TECHNICAL DATA

BENTOMAT® ST
GEOSYNTHETIC CLAY LINER

DESCRIPTION

BENTOMAT ST GCL is a reinforced geosynthetic clay liner (GCL) consisting of a layer of sodium bentonite between woven and nonwoven geotextiles, which are needlepunched together.

TESTING DATA

PHYSICAL PROPERTIES			
MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY	REQUIRED VALUES
Bentonite Swell Index[1]	ASTM D5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss[1]	ASTM D5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area[2]	ASTM D5993	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2) min.
GCL Grab Strength[3]	ASTM D6768	200,000 ft^2 (20,000 m^2)	30 lbs/in (53 N/cm) MARV
GCL Peel Strength[3]	ASTM D6496	40,000 ft^2 (4,000 m^2)	3.5 lbs/in (6.1 N/cm) min.
GCL Index Flux[4]	ASTM D5887	Weekly	1 x 10^{-8} m^3/m^2/s max.
GCL Hydraulic Conductivity[4]	ASTM D5887	Weekly	5 x 10^{-9} cm/s max.
GCL Hydrated Internal Shear Strength[5]	ASTM D5321 ASTM D6243	Periodic	500 psf (24 kPa) typical @ 200 psf

Notes:

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

[2] Bentonite mass/area reported at 0% moisture content.

[3] All tensile strength testing is performed in the machine direction using ASTM D6768. All peel strength testing is performed using ASTM D6496. Upon request, tensile and peel results can be reported per modified ASTM D4632 using 4 inch grips.

[4] Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551kPa) cell pressure, 77 psi (531 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 5x10^{-9} cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.

[5] 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.

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MINERALS TECHNOLOGIES

CETCO®