BENTOFIX® NSL

NSL

Thermal Lock® Geosynthetic Clay Liners

Bentofix Thermal Lock® NSL Geosynthetic Clay Liner (GCL) is a needlepunched, thermally reinforced composite comprised of a core of natural sodium Wyoming bentonite clay between two durable geotextile layers to form a low permeability hydraulic barrier. The top layer is a staple fiber nonwoven (NW) geotextile while the bottom layer is a woven (W) geotextile. The product is intended for moderate to steep slopes and moderate to high load applications where increased internal shear strength is required.

Property	ASTM Test Method	Frequency	Value Imperial Units	Value Metric Units
Typical Geotextile Properties				
• Top / Cap Nonwoven	D 5261	200,000 sq ft (20,000 m^2)	6.0 oz./yd^2 MARV	200 g / m^2 MARV(1)
• Woven			3.1 oz./yd^2 MARV	105 g / m^2 MARV
Bentonite Properties (SI Units Only)				
• Swell Index	D 5890	100,000 lbs.	24 ml/ 2 g min.	24 ml/ 2 g min.
• Moisture Content	D 4643	(50,000 kg)	12 % max.	12 % max.
• Fluid Loss	D 5891	100,000 lbs.	18 ml max.	18 ml max.
Finished GCL Properties				
• Bentonite Mass/Unit Area[2]	D 5993	40,000 ft^2 (4,000 m^2)	0.75 lbs/ft^2 MARV	3.66 kg/m^2 MARV
• Tensile Strength	D 6768	40,000 ft^2 (4,000 m^2)	30 lb/in MARV	5 kN/m MARV
• Peel Strength	D 6496	40,000 ft^2 (4,000 m^2)	3.5 lbs/in min	610 N/m min
• Permeability[3]	D 5887	Weekly	5 x 10^{-9} cm/s max	5 x 10^{-9} cm/s max
• Index Flux[3]	D 5887	Weekly	1 x 10^{-8} $m^3/m^2/s$ max	1 x 10^{-8} $m^3/m^2/s$ max
• Internal Shear Strength[4]	D 6243	Periodic	500 psf Typical	24 kPa Typical

(1) Minimim Average Roll Value.
(2) Oven-dried measurement. Equates to 0.84 lb/sqft (4.1 kg/sqm) when indexed to 12% moisture content.
(3) Deaired, deionized water @ 5 psi (34.5 kPa) maximum effective confining stress and 2 psi (13.8 kPa) head pressure.
(4) Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf (9.6 kPa) normal stress.

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