



FLAGON GEOP 1.2, 1.5, 1.8, 2.0 and 2.4 mm

REINFORCED TPO MEMBRANE FOR HYDRAULIC WORKS

USE – APPLICATION

FLAGON GEOP is a TPO thermoplastic membrane dimensionally stabilized with a sheet of glass fibre, specifically designed for waterproofing basins, tanks, canals and similar structures.

This membrane lining can contain salt or fresh water and low-concentration liquid chemicals. To verify the compatibility with the specific chemical liquids, please contact the technical office CIVILROCK (tech-office@soprema.it).

The sheets are welded together by applying hot air or using hot wedge, with manual or automatic welder. The welding can be made either with a track that with double track. The double track allows to perform a pneumatic test with air.



FLAGON GEOP is compatible with all the accessories and membranes in the FLAGON TPO range.

DESCRIPTION

FLAGON GEOP membrane is a synthetic membrane made from TPO by co-extrusion. It has different physical-chemical properties on each side:

- the upper surface (light green) is treated against UV rays
- the underside (black) is highly resistant to puncture and perforation by roots

Any tears in the light green upper layer (signal-layer) of the membrane can be seen immediately due to the difference in colour between the two sides. A glass fibre sheet is positioned between the two layers.

The raw materials used to produce FLAGON TPO membranes are obtained by mixing modified polyolefins with different additives by means of a process that creates a paste which is later transformed into granules. This combination gives the synthetic membranes the following advantages:

- High resistance to ageing and weathering
- The elastomer component provides suppleness and flexibility with high mechanical and chemical resistance

CIVILROCK attaches the highest importance to the quality of its products. This is why we operate a quality assurance system according to ISO 9001 BSI certified.

MAIN ADVANTAGES

- High resistance to weathering and UV rays
- Includes a signal layer
- High mechanical resistance
- High puncture resistance
- Resistance to perforation by roots
- Environmentally-friendly and non-toxic

SUGGESTED INSTALLATION EQUIPMENT

- Manual welding with hot air
- Automatic welding machine with hot air
- Automatic welding machine with double track

CIVILROCK reserves the right, as technology and know-how progress, to modify without warning the composition and conditions of use of its materials, and subsequently their price. As a result, orders shall only be accepted on the basis of the terms and technical specifications applicable at the time of receipt.



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Technical data sheet No. WPSIT0033.a

Cancels and replaces WPSIT0033-17.02 (ENG)

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CHARACTERISTICS

ESSENTIAL CHARACTERISTIC	Standard	GEOP 1.2	GEOP 1.5	GEOP 1.8	GEOP 2.0	GEOP 2.4
Tensile strength (N/mm ²)	EN 527-3	> 9				
Static puncture resistance (N)	EN 12236	> 750	> 1000	> 1200	> 1350	> 1550
Water permeability	EN 14150	< 10 ⁻⁶ m ³ m ⁻² d ⁻¹				
Durability: Oxidation, variation in tensile properties (%)	EN 14575	≤ 25				
Environmental stress cracking (h)	ASTM D 5397	≥ 200				
Weathering, variation in tensile properties (%)	EN 12224	≤ 25				

EN 13361 and EN 13362

ADDITIONAL CHARACTERISTIC	Standard	GEOP 1.2	GEOP 1.5	GEOP 1.8	GEOP 2.0	GEOP 2.4
Thickness (mm)	EN 1849-2	1.2 (±5%)	1.5 (±5%)	1.8 (±5%)	2.0 (±5%)	2.4 (±5%)
Mass per unit area (kg/m ²)	EN 1849-2	1.26	1.58	1.89	2.10	2.52
Breaking strength (%)	EN 527-3	≥ 550				
Cold bending (°C)	EN 495-5	≤ -40				
Water permeability after 6 hrs at 0.5Mpa	EN 1928 (B)	Watertight				
Resistance to perforation by roots	CEN TS 14416	No perforation				
Tear resistance (N/mm)	ISO 34 sample fig.2	≥ 45				
Resistance to thermal ageing in water: variation in tensile strength (%) mass loss (%)	EN 14415 (A and B)	< 25 < 5				

PRODUCTION STANDARD

Thicknesses	1.2 mm	1.5 mm	1.8 mm	2.0 mm	2.4 mm
Numbers of rolls on each pallet	23	23	18	18	14
Roll length / width	25 ml/2.10 ml	20 ml / 2.10 ml (other lengths available on request)			
Colours available	Light green (surface) / Black (underside)				

CE MARKING

Unique identification code of the product-type: WPSIT0033

FLAGON GEOP membranes are produced by SOPREMA srl in Chignolo d'Isola (Italy) and are CE marked no. 1085-CPR-009 in accordance with EN 13361:2013 and EN 13362:2013.

CERTIFICATION

FLAGON GEOP has obtained the following certifications:

France:

- Mentioned in CPP (Technical specifications): Basins, Tanks, Canals, Water towers and similar structures, by DEKRA.
- Certification ASQUAL for FLAGON GEOP 1.2 mm.

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