

## **BITUBOND** Mineral

Heavy Duty APP Modified Bitumen Waterproofing Membranes.

#### THE PRODUCT

**BITUBOND** Mineral selfprotected plastomeric waterproofing membranes, manufactured in an advanced continuous calendaring process by saturating and coating a composite carrier with 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 membrane compound. mechanical characteristics of BITUBOND Mineral are established by the composite carrier made of nonwoven Polyester armoured with Glassfiber filaments, which acts as the reinforcement that provides the membrane with the profound mechanical properties of the Polvester 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** civil, roofing 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:

Grev **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	1

<sup>\*</sup>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

						BITUBOND 15	BITUBOND 20
Prop	perties	Test	Unit	Test Method	Tolerance	CZM	CZM
al	S	Thickness	mm	EN-1849-1	± 5%	-	-
Dimensional	Properties	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	5	5
sus	bel	Determination Of Width	m	EN-1848-1	± 1%	1	1
<u> </u>	Pro	Determination Of Length	m	EN-1848-1	± 1%	10	10
		Straightness (Ortometry )	mm	EN-1848-1	-	± 10	± 10
Comp	oound	Softening point (R&B)	°C	ASTM D- 36	Min.	150	150
Prop	erties	Compound Elongation		UNI 8202/8	± 15%	-	-
		Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1200	1200
_	es	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	1100	1100
_	Mechanical properties	Elongation At Break - Longitudinal	%	EN-12311-1	±15	40	40
_	d o	Elongation At Break - Transverse	%	EN-12311-1	±15	45	45
_	rd I	Tearing Strength - Longitudinal ( Nail-Shank )	N	EN-12310-1	± 30%	300	300
_	<u>ic</u> a	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	400	400
_	lan	Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	950	950
_	oc h	Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	600	600
_	ğ	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 <sup>(1)</sup>	°C	EN-1109	-	-15 TO -20	≤-20
es		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3
erti		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed
d <sub>o</sub>	L .	Water Impermeablility- Watertightness at High pressure (2)	Kpa	EN-1928 Method B	Min.	800	800
Membrane Properties		Water Absorption	%	ASTM D-5147	Max.	< 1	< 1
ane		Vapour Permeability	μ	EN 1931	-	80000	80000
훁			200 cycles	11111 0000/40	-	Passed	Passed
Men		Fatigue resistance on cracks	500 cycles	UNI 8202/13		Passed	Passed
	es es	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1200	1200
_	ert	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	1100	1100
	Properties	Thermal Ageing in air (in oven 28 days at 70°C)	-	UNI 8202 /26	-	Passed	Passed
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed	Passed
_	lan	Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed	Passed
_	ce	Taligue resistance at some	500 cycles	0141 0202/02	•	Passed	Passed
_	Mis	Fire Classification - External Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)	B Roof(t2)
_	_	Reaction to fire	Class	EN 13501-1	-	Е	Е
_		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
		weight	kg/m2	-	-	5 to 6	5 to 6
		Thickness	mm	-	-	4 to 5	4 to 5
		Roll Length	М	-	-	10	10
Suppl	ly Data	Roll Width	М	-	-	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.

Email: bitunil@bitunil.com

Tolerances for the above values if not mentioned are according to the UEAtc directives.

- 1) Exact value depends on thickness of the product.
- (2) Deviating from the standard method , The assessment is made in 1 Hour test 4mm or 4.5Kg/m2 products.



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# **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 carrier with composite 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 the mechanical compound, 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

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:
  - o Good tensile strength, tear and puncture resistance.
  - Significant dimensional stability.
  - o 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	Rolls/	Pallet
			Roll Size	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

