

RESISTEX® U20 ST

POLYMER ENHANCED GEOSYNTHETIC CLAY LINER

DESCRIPTION

RESISTEX® U20 ST Geosynthetic Clay Liner (GCL) is polymer enhanced to provide the highest level of chemical compatibility in range of pH and elevated salinity environments. Such environments may include chloride or sulfate rich leachate, such as coal combustion product storage facilities, low pH mining operations, and industrial waste storage facilities. Site-specific compatibility testing is strongly recommended.¹

CERTIFIED PROPERTIES

PHYSICAL PROPERTIES			
MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY	CERTIFIED VALUES
Woven Base Geotextile Mass/Area ²	ASTM D5261	200,000 ft ² (20,000 m ²)	3.2 oz/yd ² (108 g/m ²) min.
Nonwoven Cap Geotextile Mass/Area ²	ASTM D5261	200,000 ft ² (20,000 m ²)	6.0 oz/yd ² (203 g/m ²) min.
Bentonite Moisture Content ³	ASTM D2216	1 per 50 tonnes	12% max.
Bentonite Swell Index ³	ASTM D5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss ³	ASTM D5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area ⁴	ASTM D5993	40,000 ft ² (4,000 m ²)	0.75 lb/ft ² (3.7 kg/m ²) min.
Total Mass/Area ⁴	ASTM D5993	40,000 ft ² (4,000 m ²)	0.81 lb/ft ² (4.0 kg/m ²) min.
GCL Moisture Content	ASTM D5993	40,000 ft ² (4,000 m ²)	35% max.
GCL Grab Strength ⁵	ASTM D6768	200,000 ft ² (20,000 m ²)	30 lbs/in (5.3 kN/m) min.
GCL Peel Strength	ASTM D6496	40,000 ft ² (4,000 m ²)	3.5 lbs/in (610 N/m) min.
GCL Hydraulic Conductivity ⁶ in DI Water	ASTM D5887	250,000 ft ² (25,000 m ²)	3 x 10 ⁻¹¹ m/s max.
GCL Hydraulic Conductivity ⁷ in 0.02M CaCl ₂	ASTM D6766	1,000,000 ft ² (100,000 m ²)	3 x 10 ⁻¹¹ m/s max.
GCL Hydrated Internal Shear Strength ⁸	ASTM D6243	1,000,000 ft ² (100,000 m ²)	500 psf (24 kPa) typ. @ 200 psf (9.6 kPa)

¹ Compatibility testing via ASTM D6766 recommended using site-specific leachate as the permeate fluid. Pre-hydration requirements for the GCL sample and other testing parameters such as confining stress to be prescribed by the design professional.

² Geotextile property tests performed on the geotextile components before they are incorporated into the finished GCL product.

³ Bentonite property tests performed before the bentonite is incorporated into the finished GCL product.

⁴ Reported at 0% moisture content.

⁵ All tensile strength testing is performed in the machine direction using ASTM D6768.

⁶ Index flux and hydraulic conductivity testing with deaired distilled/deionized water at 80 psi (550 kPa) cell pressure, 77 psi (530 kPa) headwater pressure and 75 psi (515 kPa) tailwater pressure.

⁷ Index flux and hydraulic conductivity testing with 0.02M CaCl₂ solution at 80 psi (550 kPa) cell pressure, 77 psi (530 kPa) headwater pressure and 75 psi (515 kPa) tailwater pressure.⁸ Peak values measured at 200 psf (9.6 kPa) normal stress for a specimen hydrated in the shearbox for 48 hours. Hydrating outside of the shearbox is not recommended. 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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