

# GM13 TECHNICAL SPECIFICATIONS

PROPERTIES		TEST METHODS						
		GEO 0.75 GM13	GEO 0.80 GM13	GEO 1.00 GM13	GEO 1.50 GM13	GEO 2.00 GM13	GEO 2.50 GM13	GEO 3.00 GM13
AVERAGE THICKNESS (mm)	UNE - EN 1849-2	0,75	0,80	1,00	1,50	2,00	2,50	3,0
MINIMUM THICKNESS OF 10 READS (mm)	UNE - EN 1849-2	0,675	0,72	0,90	1,35	1,80	2,25	2,70
DENSITY (g/cm <sup>3</sup> )	UNE - EN ISO 1183	≥ 0,940	≥ 0,940	≥ 0,940	≥ 0,940	≥ 0,940	≥ 0,940	≥ 0,940
FLUIDITY INDEX (190 °C, 5 kg)	UNE - EN ISO 1133	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0
TENSILE STRENGTH (N/mm)	UNE - EN ISO 527-3, test tube 5	≥ 20	≥ 22	≥ 27	≥ 40	≥ 53	≥ 67	≥ 80
YIELD STRENGTH (N/mm)	UNE - EN ISO 527-3, test tube 5	≥ 11	≥ 12	≥ 15	≥ 22	≥ 29	≥ 37	≥ 44
ELONGATION AT BREAK (%)	UNE-EN ISO 527-3, test tube 5	≥ 700	≥ 700	≥ 700	≥ 700	≥ 700	≥ 700	≥ 700
YIELD POINT ELONGATION (%)	UNE - EN ISO 527-3, test tube 5	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
TEAR RESISTANCE (N)	ISO 34-1/B (a)	≥ 93	≥ 100	≥ 125	≥ 187	≥ 249	≥ 311	≥ 374
PUNCTURE RESISTANCE (N)	EN - ISO 12236	≥ 240	≥ 256	≥ 320	≥ 480	≥ 640	≥ 800	≥ 960
BENDING AT LOW TEMPERATURES (-77 °C)	UNE - EN 495-5	No cracks	No cracks	No cracks	No cracks	No cracks	No cracks	No cracks
COEFFICIENT OF LINEAR EXPANSION (°C <sup>-1</sup> )	ASTM D 696	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>	2*10 <sup>-4</sup>
HEAT TRANSFER BEHAVIOR (100 °C)	UNE - EN 14632	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0
BREAK STRENGTH (h)	UNE - EN 14576	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500
CARBON BLACK CONTENT (%)	ISO 6964	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3
CARBON DISPERSION (CATEGORY)	ISO 18553	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2
STANDARD OXIDATIVE INDUCTION TIME (OIT) (min)	UNE - EN 728	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100
OVEN AGING AT 85°C (MINIMUM RETAINED % OF STANDARD OIT AFTER 90 DAYS)	Pr EN 14575 UNE - EN 728	≥ 55	≥ 55	≥ 55	≥ 55	≥ 55	≥ 55	≥ 55
OVER AGING AT 85°C (MINIMUM % VARIATION OF ELONGATION AT BREAK AFTER 90 DAYS)	Pr EN 14575 UNE - EN ISO 527-3, test tube 5	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15
UV RESISTANCE (MINIMUM OIT % RETAINED AT HIGH PRESSURE AFTER 1600 HOURS)	EN 12224 UNE - EN 728	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50	≥ 50
UV RESISTANCE (MINIMUM % CHANGE IN ELONGATION AT BREAK AFTER 1600 HOURS)	EN 12224 UNE - EN ISO 527-3, test tube 5	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15	≤ 15
WATER ABSORPTION AT 24 HOURS (%)	UNE - EN ISO 62	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2	≤ 0.2
WATER ABSORPTION AT 6 DAYS (%)	UNE - EN ISO 62	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0
RESISTANCE TO ROOT PERFORATIONS	Pr CEN/TS 14416	No perforations	No perforations	No perforations	No perforations	No perforations	No perforations	No perforations
GAS-TIGHTNESS (m <sup>3</sup> /m <sup>2</sup> /d/atm)	ASTM D 1434	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>	≤ 4*10 <sup>-4</sup>
HYDRAULIC PERMEABILITY (m <sup>3</sup> /m <sup>2</sup> /day)	UNE - EN 14150	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>	≤ 2*10 <sup>-6</sup>
ROLL LENGTH (m)	N/A	400	350	310	210	155	120	100
1/2 ROLL LENGTH (m)	N/A	200	175	155	105	77.5	60	50
1/4 ROLL LENGTH (m)	N/A	100	87.5	77.5	52.5	38.75	30	25
WIDTH (m)	N/A	7	7	7	7	7	7	7
AREA (m <sup>2</sup> ) PRESENTATION A	N/A	2800	2450	2170	1470	1085	840	700

→ THE WIDTH ( M ) COMES IN THE FOLLOWING PRESENTATIONS: 7M, 7.5M AND 8M.

→ THE AREA ( M<sup>2</sup> ) IS CALCULATED BY MULTIPLYING THE WIDTH OF THE ROLL BY THE LENGTH OF THE ROLL ( M )