

ZHONGLONG

HDPE GEOMEMBRANE

Product Specifications / Technical Data Sheet

HDPE Geomembrane Smooth | GH-2S

HDPE geomembrane is made from high-quality polyethylene virgin resin. Its main component is **97.5%** high-density polyethylene, with approximately **2.5%** of additives including carbon black, anti-aging agents, antioxidants, UV absorbers, stabilizers and other auxiliary materials.

Zhonglong HDPE geomembrane smooth (GH-2S) are produced in compliance with the American **GRI standards** and **ASTM testing standards**, with a complete range of specifications available.

Zhonglong HDPE geomembrane smooth (GH-2S) is available in thicknesses ranging from **0.2mm to 3.0mm** and widths from **3m to 8m**, with customizable length.



Figure 1. GH2S Production Line

Production Process

With different production processes, the thickness range varies as follow

Film blowing process: 0.25mm–2.0mm

Calendering process: 1.0mm–3.0mm



Figure 2. GH2S Film Blowing Process

Thickness Tolerance | GH-2S

Item	Unit	Index						
		0.75	1.00	1.25	1.50	2.00	2.50	3.00
Nominal Thickness	mm	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Average Thickness	mm	≥0.75	≥1.00	≥1.25	≥1.50	≥2.00	≥2.50	≥3.00
Maximum Tolerance	%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%

Performance Parameter | GH-2S

No.	Item	Unit	Index						
	Nominal Thickness	mm	0.75	1.00	1.25	1.50	2.00	2.50	3.00
1	Density	g/cm ³	≥0.940						
2	Tensile Strength at Yield	N/mm	≥11	≥15	≥18	≥22	≥29	≥37	≥44
3	Tensile Strength at Break	N/mm	≥20	≥27	≥33	≥40	≥53	≥67	≥80
4	Elongation at Yield (MD / CD)	%	10~16						
5	Elongation at Break (MD / CD)	%	≥700						
6	Tear Resistance (MD / CD)	N	≥93	≥125	≥160	≥190	≥250	≥315	≥375
7	Puncture Resistance	N	≥240	≥320	≥400	≥480	≥640	≥800	≥960
8	Stress Crack Resistance (SCR)	h	≥500						
9 ^a	Carbon Black Content	%	2.0~2.8						
10 ^a	Carbon Black Dispersion	/	Uniformly dispersed, no carbon black agglomerates > 50 μm						
11 ^b	Standard Oxidative Induction Time (OIT)	min	≥100						
12 ^b	High Pressure Oxidative Induction	min	≥400						
13	Low-Temperature Impact Brittleness	/	Pass						
14	Water Vapor Permeability	g·cm/ (cm ² ·s·Pa)	≤1.0×10 ⁻¹³						
15	Dimensional Stability	%	±2.0						
16	Standard OIT Retention after Thermal Aging at 85 °C (90 days)	%	≥55						
17 ^b	Standard OIT Retention after UV Aging (1600 h)	%	≥50						

^a Items 9 and 10 apply only to HDPE geomembranes in black color.

^b For Items 11, 12 and 17, either Standard OIT or High OIT retention may be selected for testing.

HDPE Geomembrane Textured | GH-2T1/2

HDPE geomembrane is made from high-quality polyethylene virgin resin. Its main component is **97.5%** high-density polyethylene, with approximately **2.5%** of additives including carbon black, anti-aging agents, antioxidants, UV absorbers, stabilizers and other auxiliary materials.

Zhonglong GH-2T1 refers to the HDPE geomembrane with one textured side, while GH-2T2 refers to the HDPE geomembrane with two textured sides.

