

# GSE PermaNet UL Geocomposite

GSE PermaNet UL (Ultra Load) geocomposite is manufactured with a GSE PermaNet UL geonet heat-bonded on one or both sides with a GSE nonwoven needle-punched geotextile. The geotextile is available in mass per unit area range of 6 oz/yd<sup>2</sup> to 16 oz/yd<sup>2</sup>. The creep resistant structure of this 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.



**AT THE CORE:**  
A very high compressive strength geocomposite with a creep-resistant structure that ensures continuous flow performance over a broad range of conditions and long durations.

## Product Specifications

Tested Property	Test Method	Frequency	Minimum Average Roll Value		
<b>Geocomposite</b>			6 oz/yd <sup>2</sup>	8 oz/yd <sup>2</sup>	10 oz/yd <sup>2</sup>
Transmissivity <sup>(1)</sup> , gal/min/ft (m <sup>2</sup> /sec)	ASTM D 4716	1/540,000 ft <sup>2</sup>	4.8 (1 x 10 <sup>-3</sup> )	4.8 (1 x 10 <sup>-3</sup> )	4.8 (1 x 10 <sup>-3</sup> )
Double-Sided Composite Single-Sided Composite			6.2 (1.3 x 10 <sup>-3</sup> )	6.2 (1.3 x 10 <sup>-3</sup> )	6.2 (1.3 x 10 <sup>-3</sup> )
Ply Adhesion, lb/in	ASTM D 7005	1/50,000 ft <sup>2</sup>	1.0	1.0	1.0
<b>Geonet Core - GSE PermaNet UL (prior to lamination)<sup>(2)</sup></b>					
Transmissivity <sup>(1)</sup> , gal/min/ft (m <sup>2</sup> /sec)	ASTM D 4716		24 (5 x 10 <sup>-3</sup> )	24 (5 x 10 <sup>-3</sup> )	24 (5 x 10 <sup>-3</sup> )
Compression Strength, lb/ft <sup>2</sup>	ASTM D 6364	1/540,000 ft <sup>2</sup>	40,000	40,000	40,000
Creep Reduction Factor	ASTM D 7406/7361	per formulation	1.3@20,000 psf	1.3@20,000 psf	1.3@20,000 psf
Density, g/cm <sup>3</sup>	ASTM D 1505	1/50,000 ft <sup>2</sup>	0.94	0.94	0.94
Tensile Strength (MD), lb/in	ASTM D 5035/7179	1/50,000 ft <sup>2</sup>	100	100	100
Carbon Black Content, %	ASTM D 1603 <sup>(4)</sup> /4218	1/50,000 ft <sup>2</sup>	2.0	2.0	2.0
<b>Geotextile (prior to lamination)<sup>(2)</sup></b>					
Mass per Unit Area, oz/yd <sup>2</sup>	ASTM D 5261	1/90,000 ft <sup>2</sup>	6	8	10
Grab Tensile, lb	ASTM D 4632	1/90,000 ft <sup>2</sup>	160	220	260
Puncture Strength, lb	ASTM D 4833	1/90,000 ft <sup>2</sup>	90	120	165
AOS, US Sieve (mm)	ASTM D 4751	1/540,000 ft <sup>2</sup>	70	80	100
Permittivity, sec <sup>-1</sup>	ASTM D 4491	1/540,000 ft <sup>2</sup>	1.5	1.3	1.0
Flow Rate, gpm/ft <sup>2</sup>	ASTM D 4491	1/540,000 ft <sup>2</sup>	110	95	75
UV Resistance, % Retained	ASTM D 4355 (after 500 hours)	per formulation	70	70	70
<b>NOMINAL ROLL DIMENSIONS</b>					
Geonet Core Thickness, mil	ASTM D 5199	1/50,000 ft <sup>2</sup>	300	300	300
Roll Width <sup>(3)</sup> , ft			15	15	15
Roll Length <sup>(3)</sup> , ft	Double-Sided Composite Single-Sided Composite		190 200	180 200	150 190
Roll Area, ft <sup>2</sup>	Double-Sided Composite Single-Sided Composite		2,850 3,000	2,700 3,000	2,250 2,850

[Product specifications continued on back]



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**Product Specifications [continued]**

NOTES:

- <sup>(1)</sup>This is an index transmissivity value measured at stress = 25,000 psf; gradient = 0.1; time = 15 minutes; boundary conditions = between plates. Contact GSE for performance transmissivity value for use in design.
- <sup>(2)</sup>All geotextile properties are minimum average roll values except AOS (in mm) which is a maximum average roll value and UV resistance which is a typical value.
- <sup>(3)</sup>Roll widths and lengths have a tolerance of ±1%.
- <sup>(4)</sup>Modified.

GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.



**[ DURABILITY RUNS DEEP ]** For more information on this product and others, please visit us at [GSEworld.com](http://GSEworld.com), call 800.435.2008 or contact your local sales office.