 25 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and extreme weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 25 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.

NiloFlex 25 Mineral is used for exposed applications or as a cap-sheet in a multi-layer system

MAJOR FEATURES

Significant compound elastic behavior

Enhanced resistance to chemicals

Excellent mechanical properties

Enhanced performance under a wide range of temperature fluctuation, (From -25 °C to 130 °C)

SURFACE FINISH

The lower surface of **NiloFlex 25** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 25 – S/E**
- Polyethylene Film **NiloFlex 25 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 25 Mineral**

APPLICATION

NiloFlex 25 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 25** 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 25 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 25

NiloFlex 25 GP
NiloFlex 25 PP
NiloFlex 25 PS
NiloFlex 25 PX
NiloFlex 25 PY
NiloFlex 25 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 25					
						GP	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.	130	130	130	130	130	130
		Compound Elongation	%	UNI 8202/8	± 15%	1500	1500	1500	1500	1500	1500
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	600	750	900	950	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	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%	125	200	225	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	125	200	250	300	300	300
		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 Temprature	°C	EN-1110	Min.	120	120	120	120	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	-30 TO -25	-30 TO -25	-30 TO -25	-30 TO -25	-30 TO -25	-30 TO -25
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	Passed	Passed	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	600	750	900	950	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	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	-	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

SBS

NiloFlex 30 Smooth
NiloFlex 30 Mineral

SBS Modified Bitumen Waterproofing Membranes
With Non-Woven Spun-Bond Polyester Or Glassfiber Reinforcement

THE PRODUCT

NiloFlex 30 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 30** are established by the non-woven continuous filament spun-bond 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 30** is covered with an anti adhesive finish material, whereas the lower surface is laminated with a thermo-fusible polyethylene film.

USES

NiloFlex 30 are multi-purpose membranes for roofing and waterproofing applications subjected to different mechanical stresses, movement and exceptional weathering conditions, in multi-layer systems and can be used as a single layer in specific applications.

NiloFlex 30 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.

NiloFlex 30 Mineral is used for exposed applications or as a cap-sheet in a multi-layer system

MAJOR FEATURES

Significant compound elastic behavior

Enhanced resistance to chemicals

Excellent mechanical properties

Enhanced performance under a wide range of temperature fluctuation, (From -30 °C to 130 °C)

SURFACE FINISH

The lower surface of **NiloFlex 30** is laminated with a Polyethylene film while the upper surface is covered with one of the following surface finish materials:

- Fine Sand **NiloFlex 30 – S/E**
- Polyethylene Film **NiloFlex 30 – E/E**
- Mineral Slate Chips or Special Granules **NiloFlex 30 Mineral**

APPLICATION

NiloFlex 30 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 30** 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 30 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
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 / 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 30

NiloFlex 30 GP
NiloFlex 30 PP
NiloFlex 30 PS
NiloFlex 30 PX
NiloFlex 30 PY
NiloFlex 30 PZ

SBS Modified Bitumen Waterproofing Membranes

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

Properties		Test	Unit	Test Method	Tolerance	NiloFlex 30					
						GP	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.	130	130	130	130	130	130
		Compound Elongation	%	UNI 8202/8	± 15%	1600	1600	1600	1600	1600	1600
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	600	750	900	950	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	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%	125	200	225	275	275	300
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	125	200	250	300	300	300
		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 Temprature	°C	EN-1110	Min.	120	120	120	120	120	120
		Flexability At Low Temprature(1)	°C	EN-1109	-	≤ -30	≤ -30	≤ -30	≤ -30	≤ -30	≤ -30
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.5	±0.5	±0.5	±0.5	±0.5
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness 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	200 cycles	UNI 8202/13	-	-	Passed	Passed	Passed	Passed	Passed
			500cycles			-	Passed	Passed	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	600	750	900	950	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	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	-	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30	≤30	≤30	≤30	≤30	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40	40	40	40	40	40
		Resistance to root pentration	-	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	-	-	-	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR	S or E or SL or GR
		Lower Surface Finish	-	-	-	S or E	S or E	S or E	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com **Email: bitunil@bitunil.com**

BITUFLEX FR Mineral

High Performance Fire Retardant
SBS Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement

SBS

THE PRODUCT

BITUFLEX FR Mineral is a self-protected elastomeric waterproofing membrane, 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 and special **FIRE RETARDING** chemical additives. While the SBS polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUFLEX FR 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 FR 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 FR Mineral can be used for special roofing and waterproofing applications with fire-retarding property requirements & subjected to excessive mechanical stresses, movement, and critical weathering conditions.
BITUFLEX FR Mineral is used as a single layer or as a top layer in an exposed multi layer roofing system for the following roofing applications:

- Exposed roofing in civil, industrial, and military works.
- Exposed re-roofing jobs on 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.

MAJOR FEATURES

- **Enhanced Fire Retarding Properties:** shielding the roof from both spread of flames and fire penetration.
- **Excellent Surface Characteristics:** where the slate chips surfacing reduces the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **High Resistance to Chemicals** and industrial environment when used without protection.
- **High U.V. Resistance**
- **Excellent Isotropic Mechanical Properties** represented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
  - High resistance to mechanical stresses in exposed applications.
- **High Performance** under a wide range of temperature fluctuation,

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

APPLICATION

BITUFLEX FR 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 FR 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 FR 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
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

BITUFLEX - FR

Fire Retardant SBS Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUFLEX FR CXM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	4.5
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	130
		Compound Elongation	%	UNI 8202/8	± 15%	1100
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1000
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	225
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	750
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	500
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	110
		Flexability At Low Temprature(1)	° C	EN-1109	-	-20 TO -15
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	80000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1000
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.bitunil.com
Email: bitunil@bitunil.com

BITUGARDEN

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

APP OR SBS

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) enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUGARDEN** 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 **BITUGARDEN** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

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 the 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 Granules **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.

STANDARD SUPPLY DATA & PALLETISING

Group 100	Group 105	Thickness *	Standard Roll Size	Rolls/ Pallet	
				Group 100	Group 105
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	**Group 1005**	**Weight ****	**Standard Roll Size**	Group 1000	Group 1005
4500	4505	4.5 Kg/ sqm	1M x 10M	25	25
**Weight tolerance as per UEAtc. Directives for Group 1000 and UEAtc. ± 5% for Group 1005.					

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.

BITUGARDEN

BITUGARDEN APP
BITUGARDEN SBS

Anti – Root APP or SBS 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	BITUGARDEN APP CX	BITUGARDEN SBS 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 Temprature	° C	EN-1110	Min.	120	100
		Flexability At Low Temprature(1)	° C	EN-1109	-	-15 to -10	-20 TO -15
		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.	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 pentration	-	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 .

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

BITUTER FR Mineral

High Performance Fire Retardant
APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Reinforcement

APP

THE PRODUCT

BITUTER FR Mineral is a self-protected plastomeric waterproofing membrane, manufactured in an advanced continuous calendaring process by saturating and coating a composite carrier with a waterproofing fire-retardant compound made of a special grade of bitumen, modified with APP polymers and special **FIRE RETARDING** chemical additives. While the APP polymers enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **BITUTER FR 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 **BITUTER FR 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

BITUTER FR Mineral can be used for special roofing and waterproofing applications with fire-retarding property requirements & subjected to significant mechanical stresses and weathering conditions.

