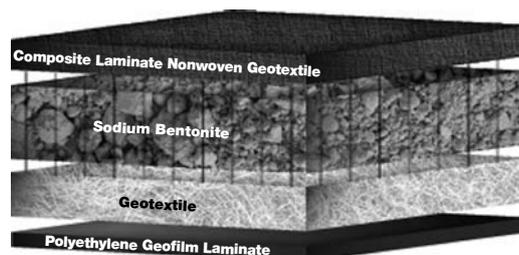


**BENTOMAT® CL** is a reinforced GCL consisting of two carrier geotextiles encapsulating a layer of sodium bentonite, with a flexible membrane liner laminated to one side. This GCL provides excellent hydraulic performance and has puncture and tensile strengths beyond conventional plastic membranes. These characteristics make this GCL ideal for conditions that require outstanding performance in high hydrostatic head conditions such as ponds and liquid containment projects. It is also applicable for use in landfill covers and is ideal for applications with slopes up to 3H:1V.



## BENTOMAT® CL certified properties

Material Property	ASTM Test Method	Test Frequency	Required Values
<b>Bentonite Swell Index<sup>1</sup></b>	D 5890	1 per 50 tonnes	24mL/2g min.
<b>Bentonite Fluid Loss<sup>1</sup></b>	D 5891	1 per 50 tonnes	18mL max.
<b>Bentonite Mass/Area<sup>2</sup></b>	D 5993	4,000m <sup>2</sup>	3.6kg/m <sup>2</sup> min.
<b>GCL Tensile Strength<sup>3</sup></b>	D 6768	20,000m <sup>2</sup>	78N/cm MARV
<b>GCL Peel Strength<sup>3</sup></b>	D 6496	4,000m <sup>2</sup>	440N/m min.
<b>GCL Index Flux<sup>4</sup></b>	D 5887	Periodic	1 x 10 <sup>-9</sup> m <sup>3</sup> /m <sup>2</sup> /sec max.
<b>GCL Hydraulic Conductivity<sup>4</sup></b>	D 5887	Periodic	5 x 10 <sup>-10</sup> cm/sec max.
<b>GCL Hydrated Internal Shear Strength<sup>5</sup></b>	D 5321 D 6243	Periodic	24kPa typ @ 976kg/m <sup>2</sup>

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

### Notes

1. Bentonite property tests performed at a bentonite processing facility before shipment to CETCO GCL production facilities.
2. Bentonite mass/area reported at 0 percent moisture content.
3. All tensile strength testing is performed in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request, tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips.
4. ASTM D 5887 Index flux and hydraulic conductivity testing with deaired distilled/deionized water at 551kPa cell pressure, 531kPa headwater pressure and 517kPa tailwater pressure. Reported value is equivalent to 1 x 10<sup>-9</sup> m<sup>3</sup>/m<sup>2</sup>/sec. This flux value is equivalent to a permeability of 5 x 10<sup>-10</sup> cm/sec for typical GCL thickness. ASTM D 5887 testing is performed only on a periodic basis because the membrane is essentially impermeable.
5. Peak value measured at 10kPa 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.