

# TECHNICAL DATASHEET

## 1.0MM LLDPE

### PRODUCT DESCRIPTION

1.0mm LLDPE is a geomembrane manufactured from maximum quality linear low density polyethylene LLDPE resins, duly contrasted, that comply with the most rigorous requirements established for their use.

1.0mm LLDPE contains 97.5% of pure polymer, and approximately 2.5% of Carbon Black, antioxidants and thermal stabilisers. The product does not contain plasticisers or fillers that can migrate over time.

1.0mm LLDPE is manufactured under permanent quality controls.



TESTED PROPERTY	UNIT	TEST METHOD	VALUES
<b>RAW MATERIAL IDENTIFICATION</b>			
DENSITY OF RAW MATERIAL	g/cm <sup>3</sup>	UNE EN ISO 1183-1	<0.932
DENSITY OF GEOMEMBRANE	g/cm <sup>3</sup>	UNE EN ISO 1183-1	≤0.940
MELT FLOW INDEX	g/10min	UNE EN ISO 1133-1 (190°C/ 2.16 KG)	≤1.2
		UNE EN ISO 1133-1 (190°C/ 5 KG)	≤3.5
CARBON BLACK CONTENT	%	ASTM D 4218	2.0-2.5
CARBON BLACK DISPERSION	-	ISO 18553	≤3
<b>DURABILITY</b>			
OXIDATION INDUCTION TIME (OIT) STANDARD OIT	min	ASTM D 3895 (200°C)	≥100
HIGH PRESSURE OIT		ASTM D 5885	≥400
OVEN AGING AT 85°C HP O.I.T.% RETAINED AFTER 90 DAYS	%	ASTM D 5721 ASTM D 5885	≥60
UV RESISTANCE. HP OIT RETAINED AFTER 1600 HRS	%	ASTM D 7238 ASTM D 5885	≥35
OXIDATION	%	UNE EN 14575	≥15
<b>FUNCTIONAL PROPERTIES</b>			
LOW TEMPERATURE BRITTLINESS (t <sub>2</sub> : -40°C)	-	UNE EN 495-5	NO CRACKS
WATER PERMEABILITY	m <sup>3</sup> /m <sup>2</sup> .day	UNE EN 14150	<1.10 <sup>-6</sup>
COEFFICIENT OF LINEAR THERMAL EXPANSION	1/°C	ASTM D 696	1,93.10 <sup>-4</sup>
WATER ABSORPTION	%	UNE EN ISO 62 (24h)	≤0.2
		UNE EN ISO 62 (6 DAYS)	≤1.0
<b>STRENGTH CHARACTERISTICS QUALITY OF FINAL PRODUCT</b>			
THICKNESS	mm	UNE-EN 1849-2	1.00
MEDIUM THICKNESS TOLERANCE	%		±5
PUNCTUAL MINIMUM THICKNESS TOLERANCE	%		±10
<b>MECHANICAL PROPERTIES (*)</b>			
TENSILE STRENGTH AT BREAK	N/mm	UNE-EN ISO 527, lo 25 mm	31 (26)
ELONGATION AT BREAK	%		800 (750)
TEAR RESISTANCE	N	ISO 34-1	≥98
PUNCTURE RESISTANCE	KN	UNE-EN ISO 12236	2.30
AXI-SYMMETRIC BREAK RESISTANCE STRAIN	%	EN 14151	>15
DIMENSIONAL STABILITY	%	UNE EN ISO 14632 (100°C, 1h)	±1,5

PARAMETER	UNITS	1.00	1.00
<b>PRESENTATION ( STANDARD SIZES)</b>			
ROLL WIDTH	m	2.0	2.0
ROLL LENGTH	m	25	50

### REGISTERED OFFICE ADDRESS

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1. TCS Geotechnics is a trading name of Technical Civils Solutions Ltd.
2. TCS Geotechnics Ltd reserves the right to alter product specifications without prior notice.
3. It is the responsibility of all users to satisfy themselves that the above data is current.
4. The above figures are average values obtained from testing to current EN ISO standards.
5. TCS Ltd cannot accept responsibility for the performance of these products as the conditions of use are beyond our control.
6. Installation details are available on request.
7. Values indicated are medium. In brackets minimum values with 95% confidence level.