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

## **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	CZ
nal	တ္သ	Thickness	mm	EN-1849-1	± 5%	4	4
siol	Properties	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	-	-
ens	odc	Determination Of Width	m	EN-1848-1	± 1%	1	1
Dimensional	Ž	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
Prope	erties	Compound Elongation	% N/50mm	UNI 8202/8	± 15%	-	-
		Tensile Strength - Longitudinal		EN-12311-1	± 20%	1200	1200
	ies	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	1100	1100
	ert.	Elongation At Break - Longitudinal	%	EN-12311-1	±15	40	40
	o d	Elongation At Break - Transverse	%	EN-12311-1	±15	45	45
	<u>_</u>	Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	300	300
	jč	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	400	400
	Mechanical properties	Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	950	950
	Jec Jec	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
	Thermal Properties	Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1200	1200
		Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	120	130
w		Flexability At Low Temprature <sup>(1)</sup>	° C	EN-1109	-	-15 TO -20	≤-20
ti eš		Dimensional Stability	%	EN-1107-1	Max.	±0.3	±0.3
per		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed	Passed
Membrane Properties		Water Impermeablility- Watertightness at High pressure <sup>(2)</sup>	Kpa	EN-1928 Method B	Min.	800	800
e	ŀ	Water Absorption	%	ASTM D-5147	Max.	< 1	< 1
oral		Vapour Permeability	μ	EN 1931	-	80000	80000
ᇤ		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed	Passed
Ž	S	Chara Basistana Oficiata I annitudinal	500 cycles	EN 40047 4	. 000/	Passed	Passed
	iğ	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1200	1200
	Properties	Shear Resistance Of joints - Transverse Thermal Ageing in air	N/50mm	EN-12317-1	± 20%	1100	1100
	ı,	(in oven 28 days at 70°C)	-	UNI 8202 /26	-	Passed	Passed
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed	Passed
	ue l	(O.V Test weathering)	200 cycles	0141 0202/29	_	Passed	Passed
	e   -	Fatigue resistance at Joints	500 cycles	UNI 8202/32	_	Passed	Passed
	isc	Fire Classification - External Fire Performance	Class	EN 13501-5/ ENV 1187	_	B Roof(t2)	B Roof(t2)
	Σ	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
		weight	kg/m2	-	-	3 to 6	3 to 6
		Thickness	mm	-	-	2 to 5	2 to 5
		Roll Length	M	-	-	10	10
Supply	y Data	Roll Width	M	-	-	1	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Gra	nule)				
		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.

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# BITUGUARD BITUGUARD

## **Smooth**

**Mineral** 

#### THE PRODUCT

**BITUGUARD** is a Plastomeric waterproofing membrane manufactured in an advanced continuous calendaring process by saturating and coating a heavy duty carrier composite with 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

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 capsheet in a multi-layer system.

#### APP Modified Bitumen Waterproofing Membrane

With Composite Polyester Reinforcement

#### **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
 Polyethylene Film
 Mineral Slate Chips or Special Granules
 BITUGUARD – E/E
 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

			Standard	Rolls/	Pallet		
Group 100	Group 105	Thickness *			Group 105		
300	305	3mm	1M x 10M	28	28		
400	405	4mm	1M x 10M	23	23		
*Thickness tole	*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 tolera	nce as per UEAto	c. Directives for Gr	oup 1000 and U	EAtc. ± 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.

#### **APP Modified Bitumen Waterproofing Membrane**

C: Composite Polyester Reinforcement

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

Pro	perties	Test	Unit	Test Method	Tolerance	BITUGUARD CP
=		Thickness	mm	EN-1849-1	± 5%	4
o no	ies	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	-
nsi	)er	Determination Of Width	m	EN-1848-1	± 1%	1
Dimensional	Properties	Determination Of Length	m	EN-1848-1	± 1%	10
ō	ъ.	Straightness (Ortometry )	mm	EN-1848-1	-	± 10
Com	pound	Softening point (R&B)	°C	ASTM D- 36	Min.	150
Prop	erties	Compound Elongation	%	UNI 8202/8	± 15%	-
		Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	500
	S	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	300
	iğ	Elongation At Break - Longitudinal	%	EN-12311-1	±15	25
	) do	Elongation At Break - Transverse	%	EN-12311-1	±15	30
	p.	Tearing Strength - Longitudinal ( Nail-Shank )	N	EN-12310-1	± 30%	150
	cal	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	200
	Mechanical properties	Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	450
		Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	250
	Ž	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 <sup>(1)</sup>	°C	EN-1109	-	-5 to 0
es		Dimensional Stability	%	EN-1107-1	Max.	±0.3
erti		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
g e	"	Water Impermeablility- Watertightness at High pressure (2)	Кра	EN-1928 Method B	Min.	100
Membrane Properties		Water Absorption	%	ASTM D-5147	Max.	< 1
ane		Vapour Permeability	μ	EN 1931	-	40000
횬		Fallow and the same and the	200 cycles	11111 0000/40	-	Passed
Mer		Fatigue resistance on cracks	500 cycles	UNI 8202/13		Passed
	ties	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	500
	) er	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	300
	Properties	Thermal Ageing in air (in oven 28 days at 70°C)	-	UNI 8202 /26	-	Passed
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed
	ane	Fatimus vasistamas at lainta	200 cycles	LINII 8202/22	-	Passed
	les	Fatigue resistance at Joints	500 cycles	UNI 8202/32	-	Passed
	Nis	Fire Classification - External 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
		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	М	-	-	10
Suppl	ly Data	Roll Width	М	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: G	ranule)			
		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.

