PRODUCT DATA SHEET

GSE BentoLiner CAR NSL Geosynthetic Clay Liner

METRIC

GSE BentoLiner "CAR NSL" is a needle-punched reinforced composite geosynthetic clay liner (GCL) comprised of a uniform layer of specially formulated polymer enhanced granular sodium bentonite encapsulated between a woven and a nonwoven geotextile. This product is intended for containment of potentially high ionic strength leachates typically encountered in coal combustion waste applications. The product is suitable in designs with moderate-to-steep slopes and moderate-to-high loads where increased internal shear strength is required.

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AT THE CORE:

This composite clay liner is intended for containment of potentially high ionic strength leachates typically encountered in coal combustion waste applications.

Product Specifications

Tested Property	Test Method	Frequency	Value
Geotextile Property			
Cap Nonwoven, Mass/Unit Area	ASTM D 5261	1/20,000 m^2	200 g/m^2 MARV(1)
Carrier Woven, Mass/Unit Area	ASTM D 5261	1/20,000 m^2	105 g/m^2 MARV
Bentonite Property			
Swell Index	ASTM D 5890	1/50,000 kg	24 ml/2 g min
Moisture Content	ASTM D 4643	1/50,000 kg	12% max
Fluid Loss	ASTM D 5891	1/50,000 kg	18 ml max
Finished GCL Property			
Bentonite, Mass/Unit Area(2)	ASTM D 5993	1/4,000 m^2	3.66 kg/m^2 MARV
Tensile Strength(3)	ASTM D 6768	1/4,000 m^2	5.3 kN/m MARV
Peel Strength	ASTM D 6496 ASTM D 4632(4)	1/4,000 m^2	610 N/m MARV 93 N MARV
Hydraulic Conductivity(5)	ASTM D 5887	1/Week	5 x 10^{-9} cm/sec max
Index Flux(5)	ASTM D 5887	1/Week	1 x 10^{-8} m^3/m^2/sec max
Internal Shear Strength(6)	ASTM D 6243	Periodically	24 kPa Typical
TYPICAL ROLL DIMENSIONS			
Width x Length(7)	Typical	Every Roll	4.7 m x 45.7 m
Area per Roll	Typical	Every Roll	216 m^2
Packaged Weight	Typical	Every Roll	1,179 kg

NOTES:

- (1)Minimum Average Roll Value.
- (2)At 0% moisture content.
- (3)Tested in machine direction.
- (4)Modified ASTM D 4632 to use a 100 mm wide grip. The maximum peak of five specimens averaged in machine direction.
- (5)Deaired, deionized water @ 34.5 kPa maximum effective confining stress and 13.8 kPa head pressure.
- (6)Typical peak value for specimen hydrated for 24 hours and sheared under a 9.6 kPa normal stress.
- (7)Roll widths and lengths have a tolerance of ±1%.

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.

GSE ENVIRONMENTAL™

[DURABILITY RUNS DEEP]

For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.