



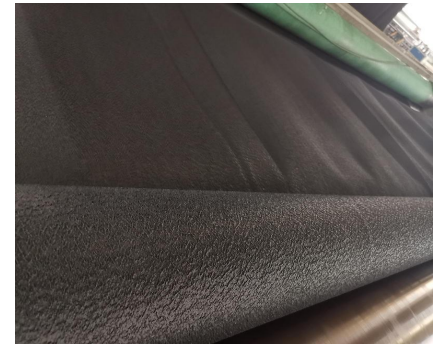
HDPE Double-Sided Textured Geomembrane

HDPE double-sided textured geomembrane is rough through complex production processes and increase their friction coefficient to achieve anti-slip performance.

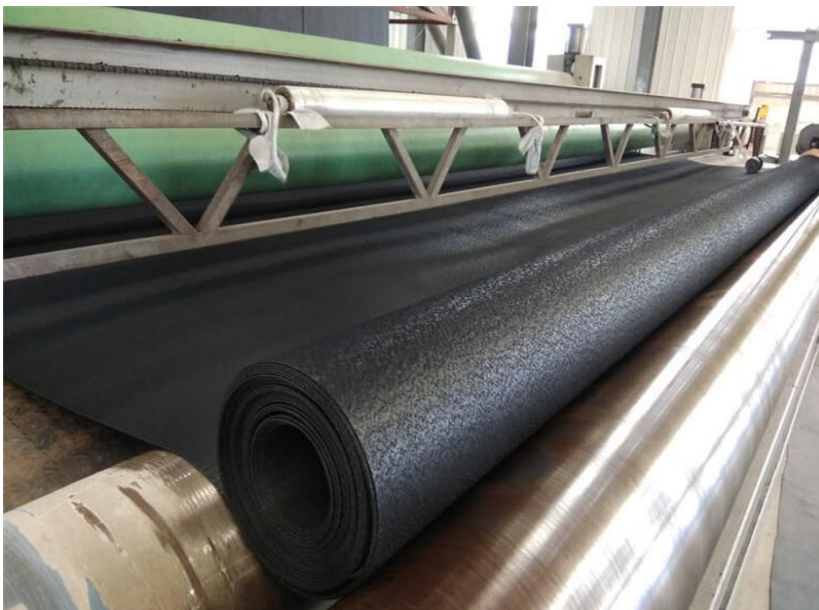
HDPE double-sided textured geomembrane can be contacted with geomorphin fabrics in the construction of slope anti-seepage project construction to play a non-slip effect. HDPE double-sided textured geomembrane is usually used in projects where the slope membrane surface needs to be covered with soil and requires larger friction coefficients. It is very suitable for the slope pavement and the second pavement of the geotextile around the garbage landfill.

HDPE double-sided textured geomembrane is made of about 97.5% of high quality polyethylene, 2.5% carbon black, trace antioxidants and thermal stabilizers.

HDPE double-sided textured geomembrane is often used in engineering projects such as land reinforcement, slope protection, soil and water conservation, and soil erosion prevention due to its anti slip and adhesion properties. In addition to the application scope of smooth surface geotextile, double-sided textured HDPE geomembrane is more suitable for various anti-seepage and anti-corrosion projects with certain inclination or anti slip and anti movement requirements, such as embankment slopes and slopes.



[HDPE Double-Sided Textured Geomembranes]



[High Density Polyethylene Double-Sided Textured Geomembranes]

The surface of the HDPE double-sided textured geomembrane is covered with a certain particle or texture. This treatment can increase the friction coefficient of the membrane, provide anti-slip effect, and increase the stability of the project.

HDPE Double-Sided Textured Geomembrane Features:

- HDPE double-sided textured geomembrane has excellent anti seepage and anti-fouling performance as well as mechanical properties, including resistance to stress cracking, tear strength, and puncture resistance;
- HDPE double-sided textured geomembrane has good dimensional stability, chemical stability, heat resistance, and aging resistance;
- HDPE double-sided textured geomembrane has Good tensile properties (yield strength, fracture strength, yield elongation, fracture elongation);
- HDPE double-sided textured geomembrane has excellent resistance to ultraviolet radiation, high friction coefficient, good skid resistance, wear resistance, good barrier properties, and good bonding performance.