BITUTER FR Mineral is used as a single layer or as a top layer in an exposed multi layer roofing system for the following roofing applications:

- Exposed roofing in civil, industrial, and military works.
- Exposed re-roofing jobs on compatible substrates.
- Under roofing clay tiles on pitched roofs where tiles are fixed with mortar
- Flashings for exposed up-stands in APP modified bitumen roofing systems.

MAJOR FEATURES

- **Enhanced Fire Retarding Properties:** shielding the roof from both spread of flames and fire penetration.
- **Enhanced Surface Characteristics:** where the mineral granule surfacing reduces the membrane's exposure to thermal stresses, extending its service life and decelerating its aging.
- **Good Resistance to Chemicals** and industrial environment when used without protection.
- **High U.V. Resistance**
- **Excellent Isotropic Mechanical Properties** represented by:
  - Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - Ideal longitudinal & transverse elongation.
  - Distinguished resistance to mechanical stresses in exposed applications.
- **Superior Performance** under a wide range of temperature fluctuation, (from -10°C to 150°C)

SURFACE FINISH

The lower surface of **BITUTER FR 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 **BITUTER FR Mineral** – GY
- Green **BITUTER FR Mineral** – GR
- Red **BITUTER FR Mineral** – R
- white **BITUTER FR Mineral** – W

APPLICATION

BITUTER FR 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. **BITUTER FR 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

BITUTER FR 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
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

BITUTER - FR

Fire Retardant APP Modified Bitumen Waterproofing Membrane

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

Properties		Test	Unit	Test Method	Tolerance	BITUTER FR CXM
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	4.5
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	35
		Elongation At Break - Transverse	%	EN-12311-1	±15	40
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	275
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	350
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	120
		Flexability At Low Temprature(1)	° C	EN-1109	-	-15 to -10
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	500
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	70000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
			500 cycles			Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1050
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	Passed
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
			500 cycles		-	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

NILOSHEILD APP

APP Modified Bitumen Waterproofing Membrane
With Dual Reinforcement (Glassfiber & Nonwoven Polyester)

APP

THE PRODUCT

NILOSHEILD APP is a plastomeric waterproofing membrane manufactured in an advanced continuous calendaring process by saturating and coating two synthetic carriers (Glassfiber mat and nonwoven Polyester) with a waterproofing compound made of a special grade of bitumen, which is modified with APP polymers. While the polymers APP enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **NILOSHEILD APP** are established by the dual synthetic carriers made of non-woven Polyester and fiberglass mat, 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 **NILOSHEILD APP** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES

NILOSHEILD APP can be used for roofing & waterproofing applications with high dimensional stability requirements and subjected to considerable mechanical stresses & Moderate weathering conditions.

NILOSHEILD APP is a multi-purpose waterproofing membrane particularly recommended in single or multi-layer systems for the following applications:

- Flat and sloped ballasted roofs.
- Underground structures waterproofing.
- Re-roofing works.
- Wet areas and mechanical rooms waterproofing.

NILOSHEILD APP MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

SURFACE FINISH

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

- Fine Sand **NILOSHEILD APP – S/E**
- Polyethylene Film **NILOSHEILD APP – E/E**
- Mineral Slate Chips Or Special Granules **NILOSHEILD APP MINERAL**

APPLICATION

NILOSHEILD APP 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. **NILOSHEILD APP** 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

NILOSHEILD APP 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
3000	3005	3Kg/ sqm	1M x 10M	39	39
4000	4005	4 Kg/ sqm	1M x 10M	30	30
5000	5005	5 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 / 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.

NEILOSHEILD APP

APP Modified Bitumen Waterproofing Membranes
With Dual Reinforcement.

Properties		Test	Unit	Test Method	Tolerance	NILOSHEILD APP
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	150
		Compound Elongation	%	UNI 8202/8	± 15%	-
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	800
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	500
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	45
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	250
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	500
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	375
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	15
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	500
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	100
		Flexability At Low Temprature(1)	° C	EN-1109	-	-10 to -5
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	300
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	-
			500 cycles			-
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	800
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	500
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	-
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	-
			500 cycles		-	-
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	20
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	S or E or SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

NILOSHEILD SBS

SBS Modified Bitumen Waterproofing Membrane
With Dual Reinforcement (Glassfiber & Nonwoven Polyester)

SBS

THE PRODUCT

NILOSHEILD SBS is an elastomeric waterproofing membrane manufactured in an advanced continuous calendaring process by saturating and coating two synthetic carriers (Glassfiber mat and nonwoven Polyester) with a waterproofing compound made of a special grade of bitumen, which is modified with SBS polymers. While the polymers SBS enhance the thermal, mechanical, and aging properties of the membrane compound, the mechanical characteristics of **NILOSHEILD SBS** are established by the dual synthetic carriers made of non-woven Polyester and fiberglass mat, 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 **NILOSHEILD SBS** is covered with an anti-adhesive finish material while the lower face is laminated with a thermo-fusible polyethylene film.

USES

NILOSHEILD SBS can be used for roofing & waterproofing applications with high dimensional stability requirements and subjected to movement, considerable mechanical stresses & moderate weathering conditions.

NILOSHEILD SBS is a multi-purpose waterproofing membrane particularly recommended in single or multi-layer systems for the following applications:

- Flat and sloped ballasted roofs.
- Underground structures waterproofing.
- Re-roofing works.
- Wet areas and mechanical rooms waterproofing.

NILOSHEILD SBS MINERAL is used for exposed applications or as a cap-sheet in a multi-layer system.

SURFACE FINISH

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

- Fine Sand **NILOSHEILD SBS**– S/E
- Polyethylene Film **NILOSHEILD SBS**– E/E
- Mineral Slate Chips **NILOSHEILD SBS MINERAL**
  Or Special Granules

APPLICATION

NILOSHEILD SBS 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. **NILOSHEILD SBS** 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

NILOSHEILD SBS 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
300	305	3mm	1M x 10M	28	28
400	405	4mm	1M x 10M	23	23
*Thickness tolerance as per UEAtc. Directives for Group 100 and UEAtc. ± 5% for Group 105.					
Group 1000	Group 1005	Weight **	Standard Roll Size	Group 1000	Group 1005
3000	3005	3Kg/ sqm	1M x 10M	39	39
4000	4005	4 Kg/ sqm	1M x 10M	30	30
5000	5005	5 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 / 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.

NEILOSHEILD SBS

SBS Modified Bitumen Waterproofing Membranes
With Dual Reinforcement.