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- 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 السنيل للمسواد العسسازلسة ش.م.م

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Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com



# **BITUPLAST** Mineral

APP Modified Bitumen Waterproofing Membrane

#### THE PRODUCT

BITUPLAST Mineral is a selfprotected plastomeric waterproofing membrane, manufactured in an advanced continuous calendaring process by saturating and coating a carrier with composite 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. characteristics mechanical 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 waterproofing roofing and 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 satisfy specific aesthetical requirements and/or for exposed systems for the following roofing applications:

- Exposed civil, roofing in 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:

**BITUPLAST Mineral** – GY Grev 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

<u> </u>					
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

<sup>\*</sup>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

00.	50	: Medium Wt. CX: High Wt. CZ: Heavy Duty .				
Pro	perties	Test	Unit	Test Method	Tolerance	BITUPLAST
						CSM
<u>a</u>	တ္က	Thickness	mm	EN-1849-1	± 5%	-
io	Properties	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	4.5
ens	ed	Determination Of Width	m	EN-1848-1	± 1%	1
Dimensional	Pr	Determination Of Length	m	EN-1848-1	± 1%	10
		Straightness (Ortometry )	mm	EN-1848-1	-	± 10
	oound	Softening point (R&B)	°C	ASTM D- 36	Min.	150
Prop	erties	Compound Elongation	%	UNI 8202/8	± 15%	-
		Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	900
	ies	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	550
	ert	Elongation At Break - Longitudinal	%	EN-12311-1	±15	30
	합	Elongation At Break - Transverse	%	EN-12311-1	±15	35
	d l	Tearing Strength - Longitudinal ( Nail-Shank )	N	EN-12310-1	± 30%	200
	Mechanical properties	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 <sup>(1)</sup>	°C	EN-1109	-	-10 to - 5
ies		Dimensional Stability	%	EN-1107-1	Max.	±0.3
ert		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
Membrane Properties	_	Water Impermeablility- Watertightness at High pressure (2)	Kpa	EN-1928 Method B	Min.	300
<u>Б</u>		Water Absorption	%	ASTM D-5147	Max.	< 1
l a		Vapour Permeability	μ	EN 1931	-	40000
슅		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
Ĭ B	, I	1 augue resistance on cracks	500 cycles	0141 0202/13		Passed
	ties	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	900
	per	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	550
	Properties	Thermal Ageing in air ( <i>in oven 28 days at 70</i> ° <i>C</i> )	-	UNI 8202 /26	-	Passed
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed
	lan	Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
	cel	r aligue resistance at Joints	500 cycles	OINI 0202/32	-	Passed
	Mis	Fire Classification - External Fire Performance	Class	EN 13501-5/ ENV 1187	-	F Roof
	- I	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
		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	М	-	-	10
Suppl	y Data	Roll Width	М	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: G	ranule)			
				_	_	SL or GR
		Upper Surface Finish	-	-	-	SL OI GR

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.

Email: bitunil@bitunil.com

Tolerances for the above values if not mentioned are according to the UEAtc directives.

- 1) Exact value depends on thickness of the product.
- (2) Deviating from the standard method , The assessment is made in 1 Hour test 4mm or 4.5Kg/m2 products.



