

Product Technical Information

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TERANAP 331 TP - 2 m wide

Elastomeric bitumen geomembrane

DESCRIPTION

TERANAP 331 TP is a large width waterproofing geomembrane with SBS elastomeric bitumen for civil engineering.

It is manufactured with a special blend and a special reinforcement to resist to chemical aggressions and to high seawater pressure.

The membrane presents a filmed back surface and a sanded surface. A pull-off release strip protects the overlap areas.

ADVANTAGES

High mechanical properties.

- Tensile strength
- Resistance to static puncturing.

Chemical resistance.

Easy to install and repair.

- Due to the flexibility (visco elastic behaviour) of SBS modified bitumen, TERANAP 431 TP will easily take the shape of the soil profile.
- Its low thermal expansion coefficient allows keeping TERANAP 331 TP flattened on the soil profile.
- Manual torching with gas burner.
- Easy to anchor and connect.
- Can be installed at low temperature ($T > 1^{\circ}\text{C}$).



SCOPE OF APPLICATION

- Environmental protection sites:
 - Tailings, Industrial waste containment ponds, Industrial waste water basins.
- Hydraulic and civil works:
 - Dams, Canals, Irrigation works.
 - Tunnels

COMPOSITION

Top Surface	Sanded
Blend	Filerized (Styrene-Butadiene-Styrene) elastomeric bitumen
Reinforcement	Non-woven polyester 180g/m ²
Bottom surface	Root resistant polyester film
Selvedge on bottom surface	Siliconised release film

DIMENSIONAL CHARACTERISTICS

	Nominal value	Critical value
Thickness at the selvedge (mm)	3	2.9
Thickness at the main area (mm)	3	2.9
Length (m)	20	19.8
Width (m)	2	1.98
Weight of a roll	156	148
Selvedge width (+/- 10mm)	150	140
Weight/Sqm (kg)	3.76	3.57

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CARACTERISTICS

	Unit	European Standards	TERANAP 331 TP - 2m	
			Nominal value	Critical value
Strength at break (MD x CMD) ¹	N/5cm	EN 12311-1	850 x 600	740 x 540
Elongation at break	%		40 x 49	35 x 42
Nail tearing resistance	N	EN 12310-1	>200 x 220	200 x 220
Static puncture	kN	EN ISO 12236	2.50	2.46
Static puncture Displacement	mm	EN ISO 12236	48	46
Cold temperature flexibility	°C	EN 1109	- 20	-15
Flow resistance (100 °C, 2h)	mm	EN 1110	100	100
Dimensional stability	%	EN 1107-1	-0,5	-
Water tightness	m ³ /m ² /j	EN 14150	<1 x 10 ⁻⁸	1 x 10 ⁻⁸
Resistance to hydrostatic pressure	bar	CEMAGREF	5	
Resistance to weathering ²		EN 12224	No loss in tensile properties	
Resistance to oxidation		EN 14575	No loss in tensile properties	

¹ MD: Machine Direction; CMD: Cross Direction

² Test-conditions: 5 hours UV cycle at 50 °C followed by 1 hour condensation at 20 °C; Total: 3000 hours.

	Unit	ASTM Standard	TERANAP 431 TP - 2m	
			Nominal value	Critical value
Thickness	mm	ASTM D 5147 - 5	3	2.9
Strength (L x W)	kN/m	ASTM D 7275	18 x 14	16 x 12
Elongation (L x W)	%	ASTM D 7275	35 x 45	30 x 35
Tearing strength (L x W)	N	ASTM D 5884	65 x 50	50 x 44
Tensile Tear strength (L x W)	N	ASTM D 4073	630 x 480	530 x 408
Static puncture resistance	N	ASTM D 4833	390	300
Cold bend test	°C	ASTM D 5147	-25	-20
Watertightness	m/s	ASTM E 96	> 2x10 ⁻¹⁴	2x10 ⁻¹⁴
Gas permeability	m ³ /(m ² .j)	ASTM D 1434	<27.6x10 ⁻⁶	27.6x10 ⁻⁶

PACKAGING

	Length	Width	Nominal Weight / roll	Roll diameter	Rolls number / truck pallet	Weight / truck pallet
TERANAP 331 TP 2m	20m	2m	160kg	320 mm	6	972 kg

- Products are rolled up with a plastic intercalated film (anti-adherent).
- Each roll wears a data sheet indicating the trademark, the product name and the serial number. Rolls are piled up (prismatic volume) during transport.
- For handling and storage facilities, rolls are equipped with mandrels. For 20 m long products: cardboard mandrels of 2 m long and internal diameter of 70 mm (+/- 0.5). For 100 m long products: metallic mandrels of 2.3 m long and internal diameter of 159 mm (+/- 0.5).
- This product is not classified as dangerous according to the international regulation of transport.

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GENERALITIES ABOUT APPLICATION

This product is a part of a waterproofing and draining system using geosynthetic or geomembrane. Generally, the product rolling is carried out to have the polyester film in contact with the deck when directly unrolled (film face exterior of the roll). The overlappings are welded with a propane gas torch and roll pressed. The longitudinal overlaps are torched on 150mm edge mini when unrolling or on 200mm mini for hidden welding. The endlaps are torched on 200mm edge mini. This product must be applied in accordance with the relevant technical specifications.

Our company reserves the right to modify products composition as a result of technologic improvements. This product data sheet supersedes the previous edition. To obtain the updated technical data sheet, please contact our technical department.

This product is not classified as dangerous according to the international regulation (ADR, RID, IATA, RTMDR).