Properties		Test	Unit	Test Method	Tolerance	NILOSHEILD SBS
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	4
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-
		Determination Of Width	m	EN-1848-1	± 1%	1
		Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	110
		Compound Elongation	%	UNI 8202/8	± 15%	900
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	800
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	500
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	45
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	250
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	500
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	375
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	15
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	500
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	90
		Flexability At Low Temprature(1)	° C	EN-1109	-	-10 to -5
		Dimensional Stability	%	EN-1107-1	Max.	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	300
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1
		Vapour Permeability	μ	EN 1931	-	40000
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	-
			500 cycles			-
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	800
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	500
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	Passed
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	-
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	-
			500 cycles		-	-
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
		Reaction to fire	Class	EN 13501-1	-	E
		Adhesion Of Granules	%	EN-12039	Max.	≤30
		Adhesion To Concrete (*Torch Applied*)	N/ 50mm	Pelage UEAtc	-	40
		Resistance to root pentration	-	EN-13948	-	NPD
Supply Data		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	M	-	-	10
		Roll Width	M	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule)				
		Upper Surface Finish	-	-	-	S or E or SL or GR
		Lower Surface Finish	-	-	-	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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198
Plant: ASPPC Industrial complex - Merghem - Alexandria
Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

BituNil

SBS

NILO-STICK 1000

SELF-ADHESIVE SBS BITUMEN MEMBRANE

PROPERTIES

1- Safe in application, no torch used, no hazardous fumes involved.

2- Easy to apply.

3- No special tools needed for application.
Applicator tools comprise a brush, a cutter and a rubber roller.

4- Suitable for roofing and re roofing of historical structures, combustible deck structures, health care and educational facilities.

5- Fiberglass reinforcement ensures maximum dimensional stability to the membrane

6- Reliable barrier against vapor and water above and below ground.

7- Provides protection for sub structure against corrosive ground water and salts.

8- Selvage strip provides bitumen to bitumen seal ensuring water tightness at longitudinal joints.

APPLICATION TEMPERATURE

Ideal Application temperature is 10 - 40 °C. For lower temperatures it is essential to heat the primed surface prior to application using a torch or hot air. At above 40 °C it may be difficult to remove the release film and material need to be relocated to a cooler area.

PACKAGING & STORING

Roll Size: 20M X 1M

Storage:

- 6 Months in original packaging, stored in cool, dry conditions, protected against weathering. Open package immediately before laying.
- Store vertically, never stacked. If stored at temperature below 20 ◦C, leave exposed to wormer temperatures before application for 6-8 hours.

DESCRIPTION

Nilo-Stick 1000 is a self-adhesive, cold applied SBS modified waterproofing membrane, with a Fiberglass carrier. It has a release film on the under layer while the upper surface is covered with any of the following surface finish material:

- Nilo-Stick 1000	Polyethylene film 8
- Nilo-Stick 1000 H	Polypropylene film 25
- Nilo-Stick 1000 X	Cross Laminated Polyethylene 100
- Nilo-Stick 1000 A	Aluminum film

USES

Nilo-Stick 1000

1- Bathrooms, Kitchens, and wet areas waterproofing.
2- Base layer in a double layer roofing/ waterproofing system applications.
3- Waterproofing of balconies.

Nilo-Stick 1000H

4- All Above uses in addition to Waterproofing of partially buried walls, cold pipes, tanks, and irrigation ditches.

Nilo-Stick 1000X

5- All above uses in addition to Foundations waterproofing where cross lamination film enhances puncture and impact resistance.

Nilo-Stick 1000A

6- Top layer in a multilayer system or as a single layer in specific exposed applications, where the aluminum surfacing enhances solar reflectivity.

INSTALLATION

A- Priming

a. All surfaces to receive membrane must be clean, dry, and free of any oils or loose material, and must receive a coat of primer. Allow primer to completely cure (2- 6 hours), and apply membrane no later than 24 hrs from priming. Re-prime areas if contaminated by dust.

B- Fixing Membrane

a. Peel back the release film no more than 30 cm at a time, with adhesive side facing primed surface.
b. Press down the membrane against the substrate with a rubber/ wooden roller, starting from center to side edges in order to expel any entrapped air.
c. For vertical application, installation shall be in approximately 2.5M manageable lengths.

C- Overlaps

a. Membranes are produced with selvage to facilitate bitumen to bitumen strong lap joint.
b. Side laps shall be 7-10cm, and end laps 15cm min.
c. After removing selvage release film, press down firmly against side and end laps, with the help of a light roller.

D- Protection against backfill

a. Membrane should always be protected to avoid damage caused by other trades, backfill material, tools, or earth moving equipment.
b. "Nilo-board" asphalt impregnated protection board, by BituNil, shall be applied, spot bonded, to vertical and horizontal surfaces following membrane installation. Horizontal surfaces can receive protective screeds, or concrete instead of the protection board.

NILO-STICK 1000

Self –Adhesive SBS Modified Bitumen Waterproofing Membrane

NILO-STICK 1000
NILO-STICK 1000 H
NILO-STICK 1000 X
NILO-STICK 1000 A

Properties		Test	Unit	Test Method	Tolerance	NILOSTICK 1000	NILOSTICK 1000 H	NILOSTICK 1000 X	NILOSTICK 1000 A
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	1.5	1.5	1.5	1.5
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-	-	-	-
		Determination Of Width	m	EN-1848-1	± 1%	1	1	1	1
		Determination Of Length	m	EN-1848-1	± 1%	10	10	10	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10	± 10	± 10	± 10
Compound Properties		Softening point (R&B)	°C	ASTM D- 36	Min.	70	70	70	70
		Compound Elongation	%	UNI 8202/8	± 15%	1200	1200	1200	1200
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	400	400	400
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	300	300	300
		Elongation At Break - Longitudinal	%	EN-12311-1	Min.	2	2	2	2
		Elongation At Break - Transverse	%	EN-12311-1	Min.	2	2	2	2
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	100	125	125	100
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	100	125	125	100
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	420	420	420	420
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	275	275	275	275
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	7	7	7	7
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	200	200	200	200
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	60	60	60	60
		Flexability At Low Temprature(1)	°C	EN-1109	-	-25 TO -20	-25 TO -20	-25 TO -20	-25 TO -20
		Dimensional Stability	%	EN-1107-1	Max.	±0.1	±0.1	±0.1	±0.1
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	100	100	100	100
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1	< 1	< 1
		Vapour Permeability	μ	EN 1931	-	-	-	-	-
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	-	-	-	-
			500 cycles			-	-	-	-
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	400	400	400
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	300	300	300
		Thermal Ageing in air *(in oven 28 days at 70°C)*	-	UNI 8202 /26	-	-	-	-	-
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	-	-	-	-
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	-	-	-	-
			500 cycles		-	-	-	-	-
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof	F Roof	F Roof	F Roof
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	-	-	-	-
		Adhesion To Concrete	N/ 50mm	Pelage UEAtc	-	25	25	25	25
		Resistance to root pentration	-	EN-13948	-	-	-	-	-
Supply Data		weight	kg/m2	-	-	1.5 / 1.7	1.5 / 1.7	1.5 / 1.7	1.5 / 1.7
		Thickness	mm	-	-	1.5 / 1.7	1.5 / 1.7	1.5 / 1.7	1.5 / 1.7
		Roll Length	M	-	-	20	20	20	20
		Roll Width	M	-	-	1	1	1	1
		Surface finish (E: Polyethylene S: Sand PP: Polypropylene film XL-PE: Cross Lminated Polyethlene)							
		Upper Surface Finish	-	-	-	E or S	PP Film	X-L PE	Aluminum
		Lower Surface Finish	-	-	-	Silicone Release Film	Silicone Release Film	Silicone Release Film	Silicone Release Film

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

BituNil

SBS

NILO-STICK 1500

SELF-ADHESIVE SBS BITUMEN MEMBRANE

PROPERTIES

1- Safe in application, no torch used, no hazardous fumes involved.