Geomembrane Products: HIGH DENSITY POLYETHYLENE DOUBLE-SIDED TEXTURED GEOMEMBRANES

APPLICATION

HDPE double-sided textured geomembrane is mainly used for lining of landfills, river embankments, tailings dams, sewage dams, reservoirs, ditches, and other water ponds; Subway, basement, tunnel anti-seepage and lining; The anti-seepage lining of embankments and dams; Vertical anti-seepage layer of the foundation; Construction of cofferdams and fertilizer plants; Seepage prevention in seawater and freshwater aquaculture ponds; Waterproof layer for roads, highways, railway foundations, and expansive soil; Roof anti-seepage and waterproof membrane.

SPECIFICATIONS OF HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE

HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE GB T17643-2011

| Item | Indicators | | | | | | |
|--|--|------|------|------|------|------|------|
| | 0.75 | 1 | 1.25 | 1.5 | 2 | 2.5 | 3 |
| Thickness (mm) | 0.75 | 1 | 1.25 | 1.5 | 2 | 2.5 | 3 |
| Density (g/m ³) | ≥0.940 | | | | | | |
| Roughness height (mm) | ≥0.25 | | | | | | |
| Tensile yield strength (longitudinal and transverse) N/mm | ≥11 | ≥15 | ≥18 | ≥22 | ≥29 | ≥37 | ≥44 |
| Tensile fracture strength (longitudinal and transverse) N/mm | ≥8 | ≥10 | ≥13 | ≥16 | ≥21 | ≥26 | ≥32 |
| Yield elongation (longitudinal and transverse) % | ≥12 | | | | | | |
| Elongation at break (longitudinal and transverse)% | ≥100 | | | | | | |
| Right angle tear load (longitudinal and transverse) N | ≥93 | ≥125 | ≥160 | ≥190 | ≥250 | ≥315 | ≥375 |
| Puncture resistance strength N | ≥200 | ≥270 | ≥335 | ≥400 | ≥535 | ≥670 | ≥800 |
| Tensile load stress cracking (notch constant load tensile method) h | ≥300 | | | | | | |
| Carbon black content % | 2.0~3.0 | | | | | | |
| 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. | | | | | | |
| oxidation induction time (OIT)(min) | Induction time of atmospheric pressure oxidation≥100 | | | | | | |
| | Induction time of high-pressure oxidation≥400 | | | | | | |
| 85°C thermal aging (atmospheric pressure OIT retention rate after 90 days) | ≥55 | | | | | | |
| UV resistance (OIT retention rate after 1600 hours of UV irradiation) % | ≥50 | | | | | | |

Note: The technical performance indicators for thickness specifications not listed in the table are required to be executed using interpolation method.

HDPE double-sided textured geomembrane is a type of geomembrane with both sides rough. Double-sided textured geomembrane has a wide range of applications, and can come into contact with geotextiles on both upper and lower sides during slope anti-seepage construction, thus achieving anti slip effects.

HDPE rough surface geomembrane is a new type of anti-seepage material. HDPE geomembranes with single-sided textured and double-sided textured have functions such as increasing friction coefficient and anti slip, which can be applied to steep slope vertical anti-seepage and improve engineering stability. The rough surface improves the friction performance of the geomembrane surface. At the same time, compared with the smooth facial mask of the same specification, the rough facial mask has a rough surface. When laying the film, it will form a micro void layer between the film and the base surface, which can enhance the anti bearing deformation capacity of the film. It is generally used in projects requiring large friction coefficient for slopes.



