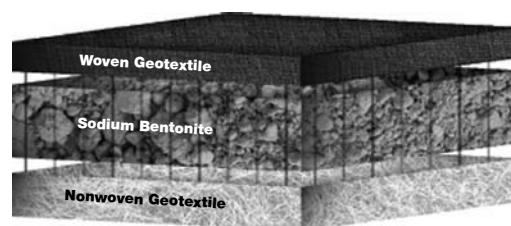


BENTOMAT® ST is the most commonly specified GCL in the world, proving ideal for standard applications involving slopes up to 3H:1V. Bentomat ST consists of a layer of sodium bentonite encapsulated between woven and non-woven geotextiles, which are needle-punched together to provide internal reinforcement. The internal reinforcement minimises clay shifting, thus allowing the GCL to maintain consistent low permeability and maximum performance under a wide variety of field conditions.



BENTOMAT® ST certified properties

Material Property	ASTM Test Method	Test Frequency	Required Values
Bentonite Swell Index¹	D 5890	1 per 50 tonnes	24mL/2g min.
Bentonite Fluid Loss¹	D 5891	1 per 50 tonnes	18mL max.
Bentonite Mass/Area²	D 5993	4,000m ²	3.6kg/m ² min.
GCL Tensile Strength³	D 6768	20,000m ²	53N/cm MARV
GCL Peel Strength³	D 6496	4,000m ²	400N/m min.
GCL Index Flux⁴	D 5887	Weekly	1 x 10 ⁻⁸ m ³ /m ² /sec max.
GCL Hydraulic Conductivity⁴	D 5887	Weekly	5 x 10 ⁻⁹ cm/sec max.
GCL Hydrated Internal Shear Strength⁵	D 5321 D 6243	Periodic	24kPa typ @ 976kg/m ²

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

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. Index flux and permeability testing with deaired distilled/deionized water at 552kPa cell pressure, 531kPa headwater pressure and 517kPa tailwater pressure. Reported value is equivalent to 1 x 10⁻⁸ m³/m²/sec. 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 condition 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 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.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seam. This edge enhancement is known as SuperGroove™, 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.