Zhonglong HDPE geomembrane textured (GH-2T1/2) is available in thicknesses ranging from **0.75mm** to **3.0mm**

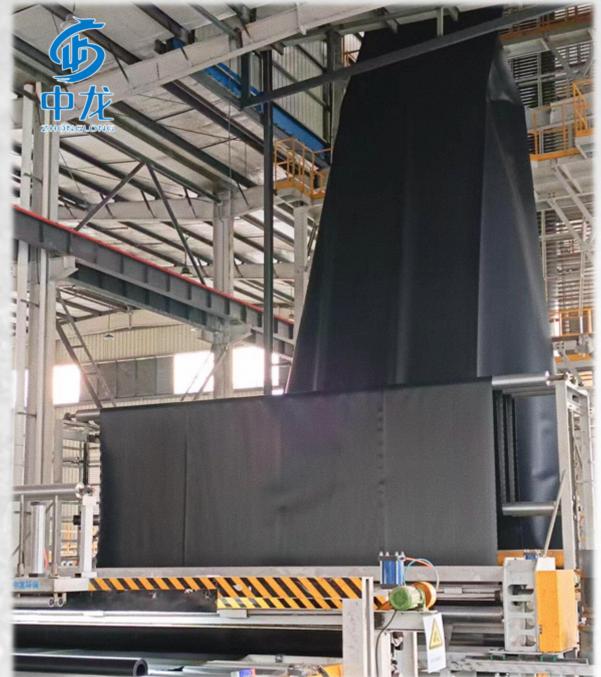


Figure 3. GH-2T1/2 Production Line

Production Process

Zhonglong HDPE geomembrane textured (GH-2T1/2) adopts the **secondary spray-texturing process**, where molten polymer filaments are applied to the smooth geomembrane, increasing surface roughness without affecting the original material properties and improving slip resistance.



Figure 4. GH-2T1/2 Secondary Spray-texturing Process

Thickness Tolerance | GH-2T1/2

Item	Unit	Index						
		0.75	1.00	1.25	1.50	2.00	2.50	3.00
Nominal Thickness	mm	0.75	1.00	1.25	1.50	2.00	2.50	3.00
Average Thickness	mm	≥0.75	≥1.00	≥1.25	≥1.50	≥2.00	≥2.50	≥3.00
Maximum Tolerance	%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%	≥-10%
Average texture height	mm	≥0.25						
Minimum texture height	mm	0.20						

Performance Parameter | GH-2T1/2

No.	Item	Unit	Index						
			0.75	1.00	1.25	1.50	2.00	2.50	3.00
1	Density	g/cm ³	≥0.940						
2	Tensile Strength at Yield	N/mm	≥11	≥15	≥18	≥22	≥29	≥37	≥44
3	Tensile Strength at Break	N/mm	≥12	≥15	≥20	≥24	≥32	≥39	≥48
4	Elongation at Yield (MD / CD)	%	10~16						
5	Elongation at Break (MD / CD)	%	≥200						
6	Tear Resistance (MD / CD)	N	≥93	≥125	≥160	≥190	≥250	≥315	≥375
7	Puncture Resistance	N	≥200	≥270	≥335	≥400	≥535	≥670	≥800
8	Stress Crack Resistance (SCR)	h	≥500						
9 ^a	Carbon Black Content	%	2.0~2.8						
10 ^a	Carbon Black Dispersion	/	Uniformly dispersed, no carbon black agglomerates > 50 μm						
11 ^b	Standard Oxidative Induction Time (OIT)	min	≥100						
12 ^b	High Pressure Oxidative Induction	min	≥400						
13	Low-Temperature Impact Brittleness	/	Pass						
14	Water Vapor Permeability	g·cm/(cm ² ·s·Pa)	≤1.0×10 ⁻¹³						
15	Dimensional Stability	%	±2.0						
16	Standard OIT Retention after Thermal Aging at	%	≥55						
17 ^b	Standard OIT Retention after UV Aging (1600 h)	%	≥50						

^a Items 9 and 10 apply only to HDPE geomembranes in black color.

^b For Items 11, 12 and 17, either Standard OIT or High OIT retention may be selected for testing.

NOTES:

- (1) MD = Machine Direction; CD = Cross Direction
- (2) Design complies with GRI-GM13 standards and all tests comply with ASTM standards
- (3) Other customized specifications adjusted and provided upon request
- (4) Zhonglong HDPE Geomembrane are manufactured in accordance with a Quality Management System which complies with the requirements of ISO 9001:2015 and Environment Management System with the requirements of ISO 14001:2015



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