



BENTOMAT® ST CERTIFIED PROPERTIES

Material Property	Test Method	Test Frequency ft ² (m ²)	Required Values
Bentonite Swell Index ¹	ASTM D 5890	1 per 50 tonnes	24 ml/2g min.
Bentonite Fluid Loss ¹	ASTM D 5891	1 per 50 tonnes	18 ml max.
Bentonite Mass/Area ²	ASTM D 5993	40,000 ft ² (4,000m ²)	0.75 lb/ft ² (3.6 kg/m ²) min
GCL Grab Strength ³	ASTM D 4632 ASTM D 6768	200,000 ft ² (20,000 m ²)	90 lbs (400 N) min 22.5 lbs/in (40 N/cm)min
GCL Peel Strength ³	ASTM D 4632 ASTM D 6496	40,000 ft ² (4,000 m ²)	15 lbs (65 N) min 2.5 lbs/in (4.4 N/cm) min
GCL Index Flux ⁴	ASTM D 5887	Weekly	1 x 10 ⁻⁸ m ³ /m ² /sec max
GCL Hydraulic Conductivity ⁴	ASTM D 5887	Weekly	5 x 10 ⁻⁹ cm/sec max
GCL Hydrated Internal Shear Strength ⁵	ASTM D 5321 ASTM D 6243	Periodic	500 psf (24 kPa) typical @ 200 psf 6,500 psf (311 kPa)typical @ 10,800 psf

Bentomat ST is a reinforced GCL consisting of a layer of sodium bentonite between woven and a nonwoven geotextiles, which are needlepunched together.

Notes

¹ Bentonite property tests performed at a bentonite processing facility before shipment to CETCO's GCL production facilities.

² Bentonite mass/area reported a 0 percent moisture content.

³ All tensile strength and peel strength testing is performed in the machine direction using 4 inch grips per modified ASTM D 4632. Results are reported as minimum average roll values unless otherwise indicated. Upon request, tensile strength can be reported per ASTM D 6768 and peel strength can be reported as per ASTM D 6496.

⁴ Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551 kPa) cell pressure, 77 psi (31 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5 x 10⁻⁹ cm/sec for typical GCL thickness. Actual flux values vary with field conditions pressures. The last 20 weekly values prior to the end of the production date of the supplied GCL may be provided.

⁵ Peak values measured at 200 psf (10 kPa) and 10,800 psf (517 kPa) normal stress for a specimen hydrated for 48 hours. Site-specific materials, GCL products and test conditions must be used to verify internal and interface strength of the proposed design.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seams. We call this edge enhancement, SuperGroov™e, and it comes standard on both longitudinal edges of Bentomat® DN. It should be noted that SuperGroove™ does not appear on the end-of-roll overlaps and recommend the continued use of supplemental bentonite for all end-of-roll seams.

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