

## BENTOMAT® CL CERTIFIED PROPERTIES

Material Property	Test Method	Test Frequency ft <sup>2</sup> (m <sup>2</sup> )	Required Values
Bentonite Swell Index <sup>1</sup>	ASTM D 5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss <sup>1</sup>	ASTM D 5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area <sup>2</sup>	ASTM D 5993	40,000 ft <sup>2</sup> (4,000m <sup>2</sup> )	0.75 lb/ft <sup>2</sup> (3.6 kg/m <sup>2</sup> ) min
GCL Grab Strength <sup>3</sup>	ASTM D 4632 ASTM D 6768	200,000 ft <sup>2</sup> (20,000 m <sup>2</sup> )	120 lbs (530 N) MARV 30 lbs/in (53 N/cm) MARV
GCL Peel Strength <sup>3</sup>	ASTM D 4632 ASTM D 6496	40,000 ft <sup>2</sup> (4,000 m <sup>2</sup> )	15 lbs (65 N) min 2.5 lbs/in (4.4 N/cm) min
GCL Index Flux <sup>4</sup>	ASTM D 5887	Periodic	1 x 10 <sup>-9</sup> m <sup>3</sup> /m <sup>2</sup> /sec max
GCL Hydraulic Conductivity <sup>4</sup>	ASTM D 5887	Periodic	5 x 10 <sup>-10</sup> cm/sec max
GCL Hydrated Internal Shear Strength <sup>5</sup>	ASTM D 5321 ASTM D 6243	Periodic	500 psf (24 kPa) typical

***Bentomat CL is a reinforced GCL consisting of a layer of sodium bentonite between two geotextiles, which are needlepunched together and laminated to a thin flexible membrane liner. Notes***

<sup>1</sup> Bentonite property tests performed at a bentonite processing facility before shipment to CETCO's GCL production facilities. <sup>2</sup> Bentonite mass/area reported a 0 percent moisture content. <sup>3</sup> 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. <sup>4</sup> ASTM D5887 Index flux and hydraulic conductivity testing with deaired distilled/deionized water at 80 psi (551 kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 92 gal/acre/day. This flux value is equivalent to a permeability of 5 x 10<sup>-10</sup> cm/sec for typical GCL thickness. ASTM 5887 testing is performed only on a periodic basis because the membrane is essentially impermeable

<sup>5</sup> Peak values measured at 200 psf (10 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.

PO Box 633, Isando 1600, South Africa  
10 Diesel Road, Isando 1600, South Africa  
Tel: +27 11 974 5271  
Fax: +27 11 974 4111  
E-mail: [aqua@aquatan.co.za](mailto:aqua@aquatan.co.za)  
Website: [www.aquatan.co.za](http://www.aquatan.co.za)