

FLAGON P/ST 2.0 mm

STRUCTURED TPO MEMBRANE FOR FLAG VACUUM SYSTEM

USE – APPLICATION

FLAGON P/ST is a structured membrane specifically designed to waterproof with the FLAG Vacuum system. It performs the function of layer functionality Vacuum and is positioned above the waterproofing TPO membrane. The special embossed surface allows the execution of tests Vacuum and facilitate the eventual operations of resin injections.

This system can be used in civil engineering and building operations, such as:

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

The waterproofing membrane FLAGON P/ST is combined with FLAGON P waterproofing membrane and FLAGON PZ TPO protection membrane to make up the "FLAG Vacuum" system. This system consists of making a two-ply, compartmentalised waterproof wall. This system allows waterproofing tests to be carried out at all the stages of construction, and also throughout the lifespan of the structure. Furthermore, this process allows the volume of any injections to be checked if necessary.

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.

FLAGON P/ST is compatible with all accessories and membranes in the FLAGON TPO range.

In combination to this membrane are the following accessories:

- Injection valves,
- Injection clips ø10 mm,
- Injection pipe ø10 mm.

DESCRIPTION

FLAGON P/ST membrane is a structured single-ply 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/ST 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
- Can be used in the Flag Vacuum system
- High resistance to attack by micro-organisms and perforation by roots
- Embossed surface for the execution of Vacuum tests

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/ST 2.0	
Reaction to fire	EN 13501-1	E	EN 13967
Water tightness at 2kPa and 60kPa	EN 1928 met.B	Watertight	
Tear resistance (N)	EN 12310-1	> 120	
Joint strength (N/50mm)	EN 12317-2	> 450	
Resistance to impact (mm)	EN 12691	≥ 450	
Tensile strength (N/mm ²)	EN 12311-2	> 9 (L/T)	
Elongation at break (%)	EN 12311-2	> 400 (L/T)	
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	> 9 (L/T)	
Static puncture resistance (kN)	EN ISO 12236	> 1,35	
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/ST
Thickness including embossing (mm)	EN 1849-2	2.0 (±5%)
Mass per unit area (kg/m ²)	EN 1849-2	2.10
Cold bending (°C)	EN 495/5	< - 40
Resistance to perforation by roots	CEN TS 14416	No perforation

PRODUCTION STANDARD

Thickness	2.0mm
Number of rolls for pallet	18
Roll length / width	20 ml (other lengths available on request) / 2.05ml
Available colours	Light green (surface)/ Black (underside)

CE MARKING

Unique identification code of the product-type: WPSIT0040

FLAGON P/ST membranes are produced by the FLAG Spa factory (SOPREMA group) in Chignolo d'Isola (Italy) and are CE marked no. 1085-CPR-0013 in accordance with EN 13491:2013 and no. 1085-CPR-0037 in accordance with EN 13967:2012.

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