2- Easy to apply.

3- No special tools needed for application.

Applicator tools comprise a brush, a cutter and a rubber roller.

4- Suitable for roofing and re roofing of historical structures, combustible deck structures, health care and educational facilities.

5- Polyester reinforcement establishes membrane high tensile strength, puncture resistance, and dimensional stability.

6- Its flexible membrane that easily accommodates substrate movement.

7- Excellent barrier against vapor and water above the below ground.

8- Provides protection for sub structure against corrosive ground water and salts.

9- Selvage strip provides bitumen to bitumen seal ensuring water tightness at longitudinal joints.

APPLICATION TEMPERATURE

Ideal Application temperature is 10 – 40 °C. For lower temperature it is essential to heat the primed surface prior to application using a torch or hot air. At above 40 ◦C it may be difficult to remove the release film and material need to be relocated to a cooler area.

PACKAGING & STORING

Roll Size: 20M X 1M

Storage:

- 6 Months in original packaging, stored in cool, dry conditions, protected against weathering. Open package immediately before laying.
- Store vertically, never stacked. If stored at temperature below 20 ◦C, leave exposed to wormer temperatures before application for 6-8 hours.

DESCRIPTION:

NILO-STICK 1500 is a self-adhesive, cold applied SBS waterproofing membrane, with a composite polyester carrier, It has a release film on the under layer while the upper surface is covered with one of the following surface finish material:

-Nilo-Stick 1500	polyethylene film 8 µ
-Nilo-Stick 1500 H	polyethylene film 25 µ
-Nilo-Stick 1500 X	Cross laminated polyethylene 100 µ
-Nilo-Stick 1500 Mineral	Mineral Granules

USES

Nilo-Stick 1500

1- Waterproofing of protected roofs.
2- Waterproofing of concrete, masonry, and wood surfaces.
3- Waterproofing of cold pipes, ridges and hips, and planter boxes.
4- Waterproofing of footings and foundations walls above and below grade.

Nilo-Stick 1500 H

5- All Above uses in addition to:
Retaining walls, Sub-structures waterproofing, and basements tanking, where the polypropylene film enhances puncture and impact resistance.

Nilo-Stick 1500 X

6- All above uses in addition to:
Heavy duty civil works applications such as bridge deck waterproofing culverts, tunnels, and road ways waterproofing. Where the cross laminated film enhances dimensional stability ,tear strength ,puncture and impact resistance .

Nilo-Stick 1500 Mineral

7-The mineral surfaced membrane is ideal as a top finish layer in a double layer roofing system on exposed roofs, and flashing of up-stands and parapets.

INSTALLATION

A- Priming

a. All surfaces to receive membrane must be clean, dry, and free of any oils or loose material, and must receive a coat of primer. Allow primer to completely cure (2- 6 hours), and apply membrane no later than 24 hrs from priming. Re-prime areas if contaminated by dust.

B- Fixing Membrane

a. Peel back the release film no more than 30 cm at a time, with adhesive side facing primed surface.
b. Press down the membrane against the substrate with a rubber/ wooden roller, starting from center to side edges in order to expel any entrapped air.
c. For vertical application, installation shall be in approximately 2.5M manageable lengths.

C- Overlaps

a. Membranes are produced with selvage to facilitate bitumen to bitumen strong lap joint.
b. Side laps shall be 7-10cm, and end laps 15cm min.
c. After removing selvage release film, press down firmly against side and end laps, with the help of a light roller.

D- Protection against backfill

a. Membrane should always be protected to avoid damage caused by other trades, backfill material, tools, or earth moving equipment.
b. "Nilo-board" asphalt impregnated protection board, by BituNil, shall be applied, spot bonded, to vertical and horizontal surfaces following membrane installation. Horizontal surfaces can receive protective screeds, or concrete instead of the protection board.

NILO-STICK 1500

Self –Adhesive SBS Modified Bitumen Waterproofing Membrane

NILO-STICK 1500
NILO-STICK 1500 H
NILO-STICK 1500 X
NILO-STICK 1500 Mineral

Properties		Test	Unit	Test Method	Tolerance	NILOSTICK 1500	NILOSTICK 1500 H	NILOSTICK 1500 X	NILOSTICK 1500 Mineral
Dimensional Properties		Thickness	mm	EN-1849-1	± 5%	2	2	2	-
		Weight (Mass Per Unit Area)	kg/m^2	EN-1849-1	± 10%	-	-	-	3
		Determination Of Width	m	EN-1848-1	± 1%	1	1	1	1
		Determination Of Length	m	EN-1848-1	± 1%	10	10	10	10
		Straightness (Ortometry)	mm	EN-1848-1	-	± 10	± 10	± 10	± 10
Compound Properties		Softening point (R&B)	° C	ASTM D- 36	Min.	70	70	70	70
		Compound Elongation	%	UNI 8202/8	± 15%	1200	1200	1200	1200
Membrane Properties	Mechanical properties	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	400	425	600	600
		Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300	325	400	400
		Elongation At Break - Longitudinal	%	EN-12311-1	±15	30	30	40	40
		Elongation At Break - Transverse	%	EN-12311-1	±15	45	45	45	50
		Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	175	175	175	175
		Tearing Strength - Transverse(Nail-Shank)	N	EN-12310-1	± 30%	300	300	300	300
		Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	400	400	725	750
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	225	225	350	400
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	10	10	20	20
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	400	400	700	750
	Thermal Properties	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	60	60	60	60
		Flexability At Low Temprature(1)	° C	EN-1109	-	-25 TO -20	-25 TO -20	-25 TO -20	-25 TO -20
		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3	±0.3	±0.3
		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed	Passed	Passed
		Water Impermeablility- Watertightness at High pressure(2)	Kpa	EN-1928 Method B	Min.	100	100	200	200
	Miscellaneous Properties	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1	< 1	< 1
		Vapour Permeability	μ	EN 1931	-	-	-	-	-
		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed	Passed	Passed	Passed
			500 cycles			Passed	Passed	Passed	Passed
		Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	400	425	600	600
		Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300	325	400	400
		Thermal Ageing in air *(in oven 28 days at 70 °C)*	-	UNI 8202 /26	-	-	-	-	-
		Ageing Due To Atmospheric Agents *(U.V Test weathering)*	-	ASTM G 53 UNI 8202/29	-	-	-	-	-
		Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed	Passed	Passed	Passed
			500 cycles		-	Passed	Passed	Passed	Passed
		Fire Classification - Extemal Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof	F Roof	F Roof	F Roof
		Reaction to fire	Class	EN 13501-1	-	E	E	E	E
		Adhesion Of Granules	%	EN-12039	Max.	-	-	-	≤30
		Adhesion To Concrete	N/ 50mm	Pelage UEAtc	-	25	25	25	25
		Resistance to root pentration	-	EN-13948	-	-	-	-	-
Supply Data		weight	kg/m2	-	-	2	2	2	3
		Thickness	mm	-	-	2	2	2	3
		Roll Length	M	-	-	20 / 15	20 / 15	20 / 15	10
		Roll Width	M	-	-	1	1	1	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Granule XL-PE: Cross Lminated Polyethlene)							
		Upper Surface Finish	-	-	-	E or S	PP Film	X-L PE	SL or GR
		Lower Surface Finish	-	-	-	Silicone Release Film	Silicone Release Film	Silicone Release Film	Silicone Release Film

