

FLAGON P 2.0 and 3.0 mm

TWO-COLOURED TPO MEMBRANE FOR UNDERGROUND WORKS

USE - APPLICATION

FLAGON P is a two-coloured membrane used as a waterproofing layer in civil engineering and building structures, such as:

- Tunnels and buried galleries,
- Cut and cover tunnels,
- Underground works,
- Coverings of buried structures,
- Underground car parks.

The waterproofing membrane FLAGON P includes a thin colored layer on the visible face of the membrane that allows a quick visual check of any damage occurred to the membrane during the application. This layer is called the "signal-to-layer".

FLAGON P membrane can be used as part of a single-layer waterproofing system, compartmentalised or not, and in Flag Vacuum system.

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 allow to perform a pneumatic test with air.

DESCRIPTION

FLAGON P membrane is a synthetic TPO membrane made by co-extrusion with an insert of glass fibre. It is highly resistant to attack by micro-organisms and perforation by roots. It is a different colour on each side:

- the upper surface (light green), which accounts for less than 20% of the total thickness, forms the "signal layer".
- the underside (black) is highly resistant to puncture and perforation by roots.

FLAGON P is not UV resistant..

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

- Excellent weldability
- Includes a signal layer
- High resistance to attack by micro-organisms and perforation by roots
- Can be used in the Flag Vacuum system

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.



FLAG S.p.A. – SOPREMA GROUP

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CHARACTERISTICS

ESSENTIAL CHARACTERISTIC	Standard	P 2.0	P 3.0	
Reaction to fire	EN 13501-1	E		EN 13967
Water tightness at 2kPa and 60kPa	EN 1928 (B)	Watertight		
Tear strength (N)	EN 12310-1	> 150	> 225	
Joint strength (N/50mm)	EN 12317-2	> 600	> 900	
Resistance to impact (mm)	EN 12691	≥ 750	≥ 1 100	
Tensile strength (N/mm ²)	EN 12311-2	> 10		
Elongation at break (%)	EN 12311-2	> 550		
Resistance to static loading (kg)	EN 12730	> 20		
Durability				EN 13491
After thermal ageing	EN 1296	Watertight at 2kPa and 60 kPa		
After immersion in chemicals	EN 1847	Watertight at 2kPa and 60 kPa		
Tensile strength (N/mm ²)	EN ISO 527-3	> 10		
Static puncture resistance (kN)	EN ISO 12236	> 1,35	> 2,2	
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		

ADDITIONAL CHARACTERISTIC	Standard	P 2.0	P 3.0
Thickness (mm)	EN 1849-2	2.0 (±5%)	3.0 (±5%)
Mass per unit area (kg/m ²)	EN 1849-2	2.10	3.15
Cold bending (°C)	EN 495/5	≤ - 40	
Resistance to perforation by roots	CEN TS 14416	No perforation	

PRODUCTION STANDARD

Thickness	2.0mm	3.0mm
Number of rolls on each pallet	18	11
Roll length / width	20ml (other lengths available on request) / 2.10ml	
Available colours	Light green (surface)/ Black (underside)	

CE MARKING

Unique identification code of the product-type: WPSIT0037

FLAGON P membranes are produced by the FLAG Spa factory (SOPREMA group) in Chignolo d'Isola (Italy) and are CE marked in accordance with EN 13491:2013, certificate no. 1085-CPR-0013 and with EN 19367:2012, certificate no. 1085-CPR-0037.

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