

# Agru GeoClay™



Agru **GeoClay** is a reinforced needle-punched Geosynthetic Clay Liner (GCL), comprised of a uniform layer of granular bentonite, encapsulated between a woven and a nonwoven geotextile or two nonwoven geotextiles. These products are intended for moderate to steep slopes and moderate to high load applications, where increased internal shear strength is required.

## Features of Agru GeoClay include:

- Available in roll widths up to 15.5'.
- **Hydraulically superior to several feet of  $1 \times 10^{-7}$  cm/sec compacted clay. Additional airspace, reduction of carbon footprint.**
- High internal and interface shear strength for slope stability.
- One truckload covers  $\frac{3}{4}$  of an acre.
- Natural sodium bentonite is self-healing and self-sealing.
- Bentonite is compatible with typical MSW leachates and mining solutions.
- Compatibility can be established with other waste streams. Site specific testing is always recommended.
- Agru GeoClay is installed more efficiently than traditional compacted clay layers.
- Reduced CQA time and testing costs.

## GeoClay applications include:

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



# Agru GeoClay™ General Properties



## Agru GeoClay NN66 General Properties

Material Property	Test Method	Test Frequency SF	Required Values
Bentonite Swell Index <sup>1</sup>	D 5890	1 per 100,000 lbs.	24 ml/2g min.
Bentonite Fluid Loss <sup>1</sup>	D 5891	1 per 100,000 lbs.	18 ml max.
Bentonite Mass/Area <sup>2</sup>	D 5993	40,000 ft <sup>2</sup> (4,000 m <sup>2</sup> )	0.75 lb/ft <sup>2</sup> (3.6 kg/m <sup>2</sup> ) min
GCL Tensile Strength <sup>3</sup>	D 6768	40,000 ft <sup>2</sup> (4,000 m <sup>2</sup> )	50 lbs/in (87N/cm) MARV
GCL Peel Strength <sup>3</sup>	D 6496	40,000 ft <sup>2</sup> (4,000 m <sup>2</sup> )	3.5 lbs/in (6.1 N/cm) min
GCL Index Flux <sup>4</sup>	D 5887	Weekly	1 x 10 <sup>-8</sup> m <sup>3</sup> /m <sup>2</sup> /sec max
GCL Hydraulic Conductivity <sup>4</sup>	D 5887	Weekly	5 x 10 <sup>-9</sup> cm/sec max
GCL Hydrated Internal Shear Strength <sup>5</sup>	D 6243	Periodic	500 psf (24 kPa) typ

**Notes:**

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

<sup>2</sup> Bentonite mass/area reported at 0% moisture content.

<sup>3</sup> 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.

<sup>4</sup> 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<sup>-9</sup> cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures.

<sup>5</sup> 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.

*The Best Protection for Your Future!*