

PRODUCT TECHNICAL INFORMATION

ITA/332

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TERANAP 331 TP - 4 m wide

Elastomeric bitumen geomembrane

DESCRIPTION

TERANAP 331 TP is a large width geomembrane made of SBS modified bitumen for environmental protection (Tailing, Industrial waste containment ...) and hydraulic applications.

It is manufactured with a special blend and a special reinforcement that provide waterproofing, chemical resistance, ageing behaviour and resistance to high mechanical stresses.

This allows the membrane to have superior physical properties (see characteristics table).

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 331 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 ($T > 1^{\circ}\text{C}$).

Ageing

- Strong and weather resistant.



SCOPE OF APPLICATION

High performance reinforced waterproofing geomembrane manufactured with SBS elastomeric bitumen.

This product is used for :

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

COMPOSITION

Surface	Sand
Blend	Filerized (Styrene-Butadiene-Styrene) elastomeric bitumen
Reinforcement	Non-woven polyester + glass mat 50g
Bottom surface	Root resistant polyester film
Selvedge underface	Siliconised release film

DIMENSIONAL CHARACTERISTICS

		Nominal value	Critical value
Thickness (mm)	EN 1849-1	3.6	3.3
Weight (kg/m ²)	EN 1849-1	4.15	3.84

Length (m)	100	99
Width (m)	4	3.96
Overlapping (mm)	225	200

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CARACTERISTICS

	Unit	Standard	TERANAP 331 TP - 4m	
			Nominal value	Critical value
Strength at break (MD x CMD) ¹	N/5cm	EN 12311-1	1000 x 650	870 x 570
Elongation at break	%		49 x 53	42 x 45
Static puncture:		EN ISO 12236		
- Force	kN		44	42
- Displacement	mm	2.50	2.30	
Nail tearing resistance	N	EN 12310-1	240 x 250	240 x 250
Cold temperature flexibility	°C	EN 1109	- 20	-15
Flow resistance (100 °C, 2h)	mm	EN 1110	100	100
Water tightness	m ³ /m ² /j	EN 14150	1 x 10 ⁻⁷	
Gas tightness	m ³ /m ² /j	ASTM D 1434	2,76 x 10 ⁻⁶	
Resistance to oxidation		EN 14575	Pass	
Resistance to weathering ²		EN 12224	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.

PACKAGING

	Length	Width	Nominal Weight / roll	Roll diameter
TERANAP 331 TP 4m	100m	4m	1775 kg	660 mm

- Products are rolled up with a plastic intercalated film.
- Each roll wears a data sheet indicating the trademark, the product name and the serial number. Rolls are piled up (prismatic volume) during transport.
- Rolls are equipped with metallic mandrels of 4.8 m long.
- This product is not classified as dangerous according to the international regulation of transport.

NOTE

- 1) Where 2 values for given characteristics are shown, the first is for the longitudinal direction and the second is for the cross direction.
- 2) Average values comply to UEAtc standard project (prEN WI 002254041). The manufacturing tolerances comply to UEAtc standards.
- 3) The information about purpose and methods of application of the product does not prevail against local regulations and practices. In case of doubt, do not hesitate to contact the Siplast's Technical Department.
- 4) Siplast reserves the right to change its composition as a result of technical and experimental improvements. This product data sheet supersedes any previous edition, to obtain the up-dated technical data sheet, please contact the Siplast's Technical Department.
- 5) This document is only a product technical data sheet. For each waterproofing design, please, consult the related technical agreement and in case of doubt contact the Siplast's Technical Department.

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.