

BENTOMAT® CL CERTIFIED PROPERTIES

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY	REQUIRED VALUES
GCL Index Flux ¹	ASTM D5887 or E96	Weekly	$1 \times 10^{-9} \text{ (m}^3/\text{m}^2\text{)}.s^{-1}$
GCL Permeability ¹	ASTM D5084 or E96	Weekly	$5 \times 10^{-12} \text{ m}.s^{-1}$
Bentonite Fluid Loss	ASTM D5891	5,000m ²	18 mL max
Bentonite Mass/Area ²	ASTM D5993	5,000m ²	3.6kg.m ⁻²
GCL Grab Strength ³	ASTM D4632	5,000m ²	530 N
GCL Peel Strength ³	ASTM D4632	5,000m ²	65 N
Bentonite Swell Index ⁴	ASTM D5890	5,000m ²	24mL/2gmin

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

Notes:

1. ASTM D5887 Index Flux and ASTM D5084 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 864 litres/hectare/day. This flux value is equivalent to a permeability of $5 \times 10^{-12} \text{ ms}^{-1}$ for typical GCL thickness. Alternatively, hydraulic conductivity can be determined by performing water vapor transmissivity testing (ASTM E96) on the membrane side of the GCL and use conversion outlined by Koerner (1994). This flux value should not be used for equivalency calculations unless the gradients used represent field conditions. A flux test using gradients that represent field conditions must be performed to determine equivalency. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.
2. Bentonite mass/area reported at 0 percent moisture content.
3. All tensile testing is performed in the machine direction, with results as minimum average roll values unless otherwise.
4. Bentonite property tests performed at CETCO's bentonite processing facility before shipment to CETCO's GCL production facilities.



COLLOID ENVIRONMENTAL TECHNOLOGIES COMPANY

The information and data contained herein are believed to be accurate and reliable. CETCO makes no warranty of any kind and accepts no responsibility for the results obtained through application of this information.

<p>CETCO EUROPE Ltd Birch House, Scotts Quays, Birkenhead, Merseyside, CH41 1FB, UK Tel: +44(0)151 606 5900 Fax: +44(0)151 606 5949</p>
