



PVC (Polyvinyl Chloride) Geomembrane

PVC geomembrane is a high quality polymer waterproof sheet. By adding processing aids such as plasticizers, anti UV agents, anti aging agents, and stabilizers to PVC resin, polymer waterproof membranes are produced by extrusion method. PVC geomembrane can meet the anti-seepage, isolation, reinforcement, and crack resistance conditions of civil engineering projects such as water conservancy, municipal engineering, construction, transportation, subway, and tunnel.

PVC geomembrane, also known as PVC liner, is an essentially impermeable membrane used in conjunction with foundations, soil, rocks, or any other geotechnical materials. PVC geomembrane has good flexibility, excellent resistance to environmental stress cracking, low temperature resistance, and is suitable for landfill sites, sewage and sewage treatment sites, tailings storage sites, and underground construction projects.



[PVC (Polyvinyl Chloride)
Geomembranes]



[PVC (Polyvinyl Chloride) Geomembranes]

PVC geomembrane joints have advantages such as high tensile strength, high and low temperature resistance, and good thermal performance. Cold bonding or hot air welding methods can be used to form a solid and tightly sealed overall waterproof layer.

PVC Geomembrane Features:

- Convenient maintenance and low cost;
- Convenient construction and easy welding;
- Aging resistance and good wear resistance;
- Firm, reliable and no environmental pollution;
- Anti puncture ability is strong, can be used in planting roof;
- Bear chemical erosion, UV radiation resistance, suitable for special occasions;
- With high tensile strength, excellent elongation, heat treatment size change is small;
- Good low temperature flexibility, adapt to the environment temperature differences well;
- Good high and low temperature resistance performance, excellent hot melt performance.

Geomembrane Products: PVC (POLYVINYL CHLORIDE) GEOMEMBRANES

APPLICATION

PVC geomembrane with excellent easy welding and good hot melt performance is widely used in various building engineering.

- Reservoir, pool, dam and sewage treatment for anti-seepage.
- Tunnel, expressway, bridge, landfill and artificial lake.
- Ground engineering that needs certain corrosion resistance requirements.
- Sewage treatment system, basement or underground works waterproof and moisture proof.
- Water conservancy, municipal, construction, traffic, subway, tunnel engineering for anti seepage, isolation, reinforcement and anti crack.

SPECIFICATIONS OF PVC GEOMEMBRANE

Spec Properties	Test method ASTM	GMS0.5	GMS0.75	GMS1.0	GMS1.25	GMS1.5	GMS2.0	GMS2.5
Thickness	D5199	0.5mm	0.75mm	1.00mm	1.25mm	1.50mm	2.00mm	2.50mm
Density (\geq g/cm ³)	D1505	0.940	0.940	0.940	0.940	0.940	0.940	0.940
Tensile Properties (Each direction) (\geq) • yield strength • break strength • yield elongation • break elongation	D 6693 Type IV	8 kN/m 14kN/m 12% 700%	11 kN/m 20kN/m 12% 700%	15 kN/m 27 kN/m 12% 700%	18 kN/m 33 kN/m 12% 700%	22 kN/m 40 kN/m 12% 700%	29 kN/m 53 kN/m 12% 700%	37kN/m 67kN/m 12% 700%
Tear Resistance (\geq)	D 1004	64 N	93 N	125 N	156 N	187 N	249 N	311 N
Puncture Resistance (\geq)	D 4833	160 N	240 N	320 N	400 N	480 N	640 N	800 N
Stress Crack Resistance (\geq)	D 5397	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.	300 hr.
Carbon Black Content	D 1603	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%
Carbon Black Dispersion	D 5596	Note(1)	Note(1)	Note(1)	Note(1)	Note(1)	Note(1)	Note(1)
Oxidative Induction Time (OIT) (\geq) (a)Standard OIT - or - (b)High Pressure OIT	D 3895 D 5885	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.	100 min. 400 min.

TECHNICAL STANDARD FOR PVC (POLYVINYL CHLORIDE) GEOMEMBRANE

PVC Geomembrane Technical Parameters (GB Standard)							
Specification Attributes	GMS0.5	GMS0.75	GMS1.0	GMS1.25	GMS1.5	GMS2.0	GMS2.5
Thickness	0.5mm	0.75mm	1.0mm	1.25mm	1.5mm	2.0mm	2.5mm
Stretch (Various directions) (\geq) Yield Strength Breaking strength Symbol extension Broken Elimination rate	7KN/m 10KN/m 600%	10KN/m 15KN/m 600%	13KN/m 20KN/m 11% 600%	16KN/m 25KN/m 11% 600%	20KN/m 30KN/m 11% 600%	26KN/m 40KN/m 11% 600%	33KN/m 50KN/m 11% 600%
Density (\geq)	0.940g/cm ³	0.940g/cm ³	0.940g/cm ³	0.940g/cm ³	0.940g/cm ³	0.940g/cm ³	0.940g/cm ³
Puncture resistance (\geq)	120N	180N	240N	300N	360N	480N	600N
Carbon black content	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%	2.0-3.0%
Carbon black scattered body	Already noticed(1)	Already noticed(1)	Already noticed(1)	Already noticed(1)	Already noticed(1)	Already noticed(1)	Already noticed(1)
Tear strength (\geq)	56N	84N	115N	140N	170N	2255N	280N
Oxidation induction time (OIT) standard OIT (\geq)	60minute	60minute	60minute	60minute	60minute	60minute	60minute

PROJECTS CASE OF PVC (POLYVINYL CHLORIDE) GEOMEMBRANE



[Tunnel in Ecuador]



[Sewage Treatment System in Mexico]

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

- PVC geomembrane can be used for sewage treatment system waterproof.
- PVC geomembrane is applicable for river bank isolation.
- PVC geomembrane is suitable for aquaculture anti seepage.
- PVC geomembrane can be used for landfill reinforcement.
- PVC geomembrane can be applicable for underground works.
- PVC geomembrane is suitable for ground engineering.
- PVC geomembrane is used for dam protection.



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.