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.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.bitunil.com **Email: bitunil@bitunil.com**

BituNil

BITUMINOUS COATS

NILOCOAT AL

Non - Fibered Aluminum Coating

DESCRIPTION

NILOCOAT AL is a cold applied asphalt base highly reflective aluminum coating. It is formulated with ductile, pliable bitumen dissolved in select petroleum solvents and blended with polished aluminum flakes.

USES

NILOCOAT AL is an excellent protective coating for Built-up-roofing, and modified bitumen membrane roofing.

It is a preservative coating over aged bituminous roofs, in maintenance and repair works.

It is also an effective protective coating over roof flashing details and over metal roofs.

MAJOR FEATURES

- Ready for use, no mixing or dilution needed.
- Highly reflective, up to 70% reflectivity of sunrays, which prolongs the service life of the roofing membranes.
- Restores old weathered existing roofs, in maintenance works, thus delaying need for re-roofing.

APPLICATION

- Thoroughly clean the surface to be coated. All dirt, dust, scale, loose coating and rust must be removed and the surface must be dry before coating.
- Material should be thoroughly stirred prior to application, and periodically during application.
- Apply with roofing brush, squeegee or airless spray equipment at the recommended coverage rates.
- Coating should be applied with all strokes in one direction to achieve color uniformity.
- Best results are achieved when applied at a temperature above 20◦C, and at low relative humidity.

CLEANING

Tools : Clean with kerosene

Hands :Use a hand cleaner or kerosene followed by soap and water.

COVERAGE RATES

0.3-0.5 Kg/M2 (Depending on condition of substrate)

STANDARDS

Complies with ASTM-D-2824, Type I.

PACKING

15Kg & 200 Kg pails.

HEALTH & SAFETY INSTRUCTIONS

- Flammable when wet, Keep away from open fire, sparks or other ignition sources.
- Avoid repeated or prolonged contact with skin. To remove use a hand cleaner that removes oil and grease, then wash with soap and water.
- If in contact with eyes, flush immediately with water to avoid irritation.
- Inhalation may cause dizziness, adequate ventilation must be provided.
- Wear protective clothing, gloves, and goggles.

NILOCOAT AL

Non - Fibered Aluminum Coating

Properties		Test Method	NILOCOAT AL
Density, at 25°C., Kg/liter		ASTM-D-70	0.99 - 1.03
Viscosity @ 25°C., cps		Brookfield	300 – 600
Dry film thickness, 1 Liter//M^2, mm		-	0.3
Color, cured		-	Bright Silver
Color, wet		-	Brown
Drying time	to touch, Hr.	-	2
Drying time	through, Hr.	-	24
Adhesion to dry surfaces		-	Excellent
Reflectance, %		ASTM-D-2824	70 (min.)
Resistance to heat at 60 °C		ASTM-D-2822	No sagging or blistering
Resistance to solvent		-	Poor
Resistance to water Under drainage		-	Good
Under standing water		-	Poor
Service temperature, °C		-	-5 to 60
Non - volatile, % Wt.		ASTM-D-2824	52 – 60
Volatile, % Wt		ASTM-D-2824	40 – 48
Metallic Aluminum Content, % Wt.		ASTM-D-2824	22 (min.)
Shelf Life		-	12 Month (In factory sealed container, stored in shaded ventilated area)

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

بيتونيل BituNil
Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

BituNil

BITUMINOUS COATS

NILOCOAT F

Fibered Coating, Primer

DESCRIPTION

NILOCOAT F is a heavy duty general purpose damp-proofing emulsion coating/ primer. It is clay stabilized and reinforced with non-asbestos fibers. NILOCOAT F is specially formulated to provide high water vapor permeability with high resistance to re-emulsification upon long term contact with water.

USES

• General Damp-proofing: Used on a wide variety of surfaces including concrete, brick, bitumen & mastic asphalt membranes, slates, tiles, lead, copper, zinc, corrugated iron and similar surfaces.

• Lining water tanks (non potable water). Applied on its own or with an open weave glass mesh.

MAJOR FEATURES

▪Fibered extra flexibility

▪Solvent free, odorless, comfortable working conditions, no special ventilation needed.

▪ High temperature stability

▪ High water vapor permeability to prevent blistering.

PREPARATION

▪ Thoroughly clean all surfaces to be coated with NILOCOAT F Emulsion.

▪ Repair any damaged or cracked substrate.

▪ Stir emulsion well before use.

▪ Prepare porous surfaces by priming with NILOCOAT F, diluted 1:1 with water

A Allow to dry before application of coating.

APPLICATION

1. Apply at the rate of 0.5 – 0.7 kg/m2 (depending on substrate condition) using a soft brush or broom to damp surfaces.
2. Application is eased by dampening before and during use.
3. Allow first coat to dry. Then apply the second coat at the same rate of 0.5 – 0.7 kg/m2. Second coat is applied at right angles to the first.
4. For reinforcement and additional strength at joints, open weave glass mesh may be spread over on top of the uncured first coat and under the second coat of NILOCOAT F
5. Keep tools in water during use. Clean with water when wet, with white spirit when dry.
6. Protect from frost and rain until fully cured.

STORAGE

- Store NILOCOAT F under cover, at temperatures between 5°C and 40°C. Stored properly, a shelf life of 12 months can be expected for unopened containers. Storage must be frost free.

PACKING

15 Kg & 200 Kg Containers

HEALTH & SAFETY INSTRUCTIONS

As with all chemical products, care should be taken during use and storage.

Avoid contact with mouth, eyes, and skin.
Wear suitable protective clothing, gloves, and eye/ face protection.

