



Low Density Polyethylene Geomembrane

LDPE is a polyethylene, which is a thermoplastic polymer made of monomer. LDPE is famous for its flexibility, toughness and chemical resistance. LDPE (low density polyethylene) geomembrane is made of low density polyethylene, which is a flexible and lightweight thermoplastic material. Compared with LLDPE geomembrane and HDPE geomembrane, LDPE geomembrane has different characteristics. LDPE geomembrane is applicable for pools, canals, embankments, farms, landfill, tunnel waterproof and seepage control.

LDPE geomembrane is mainly aggregated by polyethylene, ethylene, ethylene polymers and other materials. On the basis of absorbing the flexibility of the previous geomembranes, it has also increased its good extension, adapting to deformation and other capabilities, which greatly increased greatly, which greatly increased. Its waterproof and seepage capacity meets the application requirements of water conservancy, construction, municipalities, garden landscapes, mining, salt, agriculture, and aquaculture.



[Low Density Polyethylene Geomembranes]



[Low Density Polyethylene Geomembranes]

LDPE geomembrane adopts low density polyethylene film as basic impervious material, with geotechnical cloth as water conducting layer, through two stages extrusion, three rollers calendaring coiled material. Its density is 0.916-0.930 g/cm³. Low density, good transparency, soft nature, with good extension property, electricity insulation, chemical stability, processability and resistance to low temperature (resistant to -70°C). What's more, it remains good mechanical strength, more elasticity and flexibility than HDPE geomembrane, and easy construction.

LDPE Geomembrane Features:

- LDPE geomembrane has good impermeability;
- LDPE geomembrane has high barrier properties;
- LDPE geomembrane has strong puncture resistance;
- LDPE geomembrane is resistant to acid, alkali, and various chemical erosion;
- LDPE geomembrane has no stains, good adhesion;
- LDPE geomembrane construction is convenient;
- LDPE geomembrane can adapt to a wide range of environmental temperatures;
- LDPE geomembrane has high puncture resistance and high friction coefficient, and the waterproof and anti-seepage performance formed by combining it with geotextile is immeasurable.

Geomembrane Products: LOW DENSITY POLYETHYLENE GEOMEMBRANES

APPLICATION

LDPE geomembrane is suitable for environmental sanitation, water conservancy, municipal engineering, garden, landscape, petrochemical, mining, salt industry, agriculture, aquaculture waterproof and anti leakage. It is also applicable in living landfill yard, sewage treatment plant, power plant, adjusting tank, industrial and hospital solid waste, the building basement, underground warehouse, underground garage, docks and so on.

SPECIFICATIONS OF LDPE GEOMEMBRANE

LDPE GEOMEMBRANE GB/T 17643-2011 GL-2 TYPE

No	Item	Indicators							
	Thickness mm	0.50	0.75	1.00	1.25	1.50	2.00	2.50	3.00
1	Density g/cm ³	≤0.939							
2	Tensile fracture strength (longitudinal and transverse) N/mm	≥13	≥20	≥27	≥33	≥40	≥53	≥66	≥80
3	Elongation at break (longitudinal and transverse) %	≥800							
5	Right angle tear load (longitudinal and transverse) N	≥50	≥70	>100	≥120	≥150	≥200	≥250	≥300
6	Puncture resistance strength N	≥120	≥190	≥250	≥310	≥370	≥500	≥620	≥750
7	Carbon black content %	2.0~3.0							
8	Carbon black dispersibility	Out of 10 data points, there should be no more than 1 level 3, and levels 4 and 5 are not allowed							

LDPE GEOMEMBRANE GRI-GM13

ASTM GRI GM13 LDPE Geomembrane					
Properties	Test Method	GM075SH	GM100SH	GM150SH	GM200
Thickness	ASTM D5199	0.75 mm	1.00 mm	1.50 mm	2.00 mm
Density	ASTM D1505	0.940 g/cm ³	0.940 g/cm ³	0.940 g/cm ³	0.940 g/cm ³
Tensile Properties	ASTM D6693 Type IV	11 kN/m	15 kN/m	22 kN/m	29 kN
Yield strength		20 kN/m	27 kN/m	40 kN/m	53 kN
Break strength		12%	12%	12%	12%
Yield elongation		700%	700%	700%	700%
Break elongation					
Tear Resistance	ASTM D1004	93 N	125 N	187 N	249N
Puncture Resistance	ASTM D4833	240 N	320 N	480 N	640N
Stress Crack Resistance	ASTM D5397 (App.)	300 hr.	300 hr.	300 hr.	300 hr.
Carbon Black Content	ASTM D1603	2.0%	2.0%	2.0%	2.0%
Carbon Black Dispersion	ASTM D5596	For 10 different views.9 in Categories 1 or 2 and 1 in Category 3			
Oxidative Induction Time (OIT)	ASTM D3895	100 min.	100 min.	100 min.	100 min.

PROJECTS CASE OF LOW DENSITY POLYETHYLENE GEOMEMBRANE



[Aquaculture in Thailand]



[Lake bank in Palestine]

GEOMEMBRANE CONSTRUCTION

Construction method of geomembrane:

- It should be extended from the bottom to the high level. Do not pull too tightly. There should be 1.50% of the remaining sinking stretch. Considering the actual situation of this project, the slope adopts the order of laying from top to bottom;
- The two adjacent vertical joints should not be on a horizontal line, and it should be staggered by more than 1m;
- The vertical connector should be from the dam of the dam. At the bending foot of 1.50m, it should be located on the plane;
- First slope and backcourt;
- When the slope is laid, the direction of the exhibition membrane should basically parallel on the maximum slope line.

Climate requirements for geomembrane construction:

- The temperature should geomembrane be above five degrees Celsius. At low temperature, the geomembrane should be tense, and the geomembrane should be relaxed at high temperature.
- The wind is below level four.
- When the temperature is too low, the wind and rainy weather above level 4 should not be constructed.
- David weather and wind force affect the construction of the geomembrane, the HDPE geomembrane to be welded and the sandbags are applied.

APPLICATION SCENARIOS

- LDPE geomembrane can be used for slope protection.
- LDPE geomembrane is suitable for lake shores.
- LDPE geomembrane can be used for aquaculture.
- LDPE geomembrane can be used in landfill sites.
- LDPE geomembrane can be used for industrial solid waste treatment.



The main mechanism of geomembrane is to use the impermeability of plastic film to isolate the leakage channel of the earth dam, and to withstand water pressure and adapt to dam deformation with its large tensile strength and elongation.