The Pioneer Of Geosynthetics
SINCE 1972

Product Data Sheet

# GSE PermaNet SL Geocomposites

GSE PermaNet SL (Super Load), a member of the GSE Advanced Drainage Geocomposite family, is manufactured with a PermaNet SL geonet core head-bonded to single-sided or double-sided nonwoven geotextile filtration media. The patented unique round-strand structure of PermaNet SL geonet provides superior compressive creep resistance and ensures continuous flow performance over a broad range of conditions and long durations. PermaNet SL is manufactured through a one-step coextrusion process from prime quality high density polyethylene resins. This product is durable under rigorous environmental conditions and ideal for extremely demanding applications. Please contact GSE for 100-hour performance transmissivity database of PermaNet SL under the design loadings up to 50,000 psf.

### *Product Specifications*

| TESTED PROPERTY | TEST METHOD | FREQUENCY | MINIMUM AVERAGE VALUE[1] | | |
|---|---|---|---|---|---|
| **Gecomposite** | | | **6 oz/yd²** | **8 oz/yd²** | **10 oz/yd²** |
| Transmissivity[2], gal/min/ft (m²/sec)<br>Double-Sided Composite<br>Single-Sided Composite | ASTM D 4716 | 1/540,000 ft² | 9.6 (2.0 x $10^{-3}$)<br>12.5 (2.6 x $10^{-3}$) | 9.6 (2.0 x $10^{-3}$)<br>12.5 (2.6 x $10^{-3}$) | 9.6 (2.0 x $10^{-3}$)<br>12.5 (2.6 x $10^{-3}$) |
| Ply Adhesion, lb/in (g/cm) | ASTM D 7005 | 1/50,000 ft² | 1.0 (178) | 1.0 (178) | 1.0 (178) |
| **Geonet Core[3] – GSE PermaNet SL** | | | | | |
| Transmissivity[2], gal/min/ft (m²/sec) | ASTM D 4716 | 1/540,000 ft² | 28.8 (6.0 x $10^{-3}$) | 28.8 (6.0 x $10^{-3}$) | 28.8 (6.0 x $10^{-3}$) |
| Compressive Strength, lb/ft² (kPa) | ASTM D 1621 | 1/540,000 ft² | 40,000 (1,913) | 40,000 (1,913) | 40,000 (1,913) |
| Creep Reduction Factor | GRI GC8 | 1/formulation | 1.3@25,000 psf | 1.3@25,000 psf | 1.3@25,000 psf |
| Density, g/cm³ | ASTM D 1505 | 1/50,000 ft² | 0.94 | 0.94 | 0.94 |
| Tensile Strength (MD), lb/in (N/mm) | ASTM D 5035/7179 | 1/50,000 ft² | 100 (17) | 100 (17) | 100 (17) |
| Carbon Black Content, % | ASTM D 1603*/4218 | 1/50,000 ft² | 2.0 | 2.0 | 2.0 |
| **Geotextile[3,4]** | | | | | |
| Mass per Unit Area, oz/yd² (g/m²) | ASTM D 5261 | 1/90,000 ft² | 6 (200) | 8 (270) | 10 (335) |
| Grab Tensile, lb (N) | ASTM D 4632 | 1/90,000 ft² | 160 (710) | 220 (975) | 260 (1,155) |
| Puncture Strength, lb (N) | ASTM D 4833 | 1/90,000 ft² | 90 (395) | 120 (525) | 165 (725) |
| AOS, US Sieve (mm) | ASTM D 4751 | 1/540,000 ft² | 70 (0.212) | 80 (0.180) | 100 (0.150) |
| Permittivity, ($sec^{-2}$) | ASTM D 4491 | 1/540,000 ft² | 1.5 | 1.3 | 1.0 |
| Flow Rate, gpm/ft² (lpm/m²) | ASTM D 4491 | 1/540,000 ft² | 110 (4,480) | 95 (3,865) | 75 (3,050) |
| UV Resistance, % Retained | ASTM D 4355<br>(after 500 hours) | once per formulation | 70 | 70 | 70 |
| **NOMINAL ROLL DIMENSIONS** | | | | | |
| Geonet Core Thickness, mil (mm) | ASTM D 5199 | 1/50,000 ft² | 330 (8.4) | 330 (8.4) | 330 (8.4) |
| Roll Width[5], ft (m) | | | 15 (4.5) | 15 (4.5) | 15 (4.5) |
| Roll Length[5], ft (m) | Double-Sided Composite<br>Single-Sided Composite | | 150 (45.7)<br>150 (45.7) | 140 (42.7)<br>150 (45.7) | 130 (39.6)<br>140 (42.7) |
| Roll Area, ft² (m²) | Double-Sided Composite<br>Single-Sided Composite | | 2,250 (209)<br>2,250 (209) | 2,100 (195)<br>2,250 (209) | 1,950 (175)<br>2,100 (195) |

**NOTES:**

- [1] AOS in mm is a maximum value
- [2] Gradient of 0.1, normal load of 25,000 psf, water at 70° F between steel plates for 15 minutes. Contact GSE for performance transmissivity data for use in design.
- [3] Component properties prior to lamination.
- [4] Refer to geotextile product data sheet for additional specifications.
- [5] Roll widths and lengths have a tolerance of ±1%.
- *Modified.



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