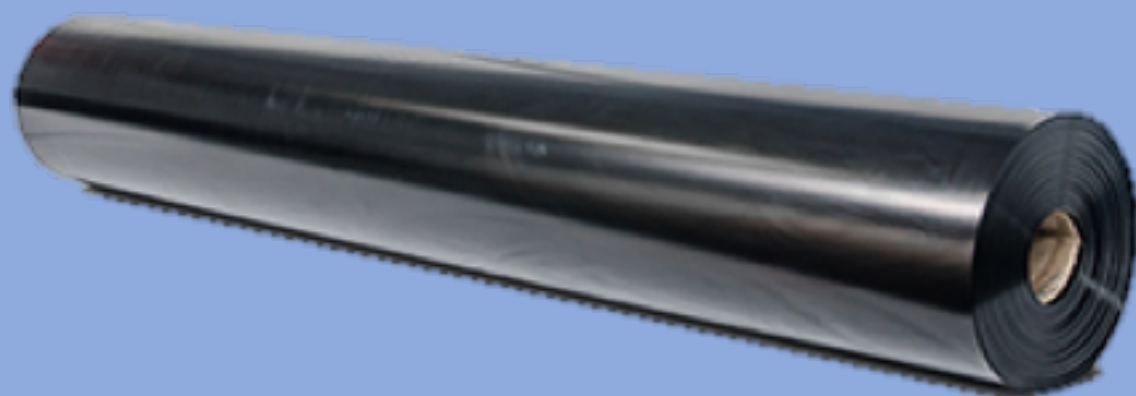


## DADOS TÉCNICOS

Material: SMOOTH LINER SPECIFICATION

GAMA: GEOMENBRANAS



Properties	Units	Test Method	Test Frequency (1)	Min Average Values				
Thickness. Minimum Avg.(4)	mm	ASTM D 5199	Per roll	1	1.5	2	2.5	3
Formulated Density	g/cc	ASTM D 792	90 000kg/ approx. every 60 rolls	≥0.94	≥0.94	≥0.94	≥0.94	≥0.94
Tensile Properties - Minimum Avg. (2)								
Yield Strength	kN/m	ASTM D 6693	9 000kg / approx. every 5 rolls	15	22	29	37	44
Yield Elongation	%	Type IV		12	12	12	12	12
Break Strength	kN/m	Dogbone		27	40	53	67	80
Break Elongation	%			700	700	700	700	700
Tear Resistance. Minimum Avg.	N	ASTM D 1004	20 000kg / approx. every 12 rolls	125	187	249	311	374
Puncture Resistance. Minimum Avg.	N	ASTM D 4833	20 000kg/ approx. every 12 rolls	320	480	640	800	960
Dimensional Stability	%	ASTM D 1204		±2	±2	±2	±2	±2
Rapid tensile test (300mm/min)	visual	ASTM D6693	90 000kg / approx. every 60 rolls	No Separation Visible				
Carbon Black Content	%	ASTM D 4218	9 000kg / approx. every 5 rolls	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3
Carbon Black Dispersion	Category	ASTM D 5596	20 000kg / approx. every 12 rolls	cat.1 or cat.2	cat.1 or cat.2	cat.1 or cat.2	cat.1 or cat.2	cat.1 or cat.2
Oxidative Induction Time (OIT) (min. avg.) (3)								
Standard OIT	minutes	ASTM D 3895	90 000kg / approx. every 60 rolls	100	100	100	100	100
— or — High Pressure OIT	minutes	ASTM D 5885		400	400	400	400	400
Stress Crack Resistance (SP - NCTL)	Hours	ASTM D 5397 Appendix	180 000kg / approx. every 110 rolls	500	500	500	500	500
Oven Aging at 85°C								
Standard OIT (min. avg.) retained after 90 days	%	ASTM D 5721 ASTM D 3895	Per Formulation	55	55	55	55	55
— or — High Pressure OIT (min. avg.) retained after 90 days	%	ASTM D 5885		80	80	80	80	80
UV Resistance - % retained after 1600 hrs. High Pressure OIT (min. avg.)	%	ASTM D 7238 ASTM D 5885	Per Formulation	50	50	50	50	50

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- 1) Based on Standard Roll dimensions. One batch is approx. 180 000kg or 2 railcars.
  - 2) Tensile results based on Avg values of MD and TD. 5 specimens in each direction.
  - 3) Manufacturer has the right to select either test method to evaluate OIT.
  - 4) Lowest Individual of 10 Values = 10%
- All Values are nominal, except when Specified as maximum or minimum.