



1488-CPR-0139/Z

## INFORMATION TECHNICAL CARD

### GBR-P Geosynthetic Polymeric Barrier Geomembrane LLDPE textured

Dated: 01.01.2016

Version: I

This data sheet replaces all earlier versions.

Use		Harmonized technical specification
Fluid and/or gas barrier (gases: concerns standards: EN 13492:2013, EN13493:2013)	in the construction of tunnels and associated underground structures	EN 13491:2013
	in the construction of liquid waste disposal sites, transfer stations or secondary containment	EN 13492:2013
	in the construction of solid waste storage and disposal sites	EN 13493:2013
	in the construction of reservoirs and dams	EN 13361:2013
	in the construction of canals	EN 13362:2013
	in transportation infrastructure	EN 15382:2013

Normative part					
Properties		Testing method	Value		
			Geomembrane LLDPE 1000 T	Geomembrane LLDPE 1500 T	Geomembrane LLDPE 2000 T
1.	Mass per unit area, [g/m <sup>2</sup> ]	PN-EN 1849-2	935 ± 10%	1403 ± 10%	1870 ± 10%
2.	Water permeability, [m <sup>3</sup> /m <sup>2</sup> /day]	PN-EN 14150	≤ 10 <sup>-6</sup>		
3.	Gas permeability, [cm <sup>2</sup> /sek*atm]	ASTM D 1434 (Procedure V)	≤ 2,9 × 10 <sup>-8</sup>		
4.	Tensile strength, [N/mm <sup>2</sup> ] along and across	PN-EN ISO 527-1 PN-EN ISO 527-3	22 (-)		
5.	Elongation at break, [%] along and across	PN-EN ISO 527-1 PN-EN ISO 527-3	≥ 600		
6.	Static puncture resistance (CBR), [kN]	PN-EN ISO 12236	2,0 (-0,20)	3,2 (-0,32)	5,0 (-0,50)
7.	Durability and resistance for - oxidation - weathering conditions resistance - environmental stress crack resistance	PN-EN 14575 PN-EN 12224 ASTM D 5397 (app.)	Cover in one year		
			Fulfills the requirements		
8.	Hazardous substances	-	No hazardous substances		

#### REACH INFORMATION

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. In accordance with our knowledge and assurance of our suppliers, polymers and all additives used for production of article do not contain substances (SVHC) from the candidate list.



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Information part					
Properties		Testing method	Value		
			Geomembrane LLDPE 1000 T	Geomembrane LLDPE 1500 T	Geomembrane LLDPE 2000 T
1.	Mass per unit area, [g/m <sup>2</sup> ]	PN-EN 1849-2	935 ± 10%	1403 ± 10%	1870 ± 10%
2.	Width, [m]	PN-EN 1848-2	5,0 – 5,5 (± 0,2)		
3.	Tear resistance, [kN/m] along and across	PN-ISO 34-1	107 (-10%)	107 (-10%)	107 (-10%)
4.	Stress at yield, [MPa]	PN-EN ISO 527-1 PN-EN ISO 527-3	12		
5.	Thickness, [mm] Lowest individual of 10 values	ASTM D 5994	1,0 (-10%)	1,5 (-10%)	2,0 (-10%)
6.	Density, [g/cm <sup>3</sup> ]	ASTM D 1505	≥0,939		
7.	Yield strength, [kN/m] min.	ASTM D 6693 Type IV	11	20	32
8.	Break strength, [kN/m] min.		20	30	45
9.	Yield elongation, [%] min.		12		
10.	Break elongation, [%] min.		600		
11.	Tear resistance, [N] min.	ASTM D 1004	107	160	214
12.	Puncture resistance, [N] min.	ASTM D 4833	310	465	620
13.	Environmental stress crack resistance, min.	ASTM D 5397 (app.)	336		
14.	Carbon Black Content, [%]	ASTM D 1603	2,0-3,0		
15.	Carbon Black Dispersion	ASTM D 5596	Categories 1 - 2		
16.	Oxidative Induction Time (OIT), [min] min.	ASTM D 3895	≥100		

The results of the same characteristics determined by different standards may effect in different values. These differences result from other conditions of the test.