

AGRU GeoClay®

REINFORCED
NEEDLE-PUNCHED
GEOSYNTHETIC CLAY
LINER



The Plastics Experts.

AGRU America's GeoClay® is a reinforced needle-punched geosynthetic clay liner that consists of a uniform layer of natural granular sodium bentonite encapsulated between a woven and a nonwoven geotextile, or between scrim reinforced woven & nonwoven geotextiles. These products are intended for moderate-to-steep slopes and moderate- to high-load applications, where increased internal shear strength is required.

The AGRU success story has been unfolding now for about seven decades. Founded in 1948 by Alois Gruber Sr., the company has grown to become one of the world's most important single-source suppliers for piping systems, semi-finished products, concrete protection liners and lining systems made from engineered plastics. Our ability to supply everything from a single source sets us apart. When it comes to application-technical consulting, we are your best partner in the field.



Quality

At AGRU, customer satisfaction comes first. Our start-to-finish attention to quality ensures that our products meet and exceed the strictest technical specifications, providing safe operation within municipal solid waste, coal combustion residual (CCR), mining, oil & gas, water and wastewater infrastructures.

AGRU GeoClay®

Features of Agru GeoClay® include:

- Roll widths up to 15.5'
- Hydraulically superior to two feet of 1×10^{-7} cm/sec permeability compacted clay
- Industry leading interface shear strength performance when combined with Agru MicroSpike geomembranes
- Provides additional airspace and reduction of carbon footprint
- High internal and interface shear strength for slope stability
- One truckload covers over 90% of an acre.
- Natural sodium bentonite is self-healing and self-sealing
- Natural sodium bentonite is compatible with MSW leachates and mining solutions
- Polymer enhanced bentonite is also available for applications where leachate is incompatible with standard bentonite
- Compatibility can be established with other waste streams (site specific testing is always recommended)
- Agru GeoClay® is installed more efficiently and faster than traditional compacted clay layers
- Significant reduction in CQA time and testing costs





Applications



AGRU GeoClay® Applications Include:

Primary or secondary containment in composite landfill cells and closures, mining leach pads, tailing impoundments and reclamations, along with composite liners for ponds and lagoons.

AGRU GEOCLAY® NN66 GENERAL PROPERTIES

Material Property	Test Method	Test Frequency SF	Required Values
Bentonite Swell Index ¹	D 5890	1 per 100,000 lbs.	24 ml/2g min.
Bentonite Fluid Loss ¹	D 5891	1 per 100,000 lbs.	18 ml max
Bentonite Mass/Area ²	D 5993	40,000 ft ² (4,000 m ²)	0.75 lb/ft ² (3.6 kg/m ²) min
GCL Tensile Strength ³	D 6768	40,000 ft ² (4,000 m ²)	50 lbs/in (87N/cm) MARV
GCL Peel Strength ³	D 6496	40,000 ft ² (4,000 m ²)	3.5 lbs/in (6.1 N/cm) min
GCL Index Flux ⁴	D 5887	Weekly	1 x10 ⁻⁸ m ³ /m ² /sec max
GCL Hydraulic Conductivity ⁴	D 5887	Weekly	5 x10 ⁻⁹ cm/sec max
GCL Hydrated Internal Shear Strength ⁵	D 6243	Periodic	500psf (24 kPa) typ

Notes:

¹ Bentonite property tests performed at a bentonite processing facility prior to shipment to GCL production facility.

² Bentonite mass/area reported at 0% 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 & peel tests can be reported per modified ASTM D 4632 using 4" grips.

⁴ Deaired, deionized water @ 5psi maximum confining pstress and 2 psi head pressure. Reported value is equivalent to 925 gal/acre/day. The flux value is equivalent to a permeability of 5x10⁻⁹ cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures.

⁵ Specimens are hydrated for 24 hours and sheared at 200 psf. 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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