The Pioneer Of Geosynthetics

S I N C E 1 9 7 2

Product Data Sheet

GSE PermaNet HL Geocomposite

GSE PermaNet HL (High Load) geocomposite is manufactured with a PermaNet HL geonet heat-bonded on one or both sides with a GSE nonwoven needlepunched geotextile. The geotextile is available in mass per unit area range of 6 oz/yd^2 (200 g/m^2) to 16 oz/yd^2 (540 g/m^2). The creep resistant structure of the product ensures continuous flow performance over a broad range of conditions and long durations. The geocomposite works as an efficient drainage medium and is ideal for extremely high compressive stress applications.

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE		
Geocomposite			**6 oz/yd^2**	**8 oz/yd^2**	**10 oz/yd^2**
Transmissivity[1], gal/min/ft (m^2/sec) Double-Sided Composite Single-Sided Composite	ASTM D 4716	1/540,000 ft^2	 4.8 (1 x 10^{-3}) 6.2 (1.3 x 10^{-3})	 4.8 (1 x 10^{-3}) 6.2 (1.3 x 10^{-3})	 4.8 (1 x 10^{-3}) 6.2 (1.3 x 10^{-3})
Ply Adhesion, lb/in (g/cm)	ASTM D 7005	1/50,000 ft^2	1.0 (178)	1.0 (178)	1.0 (178)
Geonet Core - GSE PermaNet HL					
Transmissivity[2], gal/min/ft (m^2/sec)	ASTM D 4716		19 (4x10^{-3})	19 (4x10^{-3})	19 (4x10^{-3})
Compression Strength, lbs/ft^2 (kPa)	ASTM D 1621	1/540,000 ft^2	40,000 (1,913)	40,000 (1,913)	40,000 (1,913)
Creep Reduction Factor	GRI-GC8	once per formulation	1.2 @15,000 psf	1.2 @15,000 psf	1.2 @15,000 psf
Density, g/cm^3	ASTM D 1505	1/50,000 ft^2	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035/7179	1/50,000 ft^2	100 (17)	100 (17)	100 (17)
Carbon Black Content, %	ASTM D 1603*/4218	1/50,000 ft^2	2.0	2.0	2.0
Geotextile (prior to lamination)[3]					
Mass per Unit Area, oz/yd^2(g/m^2)	ASTM D 5261	1/90,000 ft^2	6 (200)	8 (270)	10 (335)
Grab Tensile, lb (N)	ASTM D 4632	1/90,000 ft^2	160 (710)	220 (975)	260 (1,155)
Puncture Strength, lb (N)	ASTM D 4833	1/90,000 ft^2	90 (395)	120 (525)	165 (725)
AOS, US sieve (mm)	ASTM D 4751	1/540,000 ft^2	70 (0.21)	80 (0.180)	100 (0.150)
Permittivity, (sec^{-2})	ASTM D 4491	1/540,000 ft^2	1.5	1.3	1.0
Flow Rate, gpm/ft^2 (lpm/m^2)	ASTM D 4491	1/540,000 ft^2	110 (4,480)	95 (3,865)	75 (3,050)
UV Resistance, % retained	ASTM D 4355 (after 500 hours)	once per formulation	70	70	70
NOMINAL ROLL DIMENSIONS					
Geonet Core Thickness, mil (mm)	ASTM D 5199	1/50,000 ft^2	270 (6.9)	270 (6.9)	270 (6.9)
Roll Width[4], ft (m)			15 (4.5)	15 (4.5)	15 (4.5)
Roll Length[4], ft (m)	Double-Sided Composite		160 (48.8)	150 (45.7)	140 (42.7)
	Single-Sided Composite		170 (51.8)	170 (51.8)	160 (48.8)
Roll Area, ft^2 (m^2)	Double-Sided Composite		2,400 (223)	2,250 (209)	2,100 (195)
	Single-Sided Composite		2,550 (237)	2,550 (237)	2,400 (223)

NOTES:

- [1]This is an index transmissivity value measured at stress = 15,000 psf; gradient = 0.1; time = 15 minutes; boundary conditions = plate/geocomposite/plate. Contact GSE for performance transmissivity value for use in design.
- [2]This is an index transmissivity value measured at stress = 15,000 psf; gradient = 0.1; time = 15 minutes; boundary conditions = plate/geonet/plate. Contact GSE for performance Transmissivity value in design.
- [3]All geotextile properties are minimum average values except AOS (in mm) which is a maximum value (Max ARV); and UV resistance which is a typical value.
- [4]Roll widths and lengths have a tolerance of ±1%.
- *Modified.

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