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Geosynthetic Clay Liner

Description

Geosynthetic Clay Liners (GCL) are needle punched reinforced composites which combine two durable geotextile outer layers with a uniform core of natural sodium bentonite clay to form a hydraulic barrier. The sodium bentonite clay utilized in GCL is a naturally occurring clay mineral that swells as water enters between its clay platelets. When hydrated under confinement, the bentonite swells to form a low permeability clay liner with the equivalent hydraulic protection of approximately one meter of compacted clay.

GCL is produced by distributing a uniform layer of the sodium bentonite between two geotextiles. Fibers from the upper nonwoven geotextile are then needle punched through the layer of bentonite and incorporated into the lower geotextile (either a woven or a nonwoven/woven composite). This process results in a strong mechanical bond between the fabrics.

A proprietary heat treating process – is then used to modify and more permanently lock the needle punched fiber into place. Unique properties, including increased internal shear resistance and long term creep resistance, results from this procedure.

GCL Performance

With Geosynthetic Clay Liner, the clay component is no longer the limiting factor on side slopes. You can use Geosynthetic Clay Liner to replace compacted clay layers on steep side slopes and be assured of low permeability without sacrificing slope stability. The inherent confining stress from the needle punching also maintains the hydraulic properties of Geosynthetic Clay Liner under low confining stress applications.

Assured Quality Control

Because Geosynthetic Clay Liner is a factory manufactured liner product, the regulated environment of the production facility allows for greater control over critical performance characteristics. The intensive quality control programmer ensures consistent hydraulic and physical properties through the latest EN-ISO and ASTM procedures. The thorough manufacturing quality control minimizes the expensive and time consuming onsite quality assurance testing, which is required for compacted clay liners. Geosynthetic Clay Liners provides consistent high quality performance.