GEOQUEST

Drainage for Landfills

Drainage behind MSE Structures

TerraFlow™

BI-PLANAR AND TRI-PLANAR
GEONET DRAINAGE COMPOSITES

TerraFlow™

TerraFlow™ Geocomposite consists of bi-planar or tri-planar High-Density Polyethylene (HDPE) geonet having non-woven polypropylene (PP) geotextile heat bonded on both sides.

Bi-planar geonet is designed with two HDPE strands crossing each other at a constant angle to form a diamond structure with uniform channels and thickness, to provide better planar waterflow under high loading.

Tri-planar geonet consists of three HDPE strands. One in the middle that provides channelised flow, while the two diagonal strands minimize the geotextile intrusion and improves the lateral drainage and transmissivity.

Applications

- **Drainage behind Retaining Walls, MSE and Buried Structures**: Used as substitute of aggregate drainage filter media behind retaining structures, MSE wall and as vertical/horizontal drains in soil embankments, basements, reservoirs, behind waterproof and damp-proof courses / treatments.
- **Slope and Embankment Construction**: Alternative to aggregate chimney drains for sub-surface drainage.
- **Tunneling**: Ground water seepage interception between rock face and the tunnel lining. Also used to catch and drain water in cut and cover tunnels.
- **Landfill**: A drainage option for landfill cell and capping.
- **Mining**: An alternative to aggregate drains, acts as cushion and protects the liner from damage in "Heap Leaching" technology.
- **Ponds**: Used for protection of geomembrane and for effective drainage of mitigating gas and liquid for various ponds like leachate ponds, brine ponds, wastewater ponds and alike.

Technical Parameters

Properties		Test Method	Unit	TerraFlow 065	TerraFlow 100	TerraFlow 250	TerraFlow T140
				Minimum Average Roll Value (MARV)[i]			
Composite (Non-woven Geotextile + Geonet)							
Physical Properties							
Mass per Unit Area		ASTM D 5261	g/m^2	740	760	1200	950
Thickness at 2kPa		ASTM D 5199	mm	5.0	5.5	8.0	6.5
Mechanical Properties							
Wide Width Tensile Strength MD[v]		ASTM D 4595	kN/m	16	20	20	20
Elongation		ASTM D 4595	%	30	30	30	30
CBR Puncture Resistance		ASTM D 6241	N	3000	3300	3500	3300
Hydraulic Properties							
In Plane Water Flow Rate (Permeability)	Hydraulic Gradient, i=1 at 20kPa pressure	ASTM D 4716	l/m.s	0.60	0.70	2.00	1.70
	Hydraulic Gradient, i=1 at 100kPa pressure			0.50	0.60	1.50	1.40
	Hydraulic Gradient, i=1 at 200kPa pressure			0.40	0.50	1.00	1.00
Filter GeoTextile							
Physical Properties							
Type of Product				Non Woven			
Mass per Unit Area		ASTM D 5261	g/m^2	140			
Thickness at 2kPa[ii]		ASTM D 5199	mm	0.8			
Material				100% Polypropylene (PP)			
Mechanical Properties							
Wide Width Tensile Strength		ASTM D 4595	kN/m	8.0			
CBR Puncture Resistance		ASTM D 6241	N	1500			
Hydraulic Properties							
Permittivity		ASTM D4491	s^{-1}	0.5			
Maximum Apparent Opening Size (AOS)[i]		ASTM D 4751	mm	0.22			
UV Resistance at 500 hrs		ASTM D 4355	%	≥70			
GeoNet							
Physical Properties - Geonet							
Material				Polyehtylene (HDPE)			
Type				bi-planar	bi-planar	bi-planar	tri-planar
Thickness[ii]		ASTM D 5199	mm	4.6	5.0	7.5	6
Standard Packaging							
Roll Width[iii]		-	m	2	2	2	2
Roll Length[iii]			m	100	100	50	50
Estimated Roll Weight[iv]			kg	160	170	130	95

[i] All the values mentioned are of minimum average roll values (MARV) except for apparent opening size (AOS) which is maximum average roll value (MaxARV)
[ii] The thickness mentioned of geonet is before thermal bonding operation of geonet and geotextile.
[iii] These values are subject to ±1% variation
[iv] Other roll sizes also available
[v] MD- Machine Direction

NOTES
A. These properties may change at the time of handling, storage and shipping.
B. Testing of TerraTextile™ (Non-woven geotextile) being used in TerraFlow™ (geocomposite) to be performed on separate fabric, not one dettached from the geocomposite.
C. The values can be customized
D. The above values are subject to change as per discretion of the company
E. TerraFlow™ with one side geotextile can also be made available on request

www.geoquest-group.com

Local Contact: .....
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