

## CWC®SMARTSHIELD PVC

### Geomembrane with Twin Signal Color (Twin Color) For Tunnel and Basement Waterproofing

#### Description

Non-reinforced geomembrane, opaque, made of flexible polyvinyl chloride (PVC-P), with thin yellow signal layer (PVC-P), designed for tunnels and basement works. This geomembrane is not suitable for permanent exposure to UV radiation.

The use of a geomembrane with a thin signal layer of clear color allows:

- Better in lighting in the tunnel under construction by the reverberation of the artificial lights.
- An easy visual detection of the damages caused to the geomembrane as well as during the installation and during the successive works. Indeed, if the geomembrane, locally, sustains loss of thickness by mechanical, thermal or other aggression, the thin <<signal>> layer will be damaged, and will let appear the dark layer of the geomembrane.

#### Advantages

- Manufactured in ISO 9001 & ISO 14001 certified plant
- Mechanical properties in accordance with EN 13491
- Geomembrane with thin yellow signal layer (twin colors)
- Hardly combustible (B2-ON B 3800/1, B2-DIN 4102, IV.2-SIA 280, CLASS E-EN ISO 11925)
- Resistant to swelling, rotting and ageing
- Very high level of water tightness, even with permanent deformation
- High capacity for adaptation to irregularities or deformation of support due to its high deformability and weld strength
- High resistance to puncturing
- Root resistance in accordance with EN14416

#### Domains of Application

CWC®SMARTSHIELD PVC membranes are ideal for high performance use in waterproofing systems. They are used on low slope concrete roofs, balconies, multi-storied car parks, tunnels, for lining sewerage canals, sub grade structures and any concrete or cementitious flat surface that needs waterproofing.

#### Method of Application

Hot air or hot welding achieves correct assembly of the geomembrane. The weldability and the quality of the welding done on site can be influenced by atmospheric conditions and by the state of surface of the geomembrane (clean and dry) and must be adapted in consequence.

An anti-puncturing geotextile or a composite (protective membrane with laminated fleece) should be placed onto the support of the waterproofing.

In case the geomembrane will be covered with sand, gravel or concrete a geotextile or a protection membrane of non-reinforced CWC®SMARTSHIELD PVC should be placed in between the geomembrane can be used on a bituminous support after the insertion of a suitable separate.

#### Packing

2m x 20m roll

#### Safety

- Wear hand gloves, safety shoes and safety goggles while using and handling the product.
- In case eyes or mouth are affected wash with plenty of clean water and seek medical treatment immediately.

Before use, refer to the Material Safety Data Sheet.

The MSDS is available on [www.cwcchemical.in](http://www.cwcchemical.in)

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Characteristics	Norms	Units	Specifications
Thickness	EN 1849-2	mm	2.0 ± 5 %
Tensile Strength	EN ISO 527	N/mm <sup>2</sup>	≥ 15
Elongation at failure	EN ISO 527	% KN/m	≥ 300
Tear Strength	EN ISO 34	%	≥ 42
Dimensional stability after accelerated ageing(6h/80 °C)	EN ISO 1107-2		< 2%
Puncture Resistance ( CBR)	EN ISO 12236	N	> 2400
Height of fall without perforation	DIN 16726	mm	>1100
Cold folding resistance	EN 495-5		No cracks at - 20° C
Resistant under water pressure	DIN 16726		waterproof at 10 bar/10 hr. waterproof at 6 bar/72 hr.
Behavior after storage in hot water ( 8 months/50 °C)	SIA V 280		
Mass variation			< 4 %
variation at Elongation at failure			< 20 %
variation of tensile strength			< 20 %
Folding at a temperature of - 20 °C			No cracks at - 20° C
Behavior after long-term ageing 80° C/70 days	DIN 16726		
General appearance			No blister
dimensional Stability		%	< 2%
variation of tensile strength		%	≤ 10 %
variation at Elongation at failure		%	≤ 10 %
Folding at a temperature of - 20 °C			No cracks at - 20° C
Behavior after storage in acid and / or alkaline solutions ( 56 d / 50 °C)	EN 14416		
Variation of tensile strength,			≤ 10 %
Variation at Elongation at failure			≤ 10 %
Folding at a temperature of - 20 °C			No cracks at - 20° C
Root Resistance	EN 14416		Resistant
Oxidation resistance	EN 14575		Conform
Behavior in fire	B2 ON B 3800/1		B2
	SIA 280		5.2
	DIN 4102		B2
	EN ISO 11925		Class E