LAYFIELD GEOSYNTHETICS

TECHNICAL SPECIFICATIONS

HYDRANET® BIPLANAR GEOCOMPOSITE

Layfield manufactures HydraNet® in our ISO 9001 certified facility, offering a wide range of geonet and geocomposites for drainage.

HydraNet® geocomposites have a geotextile bonded to one or both sides of a geonet. The addition of laminated geotextile layers prevents the movement of soil fines into the drainage path that could otherwise lead to clogging and reduced drainage performance longer term.

August 2025

HydraNet® Biplanar GeoNet

Style (MAV[3])	Test Method	HydraNet® 220	HydraNet® 250	HydraNet® 270	HydraNet® 300
Thickness	ASTM D5199	5.08 mm (200 mil)	5.84 mm (230 mil)	6.35 mm (250 mil)	6.98 mm (275 mil)
Carbon Black	ASTM D4218	2.0%	2.0%	2.0%	2.0%
Tensile strength	ASTM D7179	7.87 N/mm (45 lb/in)	8.47 N/mm (50 lb/in)	9.62 N/mm (55 lb/in)	11.37 N/mm (65 lb/in)
Melt Flow *Maximum	ASTM D1238[2]	1.0 g/10 min	1.0 g/10 min	1.0 g/10 min	1.0 g/10 min
Density	ASTM D792, A	0.94 g/cm^3	0.94 g/cm^3	0.94 g/cm^3	0.94 g/cm^3
Transmissivity [1]	ASTM D4716	2.0 x 10^{-3} m^2/sec (9.67 gal/min/ft)	2.5 x 10^{-3} m^2/sec (12.08 gal/min/ft)	3.0 x 10^{-3} m^2/sec (14.50 gal/min/ft)	6.0 x 10^{-3} m^2/sec (29.00 gal/min/ft)

August 2025

HydraNet® Biplanar Geocomposite

Style (MAV)	Test Method	HydraNet® 220		HydraNet® 250		HydraNet® 270		HydraNet® 300	
		200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)
Ply Adhesion	ASTM D 7005	178 g/cm (1.0 lb/in)							
Transmissivity[1] D S	ASTM D 4716	HN 220-2-6	HN 220-2-8	HN 250-2-6	HN 250-2-8	HN 270-2-6	HN 270-2-8	HN 300-2-6	HN 300-2-8
		0.48 gal/min/ft (1.0 x 10^{-4} m^2/sec)		1.30 gal/min/ft (2.7 x 10^{-4} m^2/sec)		2.42 gal/min/ft (5.0 x 10^{-4} m^2/sec)		3.38 gal/min/ft (7.0 x 10^{-4} m^2/sec)	
Transmissivity[1] S S	ASTM D 4716	HN 220-1-6	HN 220-1-8	HN 250-1-6	HN 250-1-8	HN 270-1-6	HN 270-1-8	HN 300-1-6	HN 300-1-8
		4.83 gal/min/ft (1.0 x 10^{-3} m^2/sec)		5.80 gal/min/ft (1.2 x 10^{-3} m^2/sec)		7.25 gal/min/ft (1.5 x 10^{-3} m^2/sec)		9.67 gal/min/ft (2.0 x 10^{-3} m^2/sec)	

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HydraNet® Geotextile

Fabric Weight (MARV[4])	ASTM D 5261	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)	200 g/m^2 (6 oz/yd^2)	270 g/m^2 (8 oz/yd^2)
Grab Tensile	ASTM D 4632	711 N (160 lb)	1001 N (225 lb)	711 N (160 lb)	1001 N (225 lb)	711 N (160 lb)	1001 N (225 lb)	711 N (160 lb)	1001 N (225 lb)
Grab Elongation	ASTM D 4632	50%	50%	50%	50%	50%	50%	50%	50%

	Trapezoid Tear	ASTM D 4533	289 N (65 lb)	400 N (90 lb)	289 N (65 lb)	400 N (90 lb)	289 N (65 lb)	400 N (90 lb)	289 N (65 lb)	400 N (90 lb)
	CBR Puncture	ASTM D 6241	2002 N (450 lb)	2670 N (600 lb)	2002 N (450 lb)	2670 N (600 lb)	2002 N (450 lb)	2670 N (600 lb)	2002 N (450 lb)	2670 N (600 lb)
	Water Flow(5)	ASTM D 4491	5093 l/min/m^2 (125 gpm/ft^2)	4075 l/min/m^2 (100 gpm/ft^2)	5093 l/min/m^2 (125 gpm/ft^2)	4075 l/min/m^2 (100 gpm/ft^2)	5093 l/min/m^2 (125 gpm/ft^2)	4075 l/min/m^2 (100 gpm/ft^2)	5093 l/min/m^2 (125 gpm/ft^2)	4075 l/min/m^2 (100 gpm/ft^2)
	Permittivity(5)	ASTM D 4491	1.63 sec^{-1}	1.26 sec^{-1}	1.63 sec^{-1}	1.26 sec^{-1}	1.63 sec^{-1}	1.26 sec^{-1}	1.63 sec^{-1}	1.26 sec^{-1}
	Permeability(5)	ASTM D 4491	0.30 m/sec	0.30 m/sec	0.30 m/sec	0.30 m/sec	0.30 m/sec	0.30 m/sec	0.30 m/sec	0.30 m/sec
	AOS *MaxARV	ASTM D 4751	0.212 mm (70 US Sieve)	0.180 mm (80 US Sieve)	0.212 mm (70 US Sieve)	0.180 mm (80 US Sieve)	0.212 mm (70 US Sieve)	0.180 mm (80 US Sieve)	0.212 mm (70 US Sieve)	0.180 mm (80 US Sieve)

Notes:
(1) Transmissivity measured using water at 21 ± 2 ° C (70 ± 4) ° C with a gradient of 0.1 and a confining pressure of 10,000 psf between steel plates after 15 minutes. Values may vary with individual labs. DS - Double Sided, SS -Single Sided
(2) Condition 190/2.16 kg, tested on the resin.
(3) Minimum average value.
(4) MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.
(5) At the time of manufacturing. Handling may change these properties.

INSTALLATION

HydraNet® geonet and geocomposite drainage materials are delivered in rolls to cover large areas, and it is important to understand the field deployment and connections along the sides and ends of each roll to ensure a continuous drainage layer. HydraNet® rolled drainage products are easy to install compared to aggregate drains, especially on steep slopes where the placement of aggregate drainage materials would be challenging and expensive due to soil stability issues and equipment limitations. Each roll is deployed in place and overlapped a minimum of 100 mm (4 inches). This overlap is often secured in place with plastic ties at a rate of one tie every 1.5 m (5ft). The plastic ties hold the product in place while backfilling and are not intended to provide any seam strength between the panels. It is preferred that the ties should be a contrasting color to the black geonet (white nylon ties are most common). HydraNet® Geocomposite comes with a 6 inch edge of unbonded geotextile to assist with overlapping and joining the geonet panels. The ends of the HydraNet® geonet and geocomposites must eventually terminate by attachment to drainage pipes, sumps or swales.