

GEO HD - HDPE Smooth Geomembrane

Technical Data Sheet



HYMA PLASTIC
SINCE 1975

Hyma GEO HD is a smooth high quality sheet, manufactured from pure HDPE virgin polymer, made for Geomembrane applications. GEO HD contains 97-97.5% Polyethylene, 2-2.5% Carbon Black, and traces of antioxidants and heat stabilizers. This product is double-sided smooth. The product's specifications meet or exceed GRI GM13.

Test Property	Unit	Test Method	Value (*)			
Thickness (1)	mm	ASTM D-5199	0.5	0.75	1	1.25
Density	g/cm ³	ASTM D-792	≥0.94	≥0.94	≥0.94	≥0.94
Strength at Yield (Both directions)	N/mm	ASTMD-638/6693 Type IV 50mm/min l ₀ = 33mm For Yield l ₀ = 50mm For Break	7	11	15	18
Elongation at Yield (Both directions)	%		12	12	12	12
Strength at Break (Both directions)	N/mm		12	20	27	33
Elongation at Break (Both directions)	%		700	700	700	700
Tear Resistance	N	ASTM D-1004	65	93	125	156
Puncture Resistance	N	ASTM D-4833	160	240	320	400
Carbon Black Content	%	ASTM D-1603	2-3	2-3	2-3	2-3
Carbon Black Dispersion (2)	Category	ASTM D-5596	1 or 2	1 or 2	1 or 2	1 or 2
Oxidative Induction Time (OIT)	Min.	ASTM D-3895	≥ 100	≥ 100	≥ 100	≥ 100
High Pressure Oxidative induction Time (HPOIT)	Min.	ASTM D-5885	≥ 400	≥ 400	≥ 400	≥ 400
Oven Aging Standard OIT % retained after 90 Days	%	ASTM D-5721/ D3895 @ 85°C	≥ 55	≥ 55	≥ 55	≥ 55
Stress Crack Resistance (NCTL)	H	ASTM D-5397	≥ 500	≥ 500	≥ 500	≥ 500
UV Resistance HPOIT (3) Retained after 1600 Hours	%	ASTM D-7238 ASTM D-5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) (4)	m	----	5.8 – 6 – 7			
Roll Length (approx.) (4)	m	----	50 – 75 – 100 – 125 – 150			
Surface	----	----	Double-sided Smooth			

(*) All Values unless stated otherwise are nominal values.

(1) Tolerance ±10% of the nominal thickness.

(2) Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be category 1 or 2. No more than 1 view from category 3.

(3) Test-Conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C.

(4) Roll Width and Lengths have a tolerance of ±1%.



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Test Property	Unit	Test Method	Value (*)			
Thickness (1)	mm	ASTM D-5199	1.5	2.0	2.5	3.0
Density	g/cm ³	ASTM D-792	≥0.94	≥0.94	≥0.94	≥0.94
Strength at Yield (Both directions)	N/mm	ASTMD-638/6693 Type IV 50mm/min lo = 33mm For Yield lo = 50mm For Break	22	29	37	44
Elongation at Yield (Both directions)	%		12	12	12	12
Strength at Break (Both directions)	N/mm		40	53	67	80
Elongation at Break (Both directions)	%		700	700	700	700
Tear Resistance	N	ASTM D-1004	187	249	311	374
Puncture Resistance	N	ASTM D-4833	480	640	800	960
Carbon Black Content	%	ASTM D-1603	2-3	2-3	2-3	2-3
Carbon Black Dispersion (2)	Category	ASTM D-5596	1 or 2	1 or 2	1 or 2	1 or 2
Oxidative Induction Time (OIT)	Min.	ASTM D-3895	≥ 100	≥ 100	≥ 100	≥ 100
High Pressure Oxidative induction Time (HPOIT)	Min.	ASTM D-5885	≥ 400	≥ 400	≥ 400	≥ 400
Oven Aging Standard OIT % retained after 90 Days	%	ASTM D-5721/ D3895 @ 85°C	≥ 55	≥ 55	≥ 55	≥ 55
Stress Crack Resistance (NCTL)	H	ASTM D-5397	≥ 500	≥ 500	≥ 500	≥ 500
UV Resistance HPOIT (3) Retained after 1600 Hours	%	ASTM D-7238 ASTM D-5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) (4)	m	----	5.8 – 6 – 7			
Roll Length (approx.) (4)	m	----	50 – 75 – 100 – 125 – 150			
Surface	----	----	Double-sided Smooth			

(*) All Values unless stated otherwise are nominal values.

(1) Tolerance ±10% of the nominal thickness.

(2) Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be category 1 or 2. No more than 1 view from category 3.

(3) Test-Conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C.

(4) Roll Width and Lengths have a tolerance of ±1%.



GEO HD- HDPE Textured Geomembrane

Technical Data Sheet



HYMA PLASTIC
SINCE 1975

Hyma GEO HD Textured Geomembrane is a high quality sheet, manufactured from pure HDPE virgin polymer, made for Geomembrane applications. GEO HD Textured Geomembrane contains 97-97.5% Polyethylene, 2-2.5% Carbon Black, and traces of antioxidants and heat stabilizers. It is available as single textured or double textured liners.

The product's specifications meet or exceed GRI GM13.

Test Property	Unit	Test Method	Minimum Average Value (*)			
Thickness (1) (Lowest individual values)	mm	ASTM D-5994	1.0 -15%	1.5 -15%	2.0 -15%	2.5 -15%
Density	g/cm ³	ASTM D-792	≥0.94	≥0.94	≥0.94	≥0.94
Strength at Yield (Both directions)	N/mm	ASTMD-638/6693 Type IV 50mm/min lo = 33mm For Yield lo = 50mm For Break	15	22	29	37
Elongation at Yield (Both directions)	%		12	12	12	12
Strength at Break (Both directions)	N/mm		10	16	21	26
Elongation at Break (Both directions)	%		100	100	100	100
Tear Resistance	N	ASTM D-1004	125	187	249	311
Puncture Resistance	N	ASTM D-4833	267	400	534	667
Carbon Black Content	%	ASTM D-1603	2-3	2-3	2-3	2-3
Carbon Black Dispersion (2)	Category	ASTM D-5596	Note (1)			
Oxidative Induction Time (OIT)	Min.	ASTM D-3895	≥ 100	≥ 100	≥ 100	≥ 100
High Pressure Oxidative induction Time (HPOIT)	Min.	ASTM D-5885	≥ 400	≥ 400	≥ 400	≥ 400
Oven Aging Standard OIT % retained after 90 Days	%	ASTM D-5721/ D3895 @ 85°C	≥ 55	≥ 55	≥ 55	≥ 55
Stress Crack Resistance (NCTL)	H	ASTM D-5397	≥ 500	≥ 500	≥ 500	≥ 500
UV Resistance HPOIT (3) Retained after 1600 Hours	%	ASTM D-7238 ASTM D-5885	≥ 50	≥ 50	≥ 50	≥ 50
Roll Width (approx.) (4)	m	----	5.8 – 6 – 7			
Roll Length (approx.) (4)	m	----	50 – 75 – 100			
Surface	----	----	Single Double-sided Texture			

(*) All Values unless stated otherwise are nominal values.

(1) Tolerance ±10% of the lowest individual reading.

(2) Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be category 1 or 2. No more than 1 view from category 3.

(3) Test-Conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C.

(4) Roll Width and Lengths have a tolerance of ±1%.