NILOCOAT F

Fibered Coating, Primer

Properties	Test Method	NILOCOAT F
Residue by evaporation, %	ASTM D 2939	48 ± 2%
Ash content, %	ASTM D 2939	20 (max.)
Specific gravity	ASTM D 2939	1.01 ± 0.02
Drying time (firm set)	ASTM D 2939	Less than 24 hrs at 80% RH (± 5%) @ (27± 2) °C
Heat resistance, at 100°C	ASTM D 2939	No flow, sag or blistering
Flammability	ASTM D 2939	No tendency to flash or ignite
Flexibility at 0°C	ASTM D 2939	No cracking or flaking
Water resistance	ASTM D 2939	No blistering or re-emulsification In water
Water Vapor transmission		0.8 g/m2 24Hrs
Shelf Life	-	12 Month (in factory sealed container stored in shaded ventilated area)

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

BituNil

BITUMINOUS COATS

NILOCOAT R

Rubberized Damp-Proofing Coating & Adhesive

DESCRIPTION

NILOCOAT R is a rubberized bitumen damp-proofing coating /adhesive, specially formulated to provide high resistance to the passage of water vapor, and is highly resistant to re-emulsification when in long term contact with water.

NILOCOAT R bonds strongly to most substrates.

USES

- Damp-proofing of structural footings and below grade walls.
- General damp-proofing applications & as a vapor barrier.
- NILOCOAT R bonds extremely well to a wide variety of substrates including concrete, brick, bitumen & mastic asphalt membranes, slates, tiles, etc.

Thus it is used as an adhesive to bond construction materials such as wood block, compatible insulation, tiles,..etc..

MAJOR FEATURES

- Excellent damp-proofing characteristics.
- Superb adhesion
- Excellent movement capability.
- Solvent free - environment friendly.
- No re-emulsification in water.

INSTALLATION

PREPARATION:

A. Thoroughly clean all surfaces to be coated with NILOCOAT R.
B. Repair damaged or cracked substrate.
C. Prepare porous surfaces by priming with NILOCOAT R diluted 1:1 with water.
D. Allow primed surface to dry before application of coating.
E. Stir well prior to application of coats.

APPLICATION:

1. General damp-proofing & vapor barrier.

As a general Damp-proofing for vertical and horizontal application.

a.) Prepare surface as indicated earlier.

b.) Apply in two coats. The first at the rate of 0.6- 0.8 Kg/ m2. (depending on substrate condition) Allow to dry before applying the second coat which should be at right angle to the first, at the same rate.

c.) Use only as damp-proof membrane in sandwich construction. (i.e. Apply as above, blinding the wet second coat with clean, sharp sand before applying a minimum of 50mm sand cement screed surface (horizontal Application), or clean sand backfill (vertical application) .

d.) If NILOCOAT R is to be left exposed to sunlight for any length of time, the wet second coat must be blinded with clean sharp sand.

When used as a vapor barrier, it is essential that there are no imperfections in the coating. Any small hole will destroy the vapor seal.

2. As an adhesive for insulation & tiles

a) Ensure surfaces are clean, smooth, & lightly dampened.
b) Allow both surfaced to be bonded with the rubberized coating at 0.6-0.8 Kg/m2 rate
c) Allow to become tacky before pressing firmly together. Hold material in place until sufficient adhesive strength is developed.1

Store BITUNIL NILOCOAT R under cover, at temperatures between 5°C and 40°C. Storage must be frost free.

PACKING

15Kg and 200Kg containers.

HEALTH & SAFETY INSTRUCTIONS

As with all chemical products, care should be taken during use and storage.

Avoid contact with mouth, eyes, and skin.

Wear suitable protective clothing, gloves, and eye/ face protection.

NILOCOAT R

Rubberized Damp-Proofing Coating & Adhesive

Properties	Test Method	NILOCOAT R
Composition		Rubberized bitumen, water, emulsifying agents
Bitumen modifier	ASTM D 2939	SBR
Specific gravity	ASTM D 2939	1.05 ±0.02
Flammability		No tendency to flash of ignite
Drying time (firm set)		Less than 24 hrs at 80% RH [+5%] @ 27°C [±2°C]
Heat resistance, at 100°C		No flow, sag or blistering
Flexibility at 0°C		No cracking or flaking
Residue by evaporation, %		60 [nominal]
Water vapor transmission (g/m2/24Hrs)		0.8
Water resistance	ASTM D 2939	No blistering or re-emulsification in water
Shelf Life	-	12 Month (in factory sealed container, stored in a shaded ventilated area)

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

H.Q: 50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198.

BituNil

BITUMINOUS COATS

NILOCOAT WB

Water Based, Bituminous Emulsion/ Primer

DESCRIPTION

NILOCOAT WB is a cold applied, water based, asphaltic emulsion for damp-proofing works and for priming and preparation of surfaces to receive waterproofing membrane.

USES

NILOCOAT WB is used on concrete, brick, metal, or wooden substrates, as a damp-proofing protective coating.

It is also used as a primer to promote and improve the adhesion of subsequent bituminous waterproofing membranes to the surface.

MAJOR FEATURES

- The product is solvent free and odorless, ideal for preparation of surfaces in closed premises.
- Allows for comfortable working conditions, no special ventilation needed.
- When used for damp-proofing, product is ready for use, no mixing or dilution needed.
- Eliminates the surface dust and achieves optimal adherence.
- Adheres even on slightly humid surfaces.

USER APPLICATION

NILOCOAT WB should be well stirred before use. It can be applied on dry or slightly humid surfaces using a brush, a roller, a squeegee, or an airless spray equipment. The substrate should be sound, clean, and free of loose particles or greasy residues. NILOCOAT WB is cold applied, ready for use without dilution for damp-proofing applications. It is applied in one or two coats depending on the degree of protection required, allowing a minimum of two hours between coats. When used as a primer dilute with equal quantity of cool, clean water. The primer coating must be left to completely dry before application of the waterproofing membrane.

PACKING

15 Kg & 200 Kg Containers

HEALTH & SAFETY INSTRUCTIONS

As with all chemical products, care should be taken during use and storage.

Avoid contact with mouth, eyes, and skin.

Wear suitable protective clothing, gloves, and eye/ face protection.

NILOCOAT WB

Water Based, Bituminous Emulsion/ Primer

Properties	Test Method	NILOCOAT -WB
Composition		Bitumen, water, and chemical emulsifying agents.
Color (In liquid state)		Brown
(Dried Film)		Black
Drying time on concrete (20 °C to 40 °C) Bone Dry		Approx. 2 Hrs.
Specific Gravity	ASTM-D-2939	1.05 ±0.02
Residue By Evaporation	ASTM D-2939	32 ±2 %
Tests on dry residue:		
Resistance to water	ASTM D-2939	No blistering or re-emulsification
Heat Test, 100°C		No blistering, sagging, or slipping.
Water Solubility (In liquid state)		Total
(Dried film)		Insoluble
Toxicity		Non
Flammability		No tendency to flash or ignite
Container Size		15 & 200 Kg/Pail
Coverage		200- 400 gm/m2 depending on type of substrate and its condition.
Shelf life		12 months (in factory sealed packaging and protected against weathering.)

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

بيتونيل BituNil
Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
H.Q: 50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198.

