



## FLAGON BT/ I 1.5, 2.0 and 3.0 mm

### TRANSPARENT PVC-P MEMBRANE FOR UNDERGROUND WORKS

#### USE – APPLICATION

FLAGON BT/I is a transparent synthetic membrane used as a waterproofing layer in civil engineering and building structures such as:

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

The transparency of this membrane allows easy visual inspection of weld quality.

FLAGON BT/I 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.

FLAGON BT/I is compatible with all the accessories and membranes in the FLAGON PVC range.

#### DESCRIPTION

FLAGON BT/I membrane is a non-reinforced synthetic single-ply membrane made by co-extrusion from transparent PVC-P. It is highly resistant to attack by micro-organisms and perforation by roots. FLAGON BT/I is not UV resistant.

It's also available FLAGON BT/I/500, having a non-woven geotextile 500 g/m<sup>2</sup> coupled on the lower face of the membrane.

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
- Facilitates visual inspection of welds
- 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.





# Technical data sheet No. WPSIT0020.b

Cancels and replaces WPSIT0020.a (ENG)

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### CHARACTERISTICS

ESSENTIAL CHARACTERISTIC	Standard	BT/I 1.5 mm	BT/I 2.0 mm	BT/I 3.0 mm	
Reaction to fire	EN 13501-1	E			EN 13967
Water tightness at 2kPa and 60kPa	EN 1928 (B)	Watertight			
Tear resistance (N)	EN 12310-1	> 375	> 500	> 750	
Joint strength (N/50mm)	EN 12317-2	> 750	> 1 100	> 1 500	
Resistance to impact (mm)	EN 12691	≥ 450	≥ 750	≥ 1 200	
Tensile strength (N/mm <sup>2</sup> )	EN 12311-2	> 16 (L/T)			
Elongation at break (%)	EN 12311-2	> 300 (L/T)			
Resistance to static loading (kg)	EN 12730	> 20			
Durability: - After thermal ageing - After immersion in chemicals	EN 1296 EN 1847	Watertight at 2kPa and 60 kPa Watertight at 2kPa and 60 kPa			
Tensile strength (N/mm <sup>2</sup> )	EN ISO 527-3	> 16 (L) > 16 (T)			EN 13491
Resistance to static puncture (N)	EN ISO 12236	≥ 1 650	> 2 250	> 3 700	
Water permeability	EN 14150	< 10 <sup>-9</sup> m <sup>3</sup> m <sup>-2</sup> d <sup>-1</sup>			
Durability: - Oxidation, variation in tensile properties (%) - Environmental stress cracking	EN 14575 ASTM D 5397	≤ 25 not applicabl			

ADDITIONAL CHARACTERISTIC	Standard	BT/I 1.5 mm	BT/I 2.0 mm	BT/I 3.0 mm
Thickness (mm)	EN 1849-2	1.5 (±5%)	2.0 (±5%)	3.0 (±5%)
Mass per unit area (kg/m <sup>2</sup> )	EN 1849-2	1.83	2.44	3.66
Transparency (%)	UNI 8028	≥ 70		
Cold bending (°C)	EN 495/5	≤ - 25		
Resistance to perforation by roots	CEN TS 14416	No perforation		

### PRODUCTION STANDARD

Thickness	1.5 mm	2.0 mm	3.0 mm
Number of rolls on each pallet	23	18	11
Roll length / width	20 ml (other lengths available on request) / 2.10 ml		
Colour	Transparent		

### CE MARKING

Unique identification code of the product-type: WPSIT0020

FLAGON BT/I membranes are produced by SOPREMA srl in Chignolo d'Isola (Italy) and are CE marked in accordance with EN13491:2013, certificate no. 1085-CPR-0012 and with EN 19367:2012, certificate no 1085-CPR-0036.

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