

PLASTICISED PVC – SYNTHETIC MEMBRANE

IMPERVINYL

DESCRIPTION

IMPERVINYL is synthetic membrane made of Plasticized PVC manufactured by twin coloured co-extrusion method. Specially designed to suit for hot and tropical climatic conditions (Koppen – Geiger Climate Classification system).

IMPERVINYL membranes are in compliance with EN 13491- Geosynthetic barrier- Characteristics required for use as a fluid barrier in the construction of tunnels and underground structures.

TYPICAL USES

All types of Tunnels, Substructure

Basement & Foundation

TECHNICAL CHARACTERISTICS

Optimized Tensile Strength and Elongation

Heat Weldable

Signal layer shows damage and aids visual inspection on-site

High mechanical resistance and elasticity

Long life expectancy

Resistance to wash-out action

Resistance to root penetration

Resistance to bursting at high water pressure

Can be installed on wet substrates

Double weld allows pressure testing of joints

Loose laid to act independently of structural movement

PACKAGING AND ROLL SIZES

IMPERVINYL is supplied in various thicknesses with 2.10 meter width. Lengths can be manufactured to suit specific requirements but is generally 20-25 meters.

Thickness	1.5mm	2.0mm	2.2mm	3.0mm
Width	2.10m	2.10m	2.10m	2.10m
Length	25m	25m	20m	20m
Colour	Surface Smooth, Blue/Black and other colours on request			

APPLICATION PROCEDURE

Loose laid and mechanically fastened, or loose laid and ballasted in accordance with the Application Manual for sheet waterproofing membrane installations.

All membrane overlaps must be welded i.e. using hand welding guns and pressure rollers or automatic heat welding machines, with adjustable and electronically controlled welding temperatures, equivalent to Leister welding machines.

Membrane surfaces must be thoroughly cleaned free of all bond inhibiting substances prior to commencement of welding.

Welding parameters, such as speed and temperature must be established with trials on site, prior to any welding works. Please contact IMI for specific application assistance. Installation method

OTHER IMPERVINYL GRADES

For exposed to UV light use our V20-UV

For self protected with geo textiles use V50-Gt

For canals, water features, retaining structures, water reservoir, artificial lakes, lagoons use V20-WF

APPLICATION ACCESSORIES

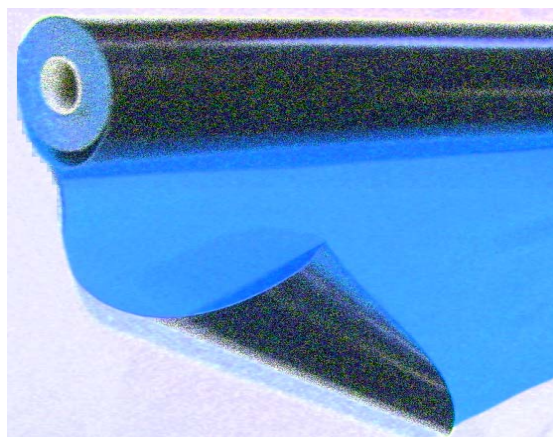
Geotextiles, Waterstops, Corners , Rondells, Injection hoses, Vertical injection pipe, Horizontal injection pipe

STORAGE

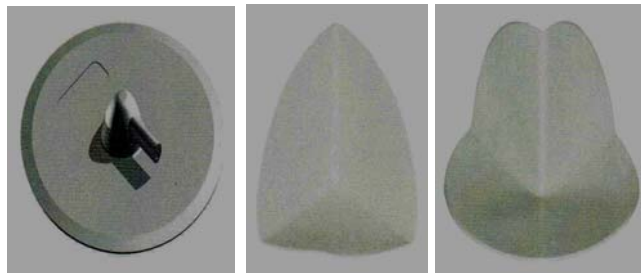
Store out of direct sunlight, clear of the ground and on pallets.



Properties		V 15	V 20	V 30	Standard
Chemical Base		Polyvinyl Chloride (PVC-P)			
Thickness,(mm)		1.5 (±5%)	2.0 (±5%)	3.0 (±5%)	EN 1849-2
Mass per unit area, (kg/m ²)		1.95	2.6	3.9	EN 1849-2
Tensile, (N/mm ²)	Longitudinal	17 (± 2)			ISO R 527-3, ASTM D 5147
	Transversal	17 (± 2)			
Tensile, (kN/M)		25			ASTM D 5147
Elongation, (%)	Longitudinal	300			ISO R 527-3, ASTM D 5147
	Transversal	280			
Tear Strength, 50 mm/min		42 kN/m (400 N)			ISO 34/ (ASTM D 5147)
Water Permeability		<10 ⁻⁷ m ³ x m ⁻² x d ⁻¹			EN 14150
Water Absorption, (%)		1			EN ISO 62
Static Puncture, (kN)		2 ±(0.25)			EN ISO 12236
Puncture Resistance, (N)		1300 N			ASTM E154
Burst Strength, (%)		≤ 50			EN 14151 D=1
Impact Resistance		500 g (no leakage at 500mm)			EN 1107-2
Low Temperature behavior (°C)		≤-20			EN 495-5
Hydrostatic pressure resistance		5 bar/72 hr (10 bar/24 hr) No leakage			EN 1928 (B)
Resistance to perforation by roots		No perforation			CEN TS 14416
Resistance to oxidation		≤ 25			EN 14575
Weathering ageing Variation in Tensile Strength & Elongation, (%)		≤ 25			EN 12224
Chemical Resistance, Change in Elongation, (%)		≤ 10			EN 14414
Resistance to thermal ageing: Variation in Tensile Strength and Elongation, (%)		≤ 20			EN 1296
Resistance to Fire		Class E			EN ISO 11925-2



