Composite High Efficiency Suction And Drainage Geomembrane

Composite high efficiency suction and drainage geomembrane is a commonly used soft foundation treatment material, which has the rigidity of polypropylene and the flexibility and weather resistance of polyethylene. The filter membrane uses long fiber hot rolled nonwoven fabric, which has water immersion resistance and excellent water permeability performance.

The composite high efficiency suction and drainage geomembrane is suitable for highway and railway roadbed engineering. It is laid in multiple layers during roadbed construction. By utilizing the rapid suction and drainage function of this product, directional water diversion and drainage can be achieved, and the moisture in the roadbed can be discharged to protect it from rainwater erosion, greatly improving construction efficiency and effectively extending the service life of the roadbed.

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Composite high efficiency suction and drainage geomembrane is composed of high strength coarse denier non-woven fabric, multi channel high efficiency suction and drainage belt, and high strength geomembrane, which are compounded together through special composite equipment to form a composite drainage material with efficient and fast suction and drainage functions.

Composite High Efficiency Suction And Drainage Geomembrane Features:

- The composite high efficiency suction and drainage geomembrane has the advantages of low cost;
- The composite high efficiency suction and drainage geomembrane has high efficiency;
- The composite high efficiency suction and drainage geomembrne is durable and long-lasting;
- The composite high efficiency suction and drainage geomembrne resistant to chemical corrosion;
- The composite high efficiency suction and drainage geomembrne can resist plant root penetration;
- The composite high efficiency suction and drainage geomembrne has diverse applications;
- The composite high efficiency suction and drainage geomembrne installation is simple;
- The composite high efficiency suction and drainage geomembrne installation is simple and guaranteed quality.

Composite Products: COMPOSITE HIGH EFFICIENCY SUCTION AND DRAINAGE GEOMEMBRANE

APPLICATION

Composite high efficiency suction drainage geomemes are widely used in waterproofing and drainage construction projects such as roads, railway tunnels and underground, building basements and roof gardens.

SPECIFICATIONS OF COMPOSITE HIGH EFFICIENCY SUCTION AND DRAINAGE GEOMEMBRANE

TECHNICAL STANDARD FOR COMPOSITE HIGH EFFICIENCY SUCTION AND DRAINAGE GEOMEMBRANE Q/CR 549.6-2017

Project	Numerical value
Specifications	16kN-2mm
Width(m)	≥6
Length(m)	≥50
Longitudinal and transverse tensile strength(kN/m)	≥16
Eelongation at break(%)	30-50
CBR Bursting Strength(N)	≥3000
Longitudinal and transverse tear strength(N)	≥600
Spacing between suction and drainage strips(mm)	50≤C<100
Height of suction and drainage strips(mm)	≥2
Peel Strength(N/cm)	≥6
Suction and drainage efficiency(L/H)	≥16

Explanation:
1. The testing method for suction and drainage efficiency refers to Q/CR 549.6-2017 Geosynthetic Materials for Railway Engineering Part 6: Drainage Materials
2. The suction and drainage efficiency of this product is about 1.5 times that of ordinary drainage composite film products.
3. The use of polypropylene filament geotextile drainage composite film with the same weight is about three times that of short fiber polyester geotextile drainage composite film.

TECHNICAL STANDARD FOR COMPOSITE HIGH EFFICIENCY SUCTION AND DRAINAGE GEOMEMBRANE ASTM STANDARD

Item	Unit	BDS10	BDS12	BDS122
Core Properties				
Core structure		Single Cuspated Flat Back	Single Cuspated Flat Back	Single Cuspated Flat Back
Cuspation Height	mm	10	12	12
Core Material		Virgin HDPE	Virgin HDPE	Virgin HDPE
Material Thickness	mm	1	1	1.2
Geotextile Properties				
Structure		Needle Punched, Heat Pressed	Needle Punched, Heat Pressed	Needle Punched, Heat Pressed / -
Type		PET Filament	PET Filament	PET Filament
Weight	gsm	200	150	250
Color	gsm	White	Grey	Black
Sheet Drain Properties				
Discharge Capacity	L/m/min	145	155	185
Compressive strength	kPa	280	260	310
Roll Width	m	0.9	1.2	1.4
Roll Length	m	25	25	25