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Plant: ASPPC Industrial complex - Merghem - Alexandria

Web Site: www.Bitunil.com



## BITUPLAST Smooth

APP Modified Bitumen Waterproofing Membrane

#### THE PRODUCT

**BITUPLAST** is **Plastomeric** waterproofing membrane manufactured advanced in an continuous calendaring process by saturating and coating a heavy duty composite carrier waterproofing compound made of a special grade of bitumen, which is modified with APP polymers. While the APP polymers enhance the mechanical, and aging thermal, 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 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 for following systems the 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:

**BITUPLAST - S/E** Fine Sand Polvethylene 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	Rolls/	Pallet
			Roll Size	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

<sup>\*</sup>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 .

						DITUDI ACT
Pro	perties	Test	Unit	Test Method	Tolerance	BITUPLAST
_		Thickness	100 100	EN-1849-1	± 5%	CS 4
Dimensional	es.	Weight (Mass Per Unit Area)	mm kg/m <sup>2</sup>	EN-1849-1	± 10%	4
oisi	ir	Determination Of Width	кg/m m	EN-1848-1	± 1%	1
nen	Properties	Determination of Width  Determination of Length	m	EN-1848-1	± 1%	10
ä	<u> </u>	Straightness (Ortometry )	mm	EN-1848-1	-	± 10
Comi	pound	Softening point (R&B)	°C	ASTM D- 36	Min.	150
	erties	Compound Elongation	%	UNI 8202/8	± 15%	-
ТТОР	er tilee	Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	900
	<u>"</u>	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	550
	Mechanical properties	Elongation At Break - Longitudinal	%	EN-12311-1	±15	30
	ber	Elongation At Break - Transverse	%	EN-12311-1	±15	35
	[ ]	Tearing Strength - Longitudinal (Nail-Shank)	N	EN-12310-1	± 30%	200
	<del> </del>	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	250
	흗	Tensile Tear Resistance - Longitudinal	N		± 30%	800
	ha	Tensile Tear Resistance - Longitudinal Tensile Tear Resistance - Transverse	N N	ASTM D- 5147 . D 4073 ASTM D- 5147 . D 4073	± 30%	400
	Wed					
		Resistance to Static Loading	Kg	EN 12730 Method A	Min.	20
	$\vdash$	Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	600
	Thermal Properties	Flow Resistance At Elevated Temprature	°C	EN-1110	Min.	110
<b>10</b>		Flexability At Low Temprature <sup>(1)</sup>	° C	EN-1109	-	-10 to - 5
ties		Dimensional Stability	%	EN-1107-1	Max.	±0.3
per		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
ro L	$\Box$	Water Impermeablility- Watertightness at High pressure (2)	Кра	EN-1928 Method B	Min.	300
Membrane Properties		Water Absorption	%	ASTM D-5147	Max.	< 1
ıraı		Vapour Permeability	μ	EN 1931	-	40000
Ĕ		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
ğ	ဖ ပ		500 cycles			Passed
	l iji l	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	900
	be	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	550
	Pro	Thermal Ageing in air (in oven 28 days at 70°C)	-	UNI 8202 /26	-	Passed
	Miscellaneous Properties	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed
	lau l	Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed
	e l	rangue resistance at contis	500 cycles	0141 0202/02	-	Passed
	Nis	Fire Classification - External 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
		weight	kg/m2	-	-	3 to 6
		Thickness	mm	-	-	2 to 5
		Roll Length	М	-	-	10
Suppl	ly Data	Roll Width	М	-	-	1
		Surface finish (E: Polyethylene film S: Sand SL:Slates GR: Gra	anule)			
		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.

Email: bitunil@bitunil.com

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 السنيال للمسواد العسسازلسة ش.م.م

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

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# APP BITUTER Mineral

APP Modified Bitumen Waterproofing Membrane

#### 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 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, mechanical characteristics 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 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 satisfy specific aesthetical requirements and/or for exposed systems for the following roofing applications:

- Exposed roofing civil, in 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 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.
  - o 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:

**BITUTER Mineral** – GY Grey 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

O I AIIDAII	<b>-</b>	IALLEITOIL			
Group	Group		Standard	Rolls/	Pallet
1000	1005	Weight*	Roll size		
				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

<sup>\*</sup>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 .