ACCESSORIES

WATERSTOPS 		INJECTION HOSES 		RONDELLS 
VERTICAL & HORIZONTAL INJECTION PIPE 			CORNERS 	

IMPERVINYL ACCESSORIES

CONNECTION HOSE



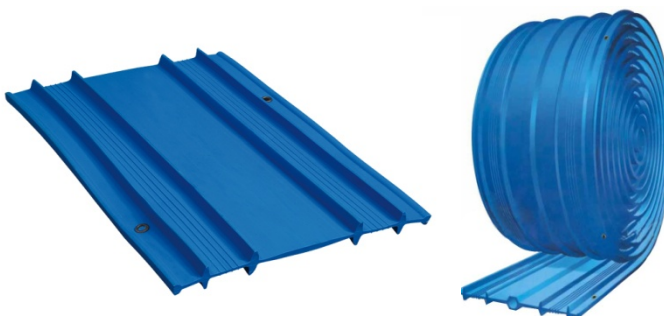
TPU calibrate hose 5,5 x 8

Resistance to pressure and polyurethane pipe temperature:

Ø 8 polyurethane pipe at 20°C, the max acceptable pressure is 8 bars.

Used temperature : - 20 °C; + 70

WATERSTOP FOR CONCRETE CASTING



Dimensions	From 150 to 440		
TEST	NORM	UNIT	VALUE
Hardness	ISO 868 ASTM D2240	Shore A	70 ± 3
Weight density	ISO 1183 ASTM D792	G/cc	1.31 ± 0.03
Tensile strength	ISO 527 ASTM D638	N/mm ²	14
Breaking strain	ISO 527 ASTM D638	%	450
Stiffening temperature	-	°C	- 30 ; +70
Color	Blue/Black		

FITTING CONNECTION



Working pressure : Max 20 bar

Empty seal : empty of 755 mmHg

Usable temperature: - 20°C; + 80°C

RONDEL FIXING DISCS FOR TUNNEL WATERPROOFING



Dimensions	d	h	
	80 mm	10 mm	
TEST	NORM	UNIT	VALUE
Hardness	ISO 868	Shore A	73 ± 3
Weight density	ISO 1183	G/cc	1.28 ± 0.03
Tensile strength	ISO 527	N/mm ²	14
Breaking strain	ISO 527	%	380
Stiffening temperature	ISO 458/2	°C	-35 ± 2
Color	Blue/Black		



IMPERVINYL ACCESSORIES

VERTICAL INJECTION PIPE



HORIZONTAL INJECTION PIPE



Dimensions	H= 200 mm ; Ø 170 mm	Dimensions	Ø 10
TEST	NORM	UNIT	VALUE
Hardness	ISO 868	Shore A	75 ± 3
Weight density	ISO 1183	G/cc	1.24 ± 0.03
Tensile strength	ISO 527	N/mm ²	15
Elongation at break	ISO 527	%	390
Cold flex	ISO 458/2	°C	25 ± 2
Color	White		

Characteristics: The injection pipe has flange to improve the adhesion to the prefabricated felts in PVC and a central shank which is divided in 3 parts. The injection pipe has to be cut where the inside diameter of the shank corresponds with the outside diameter of the element which has to pass through it.

IMI GEOTEXTILES is a 350 gsm nonwoven geo textile made from staple fibers mechanically bonded by a needle punching process to produce a dimensionally stable network. The fibers used are 100% polypropylene ultra-violet stabilized.



Properties	Test Method	Unit	Value
Tensile Strength (CMD)	EN ISO 10319	kN/m	25
Tensile Strength (MD)	EN ISO 10319	kN/m	24
Elongation at break (CMD/MD)	EN ISO 10319	%	65/60
CBR Puncture	EN ISO 12236	N	4300
Dynamic Puncture	EN ISO 13433	mm	10
Permeability VI ₅₀	EN ISO 11058	10 ⁻³ ms ⁻¹	70
Flow rate normal to the plane	EN ISO 11058	l/m ² /sec	70
Opening Size (O ₉₀)	EN ISO 12956	microns	80
Thickness under 2kPa	EN ISO 9863-1	mm	32
Mass Per Unit Area	EN ISO 9864	g/m ²	350
Roll Width	Nominal	meters	6
Roll Length	Nominal	meters	100

Note:

IMI GEOTEXTILES are non-biodegradable, have excellent resistance to chemicals and salts normally present in the soil. **IMI GEOTEXTILES** have excellent UV resistance and exhibit strength retention of 70% on test for weathering resistance to EN 12224. **IMI GEOTEXTILES** are delivered with an opaque wrap for protection against UV-rays during transit and storage. The recommended maximum time of exposure to direct sunlight is 15 days.

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