PROJECTS CASE OF COMPOSITE HIGH EFFICIENCY SUCTION AND DRAINAGE GEOMEMBRANE

[Highway subgrade in Colombia]

[Railway bed in Iran]

COMPOSITE GEOMEMBRANE CONSTRUCTION

The laying of composite geomembrane is divided into two parts: laying at the bottom of the channel and laying on the slope surface. Laying method: Horizontal rolling along the channel axis direction. After the acceptance of the slope surface, the slope surface is laid by rolling along the axis direction of the slope surface, and the composite geotextile membrane at the bottom of the channel is connected in a T-shape. The laying should be carried out in dry weather. In order to facilitate splicing and prevent stress concentration, a wavy relaxation method should be used for laying, with an excess of about 1.5%. After spreading, it should be leveled in a timely manner, and the membrane should match the slope surface smoothly without any protrusions or wrinkles. Construction personnel should wear flat bottomed cloth shoes or soft rubber shoes, and nail shoes are strictly prohibited to avoid stepping on them. If damage is found to the geotextile membrane during construction, it should be repaired in a timely manner.

The application function of composite drainage boards can be bent and constructed at will, quickly draining the static water of the waterproof layer and HDPE geomembrane water accumulation, timely reducing the load on the main structure, protecting the waterproof layer and structure, and avoiding damage to the waterproof layer by soil backfilling, plant root thorns, acid and alkali, underground insects, and microorganisms. Combined with the use of waterproof layer, it plays a dual waterproof and anti-seepage role, isolating gas and preventing oxidation, greatly improving the service life of the waterproof system. Flexible materials with high compressive and tensile strength, meeting the required elongation for cracking and road facilities.

APPLICATION SCENARIOS

- High efficient composite suction and drainage geomembrane used in railways;
- High efficient composite suction and drainage geomembrane used in highways;
- High efficient composite suction and drainage geomembrane used in tuuels;
- High efficient composite suction and drainage geomembrane used in reservoirs;
- High efficient composite suction and drainage geomembrane for saline alkali tank;
- High efficient composite suction and drainage geomembrane for artificial lakes.

It has a special three-layer structure. The middle reinforcement has high rigidity and is arranged longitudinally to form a drainage channel. The cross arranged reinforcement forms a support to prevent the geotextile from being embedded in the drainage channel, and can maintain high drainage performance even under high loads. The composite use of double-sided adhesive permeable geotextile has the comprehensive performance of "filtration drainage breathability protection" and is currently the most ideal drainage material.

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Composite high efficiency suction and drainage geotextile membrane is a composite geotextile drainage material composed of continuous plastic core panels with different cross-sectional shapes wrapped with nonwoven geotextile (filter membrane). The raw materials for the core board are high-density polyethylene and polypropylene. The core strip serves as a framework and, together with the filter cloth, forms a longitudinal groove for water supply. The middle is an extruded plastic core board, which is the framework and channel of the drainage belt. Its cross-section is in parallel cross shape, and both sides are wrapped with non-woven geotextiles as filter layers. The core belt plays a supporting role and discharges the water that seeps into the filter layer upwards. It is a good vertical channel for saturated viscosity such as silt, silt soil, and fill materials to use drainage consolidation method for soft foundation treatment, greatly reducing the consolidation time of soft soil.

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The plastic drainage belt is inserted into the soft soil foundation using a plug-in machine. Under the action of the upper preloading load, the void water in the soft soil foundation is discharged from the plastic drainage belt into the sand layer or horizontal plastic drainage pipe laid on the upper part, and discharged from other places to accelerate the consolidation of the soft soil foundation. In the treatment of soft soil foundation, the design of drainage belts and construction equipment are basically the same as those of sand bag wells.