						BITUTER
Pro	perties	Test	Unit	Test Method	Tolerance	CXM
_		Thickness	mm	EN-1849-1	± 5%	-
Dimensional	Properties	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	4.5
JSic	ert	Determination Of Width	m	EN-1848-1	± 1%	1
nei	Ş.	Determination Of Length	m	EN-1848-1	± 1%	10
ä	_	Straightness (Ortometry )	mm	EN-1848-1	-	± 10
Com	pound	Softening point (R&B)	°C	ASTM D- 36	Min.	150
	erties	Compound Elongation	%	UNI 8202/8	± 15%	-
		Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050
	တ္သ	Tensile Strength - Transverse	N/50mm	EN-12311-1	± 20%	650
	Mechanical properties	Elongation At Break - Longitudinal	%	EN-12311-1	±15	35
	<u> </u>	Elongation At Break - Transverse	%	EN-12311-1	±15	40
	ğ	Tearing Strength - Longitudinal ( Nail-Shank )	N	EN-12310-1	± 30%	275
	ca	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	350
	ani	Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850
	ᄓ	Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450
	ŽΙ	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 <sup>(1)</sup>	°C	EN-1109	-	-15 to -10
es		Dimensional Stability	%	EN-1107-1	Max.	±0.3
Membrane Properties		Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed
윤	"	Water Impermeablility- Watertightness at High pressure (2)	Кра	EN-1928 Method B	Min.	500
Θ		Water Absorption	%	ASTM D-5147	Max.	< 1
ran		Vapour Permeability	μ	EN 1931	-	70000
φ		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed
Me		Fatigue resistance on cracks	500 cycles	ON 6202/13		Passed
	ţį	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1050
	pe	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650
	Properties	Thermal Ageing in air ( <i>in oven 28 days at 70°C</i> )	-	UNI 8202 /26	-	Passed
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed
	lan l	Fatique resistance at Joints	200 cycles	UNI 8202/32	-	Passed
	ပ္တိ		500 cycles		-	Passed
	_ ≝	Fire Classification - External Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)
	≥				_	E
	≥	Reaction to fire	Class	EN 13501-1		
	2	Adhesion Of Granules	%	EN-12039	Max.	≤30
	2	Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> )		EN-12039 Pelage UEAtc		≤30 20
	Σ	Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration	% N/ 50mm -	EN-12039 Pelage UEAtc EN-13948	Max.	≤30 20 NPD
	ν	Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight	% N/ 50mm - kg/m2	EN-12039 Pelage UEAtc	Max.	≤30 20 NPD 3 to 6
	Δ	Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight Thickness	% N/ 50mm - kg/m2 mm	EN-12039 Pelage UEAtc EN-13948	Max. - - - -	≤30 20 NPD 3 to 6 2 to 5
		Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight Thickness Roll Length	% N/ 50mm - kg/m2 mm M	EN-12039 Pelage UEAtc EN-13948	Max. - - - -	≤30 20 NPD 3 to 6 2 to 5
Supp	ly Data	Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight Thickness Roll Length Roll Width	% N/ 50mm - kg/m2 mm M	EN-12039 Pelage UEAtc EN-13948	Max. - - - -	≤30 20 NPD 3 to 6 2 to 5
Suppl		Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight Thickness Roll Length Roll Width Surface finish (E: Polyethylene film S: Sand SL:Slates GR: G	% N/ 50mm - kg/m2 mm M	EN-12039 Pelage UEAtc EN-13948	Max. - - - -	≤30 20 NPD 3 to 6 2 to 5 10
Supp		Adhesion Of Granules Adhesion To Concrete ( <i>Torch Applied</i> ) Resistance to root pentration weight Thickness Roll Length Roll Width	% N/ 50mm - kg/m2 mm M	EN-12039 Pelage UEAtc EN-13948	Max. - - - -	≤30 20 NPD 3 to 6 2 to 5

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.

