



GSE STANDARD PRODUCTS

Product Data Sheet

Bentofix[®] Thermal Lock[®] NS GCL

Bentofix[®] Thermal Lock[®] "NS" geosynthetic clay liner (GCL) is a needlepunched reinforced composite comprised of a uniform layer of granular sodium bentonite encapsulated between a slit-film woven and a virgin staple fiber nonwoven geotextile. The needlepunched fibers are thermally fused to the bottom woven geotextile to enhance the reinforcing bond.

Product Specifications

GEOTEXTILE PROPERTIES	TEST METHOD	FREQUENCY	VALUE (ENGLISH)	VALUE (SI)
Product Code			BFIX2000NS	
Cap Nonwoven, Mass/Unit Area	ASTM D 5261	1/200,000 ft ² (1/20,000 m ²)	6.0 oz/yd ² MARV ¹	200 g/m ² MARV ¹
Bottom Scrim Woven, Mass/Unit Area	ASTM D 5261	1/200,000 ft ² (1/20,000 m ²)	3.1 oz/yd ² MARV	105 g/m ² MARV
BENTONITE PROPERTIES				
Swell Index	ASTM D 5890	1/100,000 lb (50,000 kg)	24 ml/2 g min	24 ml/2 g min
Moisture Content	ASTM D 4643	1/100,000 lb (50,000 kg)	12% max	12% max
Fluid Loss	ASTM D 5891	1/100,000 lb (50,000 kg)	18 ml max	18 ml max
FINISHED GCL PROPERTIES				
Bentonite, Mass/Unit Area ²	ASTM D 5993	1/40,000 ft ² (1/4,000 m ²)	0.89 lb/ft ² MARV	4.34 kg/m ² MARV
Tensile Properties, Tensile Strength ⁴ Grab Strength ³ Grab Elongation ³	ASTM D 6768 ASTM D 4632 ASTM D 4632	1/40,000 ft ² (1/4,000 m ²)	40 lb/in MARV 95 lb MARV 100% Typical	7 kN/m MARV 422 N MARV 100% Typical
Peel Strength ⁴	ASTM D 4632 ASTM D 6496	1/40,000 ft ² (1/4,000 m ²)	15 lb min 2.5 lb/in min	66 N min 438 N/m min
Hydraulic Conductivity ⁵	ASTM D 5084	1/Week	5 x 10 ⁻¹¹ m/sec max	5 x 10 ⁻¹¹ m/sec max
Index Flux ⁵	ASTM D 5887	1/Week	1 x 10 ⁻⁸ m ³ /m ² /sec max	1 x 10 ⁻⁸ m ³ /m ² /sec max
Internal Shear Strength ⁶	ASTM D 6243	Periodically	500 psf Typical	24 kPa Typical
ROLL DIMENSIONS				
Width x Length	Typical	Every Roll	15.5 ft x 150 ft	4.7 m x 45.7 m
Area per Roll	Typical	Every Roll	2,325 ft ²	216 m ²
Packaged Weight	Typical	Every Roll	2,600 lb	1,179 kg

NOTES:

- ¹ Minimum Average Roll Value.
- ² Oven-dried measurement. Equates to 1.0 lb/ft² (4.9 kg/m²) when indexed to a 12% moisture content.
- ³ Measured at maximum peak, in weakest principal direction. Elongation is provided for reference only.
- ⁴ 4 in (100 mm) wide sample, average of 5 specimens.
- ⁵ De-Aired Tap Water @ 5 psi (34.5 kPa) maximum effective confining stress and 2 psi (13.8 kPa) head.
- ⁶ Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf (9.6 kPa) normal stress.

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