BituNil

BITUMINOUS COATS

PRIMANIL 41

Bituminous Roofing Primer

DESCRIPTION

PRIMANIL 41 is a cold applied, general purpose roofing primer formulated with highly pliable, flexible bitumen, select petroleum solvents and compounded with wetting and saturation additives.

USES

PRIMANIL 41 is suitable for concrete,, brick, metal, or wooden substrates, to promote and improve the adhesion of subsequent bituminous waterproofing membranes to the surface.

OUTSTANDING FEATURES

▪Select solvent allows for optimum penetration of PRIMANIL 41 into the surface pores, pin holes and cracks.

▪Absorbs the existing dust and scale thus the resulting surface permits the proper bonding of self-adhesive as well as torch able membranes, in addition to any other bituminous adhesives and coatings.

USER APPLICATION

The surface must be thoroughly cleaned, and all dust, dirt, loose coatings, oil or greasy substances removed. Concrete must be completely cured and dried prior to priming.

PRIMANIL 41 should be allowed to dry before application of waterproofing membrane.

It can be applied with a roofing brush, roller, squeegee, or airless spray equipment at the recommended coverage rate.

COVERAGE RATE

0.3 - 0.5 Ltr/M2 (0.2 - 0.4 kg/m2), depending on condition of substrate.

STANDARDS

Complies with ASTM-D-41

PACKING

15 liter pails and 200 liter drums

CLEANING

Tools : Clean with kerosene.

Hands: Use a hand cleaner or kerosene followed by soap and water.

HEALTH & SAFETY INSTRUCTIONS

▪ Flammable when wet, before using an open torch, all pails must be kept away at a distance of minimum 10 meters.

▪Avoid repeated or prolonged contact with skin. To remove use a hand cleaner that removes oil and grease, then wash with soap and water.

▪If in contact with eyes, flush immediately with water to avoid irritation.

▪Inhalation may cause dizziness, adequate ventilation must be provided.

▪Wear protective clothing, gloves, and goggles.

PRIMANIL 41

Bituminous Roofing Primer

Properties	Test Method	PRIMANIL 41
Density @ 25°C, Kg/liter.	ASTMD 70	0.87-0.89
Viscosity, @ 25°C, cps.	Brookfield	70-150
Say bolt Furol Viscosity @ 25°C, seconds	ASTM D88	25-125
Drying time to touch, Hrs.	-	3.5
Drying time through, Hrs.	-	24
Flash point, T.O.C.,°C	ASTM D3143	35 (min.)
Non-volatile, % wt.	ASTM D 402	45 (min.)
Volatile, %, wt.	ASTM D 402	55 (max.)
Water content	ASTM D 95	Nil
Coverage rate	-	0.3 - 0.5 Ltr/M2 (Depending on condition of substrate)
Shelf Life	-	12 Months (in factory sealed container, stored in a shaded ventilated area.)

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

BituNil

BITUMINOUS COATS

PRIMANIL

Solvent Based, Waterproofing Primer

DESCRIPTION

PRIMANIL is a cold applied, solvent based, highly penetrative, primer formulated with selected grade of asphalt and solvents. Once solvents evaporate PRIMANIL forms a waterproof film that resists flow at high temperatures and brittleness at low temperatures.

USES

PRIMANIL is used on concrete, brick, metal, or wooden substrates, to promote and improve the adhesion of subsequent bituminous waterproofing membranes to the surface. It is also ideal for treatment of penetrations, relieves, external perimeters, and vertical components in preparation to receiving the waterproofing membrane.

MAJOR FEATURES

▪The selected solvents ensure optimum penetration and saturation of the substrate pores

▪Ready for use, no mixing or dilution needed.

▪Eliminates the surface dust and achieves optimal adherence.

▪When applied over existing, aged cracked asphalt layer, it revitalizes it in preparation for repair work and maintenance.

USER APPLICATION

Primer is ready for use without dilution. It may be applied with a brush, a roller, a squeegee, or airless spray equipment, in one layer. The substrate should be clean, dry, and free of loose particles. The primer coating must be totally cured before application of the waterproofing membrane.

PACKING

15 liter pails and 200 liter drums

HEALTH & SAFETY INSTRUCTIONS

▪ Flammable when wet, before using an open torch, all pails must be kept away at a distance of minimum 10 meters.

▪Avoid repeated or prolonged contact with skin. To remove use a hand cleaner that removes oil and grease, then wash with soap and water.

▪If in contact with eyes, flush immediately with water to avoid irritation.

▪Inhalation may cause dizziness, adequate ventilation must be provided.

▪Wear protective clothing, gloves, and goggles.

PRIMANIL

Solvent Based, Waterproofing Primer

Properties	Test Method	PRIMANIL	
Composition		Bitumen, Petroleum solvents	
Color		Black	
Drying time on concrete at 25 C° : (To touch)		6 Hrs.	
(through dry)		24 Hrs.	(Depending on application Conditions and temperature)
Specific Gravity	ASTM-D-70	0.80- 0.95 Kg/Lit	
Viscosity @ 25 Cº	ASTM D-2669	20 ± 2/4ml	
Total solids content (%)	ASTM D-402	50- 60 %	
Volatiles content (%)		40-50 %	
Container Size		15 & 200 Lit/Pail	
Coverage		0.5- 0.6 Litre/m2 (depending on type of substrate and its condition)	
Shelf life		12 months (in factory sealed container, stored in a shaded ventilated area)	

The information given in this Technical Data Sheet is given to the best of our knowledge based on laboratory test and practical experience. However, as the product is often used under conditions beyond our control, we cannot guarantee anything but the product itself.

Distributor:

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198

NILOBOARD
Bituminous Protection Board

DESCRIPTION
NILOBOARD is a tough, semi-flexible pre-fabricated protection board, composed of mineral fortified bituminous core, held under pressure between two asphalt saturated carriers.

USES
NILOBOARD is used as a protection layer over waterproofing applications on bridge decks, parking garage decks, terraces, tunnels, foundation walls and slabs, and wet room floors. The tough durable nature of the product makes it ideally suited to withstand the shock and impact of backfilling and paving as well as normal on-site traffic, concreting, or other toppings.

FEATURES
- Protect waterproofing against construction traffic, other trades, and impact of back fill soil.
- Compatible with almost all waterproofing membranes such as bituminous, EPDM, TPO, PVC and coatings such as acrylic, polyurethane, epoxy and others.
- Resistant to salts and chemicals normally found in soil (Chlorides, Sulphates, and Phosphates).
- Rot-proof, un-affected by emersion in ground water, and impervious to water.
- Excellent resistance to puncture & normal site conditions.
- Can bridge over gravel embedded roof surfaces, and can be bent to normal contours while maintaining rigidity, due to being semi flexible.

APPLICATION
The surface to receive the protection board is normally one which has been waterproofed. The waterproofed surface must be clean, free of any debris, or sharp protrusions.
Apply NILOBOARD protection board directly on the waterproofing membrane as soon as practicable.

Horizontal Application:
Butt together all protection board panels and cut to fit all intersecting and protruding surfaces. Cover joints with joint tape if desired. Ensure subsequent ballast layers are applied as soon as possible following protection board application.