Email: bitunil@bitunil.com

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Nile Waterproofing Material Co. S.A.E شركة السنيال للمسواد العسسازلسة ش.م.م

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# **APP**

## BITUTER Smooth

APP Modified Bitumen Waterproofing Membrane
With Composite Polyester Painforcement

#### THE PRODUCT

BITUTER is **Plastomeric** waterproofing membrane manufactured in an advanced continuous calendaring process by saturating and coating a heavy duty composite carrier with 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** 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

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:
  - o 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
 Polyethylene Film
 BITUTER – S/E
 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	Rolls/ Pallet						
			Roll Size	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					

<sup>\*</sup>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		
<u></u>		Thickness	mm	EN-1849-1	± 5%	4		
ű	ties	Weight (Mass Per Unit Area)	kg/m <sup>2</sup>	EN-1849-1	± 10%	-		
ınsi	ber	Determination Of Width	m	EN-1848-1	± 1%	1		
Dimensional	Properties	Determination Of Length	m	EN-1848-1	± 1%	10		
ā	_	Straightness (Ortometry )		EN-1848-1	-	± 10		
Compound		Softening point (R&B)	°C	ASTM D- 36	Min.	150		
Properties		Compound Elongation	%	UNI 8202/8	± 15%	-		
		Tensile Strength - Longitudinal	N/50mm	EN-12311-1	± 20%	1050		
	s	Tensile Strength - Transverse		EN-12311-1	± 20%	650		
	ř	Elongation At Break - Longitudinal	%	EN-12311-1	±15	35		
	do	Elongation At Break - Transverse	%	EN-12311-1	±15	40		
	p	Tearing Strength - Longitudinal ( Nail-Shank )	N	EN-12310-1	± 30%	275		
	<u>i</u>	Tearing Strength - Transverse( Nail-Shank )	N	EN-12310-1	± 30%	350		
	Jan	Tensile Tear Resistance - Longitudinal	N	ASTM D- 5147 . D 4073	± 30%	850		
	Mechanical properties	Tensile Tear Resistance - Transverse	N	ASTM D- 5147 . D 4073	± 30%	450		
	Σ	Resistance to Static Loading	Kg	EN 12730 Method A	Min.	25		
		Dynamic Puncturing (Impact Resistance)	mm	EN 12691 Method B	Min.	1000		
	"	Flow Resistance At Elevated Temprature	° C	EN-1110	Min.	120		
	rie tie	Flexability At Low Temprature <sup>(1)</sup>	°C	EN-1109	-	-15 to -10		
ies	Thermal ropertie	Dimensional Stability	%	EN-1107-1	Max.	±0.3		
ert	Thermal Properties	Water Impermeablility- Watertightness at Low pressure	60 Kpa	EN-1928 Method A	-	Passed		
Membrane Properties		Water Impermeablility- Watertightness at High pressure (2)	Kpa	EN-1928 Method B	Min.	500		
ē P		Water Absorption	%	ASTM D-5147	Max.	< 1		
ran		Vapour Permeability	μ	EN 1931	-	70000		
e e		Fatigue resistance on cracks	200 cycles	UNI 8202/13	-	Passed		
Me	w		500 cycles			Passed		
	ţį	Shear Resistance Of joints - Longitudinal	N/50mm	EN-12317-1	± 20%	1050		
	ber .	Shear Resistance Of joints - Transverse	N/50mm	EN-12317-1	± 20%	650		
	Properties	Thermal Ageing in air ( <i>in oven 28 days at 70°C</i> )	-	UNI 8202 /26	-	Passed		
	Miscellaneous	Ageing Due To Atmospheric Agents (U.V Test weathering)	-	ASTM G 53 UNI 8202/29	-	Passed		
	lan	Fatigue resistance at Joints	200 cycles	UNI 8202/32	-	Passed		
	Sce		500 cycles		-	Passed		
	Mis	Fire Classification - External Fire Performance	Class	EN 13501-5/ ENV 1187	-	B Roof(t2)		
		Reaction to fire	Class	EN 13501-1	-	Е		
		Adhesion Of Granules	%	EN-12039	Max.	-		
		Adhesion To Concrete (Torch Applied)	N/ 50mm	Pelage UEAtc	-	20		
		Resistance to root pentration		EN-13948	-	NPD		
		weight	kg/m2	-	-	3 to 6		
		Thickness	mm	-	-	2 to 5		
		Roll Length	М	-	-	10		
Suppl	y Data	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.

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