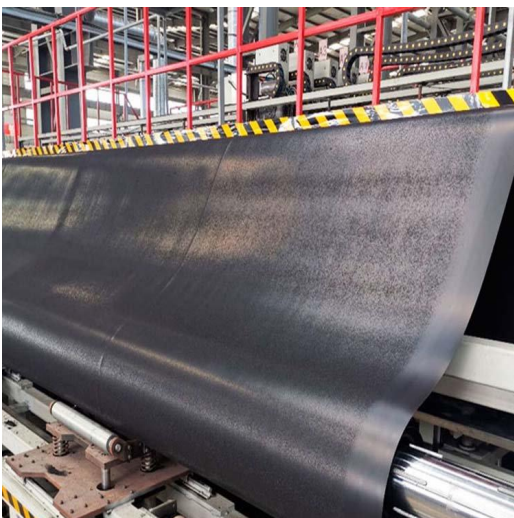
SPECIFICATIONS OF HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE

HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE GRI-GM13

| Properties | Test Method (ASTM) | Test Value | | | | | |
|---|----------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | | 1.00 mm | 1.25 mm | 1.50 mm | 2.00 mm | 2.50mm | 3.0mm |
| Asperity Height | D7466 | 0.25mm | 0.25mm | 0.25mm | 0.25mm | 0.25mm | 0.25mm |
| Density | D 792 | 0.940 g/cm ³ | 0.940 g/cm ³ | 0.940 g/cm ³ | 0.940 g/cm ³ | 0.940 g/cm ³ | 0.940 g/cm ³ |
| Tensile properties Streneth at Yield N/mm Strength at Break N/mm GElongation at Yield % Elongation at Break % | D6693 Type IV | 15 10 12 700 | 18 13 12 700 | 22 16 12 700 | 29 21 12 700 | 37 26 12 700 | 44 32 12 700 |
| Tear Resistance | D 1004 | 125 N | 156 N | 187N | 249 N | 311 N | 374 N |
| Puncture Resistance | D 4833 | 267N | 333N | 400N | 534 N | 667 N | 800N |
| Stress Crack Resistance | D 5397 | 500hr. | 500 hr. | 500 hr. | 500 hr. | 500hr. | 500 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% |
| Oxidative Induction Time (OIT) Standard OIT High Pressure OIT | D 3895 D 5885 | 100 min. 400min. | 100 min. 400 min. | 100 min. 400 min. | 100 min. 400 min. | 100 min. 400 min. | 100 min. 400 min. |
| Oven Aging at 85 °C Standard OIT retained after 90 days High Pressure OIT retained after 90 days | D 5721 D 3895 D 3895 | 55% 80% | 55% 80% | 55% 80% | 55% 80% | 55% 80% | 55% 80% |
| UV Resistance Standard OIT High Pressure OIT | D 3895 D 5885 | 50% 50% | 50% 50% | 50% 50% | 50% 50% | 50% 50% | 50% 50% |

SERVICE LIFE OF DIFFERENT ENGINEERING GEOMEMBRANES

- Non standard: It may crack in 2-4 months when exposed to light, and can be used for about 5 years when exposed to sunlight. Low price with general waterproof function, can be used for ordinary anti-seepage engineering.
- Old national standard and new national standard common type: service life: 40-50 years in the absence of the sun; slightly higher price; good tensile strength, low temperature resistance and aging resistance; generally used for seepage control projects in cold regions and with slightly poor construction environment.



- New national standard environmental protection and urban construction standard: the service life is 50-70 years, the product quality is good enough to meet the urban construction standards and American standards, the price is high, and it has good acid and alkali resistance, corrosion resistance, aging resistance, low temperature resistance, and ultraviolet resistance. The service life is long, and it is generally used in projects with high requirements for seepage prevention, such as landfill seepage prevention, tailings treatment site seepage prevention, slag site seepage prevention, solid waste landfill seepage prevention, etc.

PROJECTS CASE OF HDPE DOUBLE-SIDED TEXTURED GEOMEMBRANE



[Artificial Lake Application]



[Agricultural Reservoirs in Indonesia]

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

- Environmental protection: such as garbage landfills, sewage treatment plants, power plant regulating pools, industrial and hospital solid waste.
- Water conservancy: such as anti-seepage, blocking, reinforcement, channel anti-seepage, vertical heart wall, slope protection, etc.
- Garden: artificial lake, river, reservoir, golf pool, Slope protection, green lawn, waterproof and moisture-proof.
- Agriculture: Introduction control of reservoirs, application pools, reservoirs, irrigation systems, etc.