Vertical Application:
Protection board is temporarily held in place by spot bonding to the waterproofing membrane using hot asphalt or compatible adhesive. Stagger joints a minimum of 15cm and overlap boards approximately 1cm-2.5cm. Cover joints with joint tape to prevent backfill particles from damaging the membrane. Backfill immediately, using care and caution to avoid damage to waterproofing system.

Form of Supply & Storage
NILOBOARD is supplied in sheets 1M X 2M in standard thicknesses 3mm,4mm, 5mm and 6mm. Boards should be kept stored in pallets placed on level surfaces under shade or cover. Stack no more than two pallets high.

Product	Boards/ Pallet
NILOBOARD 3.0 mm	225
NILOBOARD 4.0 mm	150
NILOBOARD 5.0 mm	125
NILOBOARD 6.0 mm	100

Loading Capacity: 10 pallets/ 20' Container

TECHNICAL DATA

Properties		Value				Norm
	Reinforcement	Double reinforcements				BituNil Internal
	Weight of reinforcements	Min. 240 g/m2				EN 29073
Board Size/Weight Thickness	Nominal thickness	3.0 mm	4.0 mm	5.0 mm	6.0 mm	EN 1849
	Nominal weight	9 kg	12 kg	15 kg	18 Kg	EN 1849
	Board Dimensions	2 m X 1 m				EN 1848
Mechanical Properties	Tensile Strength (Longitudinal)	700 N/5cm	800 N/5cm	900 N/5cm	1000N/5cm	EN 12311
	Tensile Strength, (Transversal)	700 N/5cm	750 N/5cm	750 N/5cm	800 N/5cm	EN 12311
	Tear Resistance, (Longitudinal)	550 N	600 N	700 N	700 N	ASTM D 5147
	Tear Resistance, (Transversal)	500 N	550 N	600 N	600 N	ASTM D 5147
Puncture Resistance	Static Puncture Resistance	15 kg	20 kg	25 kg	30 kg	EN 12730 A
	Dynamic Puncture Resistance	500 mm	600 mm	700 mm	800 mm	EN 12691 B
Additional Characteristics	Water tightness	Impermeable to water (100 kpa)				EN 1928
	Softening point	> 150 ^{0}c				ASTM D 36
	Salt Resistance	Excellent				BituNil Internal
	Water absorption	Max. 1 %				ASTM D 5147

Important Note

Declared values in the data sheet represent the best performance achieved to the best of our knowledge. BituNil reserves the right 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 product for the kind of use is at the client's discretion. Because it has no direct control over the application of its products, BituNil will not accept any liability resulting from the wrong use of its products.

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م

50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (+202) 24511194 - 24511195 Fax: (+202) 24511198

Plant: ASPPC Industrial complex - Merghem - Alexandria

E-mail: bitunil@bitunil.com **Web site: www.bitunil.com**

NILO – KONE Board

Mechanical protection of water proofing

Description:

NILO– KONE is a studded HDPE protection membrane. Which offers great resistance to chemicals, hydrostatic compression and physical damage to the water proofing membranes. Due to its physical and mechanical properties NILO- KONE creates a damp proof barrier that helps foundations and basements reach their expected durability.

USES:

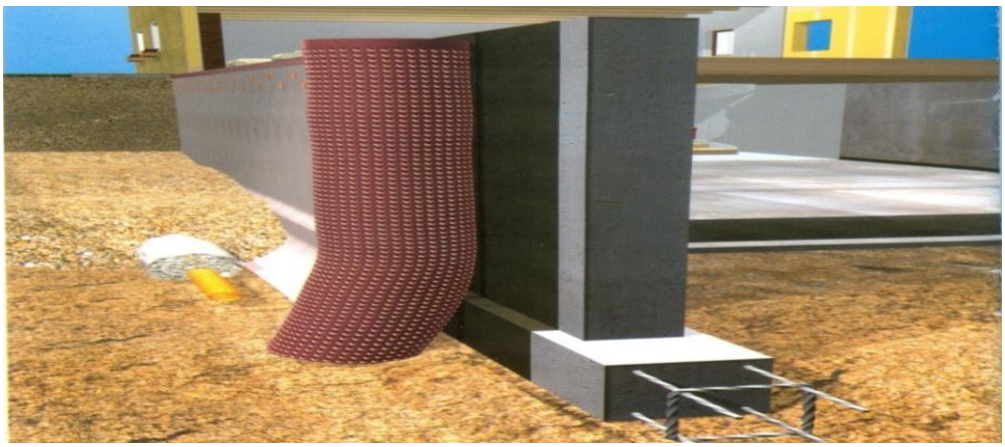
- Protecting traditional water proofing systems, torch-able membrane systems, and adhered reinforced waterproofing films against mechanical damage during the construction process.
- Protecting water proofing systems, on foundation walls, retaining walls, bridge abutments & tunnels, against damages that can occur before and during back fill.

▪NILO– KONE membranes provides an optimal and widely accepted solution thanks to:-

- Ease of Installation.
- Durability
- Capability to create a ventilation gap that keeps the water proofing membranes dry.

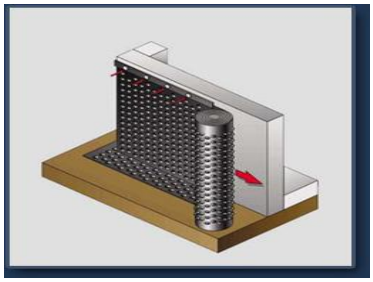
APPLICATION:

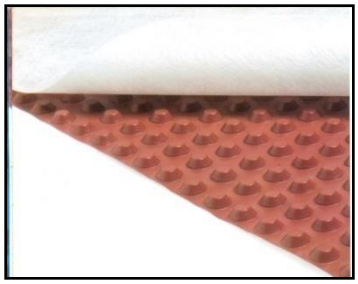
NILO-KONE boards are loose laid to the existing water proofing system for both horizontal and vertical applications, studs facing structure. In case of vertical protection, boards shall be mechanically secured to the top of membrane system. Side and end laps shall be overlapped 8 to 10 cm and preferably taped to prevent fines from entering & puncturing the membrane.



Technical Specification

Properties	Unit	Test Method	Tolerances	Results
Weight	g/m²	EN 9864	± 5%	400
Thickness	Mm	EN 9863-1	± 10%	8
Compression Resistance	KN/m2	-	± 20%	150
Elongation at max. load MD/CMD	%	EN 12311-2	-	> 20 / > 25
Tensile Strength MD/CMD	N/50 Mm	EN 12311-2	-	> 200 / > 200
Packing dimensions Width Length	M M	-	± 3% ± 2%	2.00 30.00
Roll per pallet	No.	-	-	12 Roll





Distributor:

Nile Waterproofing Material Co. S.A.E
شركة النيل للمواد العازلة ش.م.م
50, Al Khalifa Al Maamoun St. Roxy - Heliopolis, Cairo - Egypt, Tel : (202) 24511194 - 24511195 Fax: (202) 24511198