

BENTOLINER

Geosynthetic Clay Liner (GCL)



THE ECONOMIC AND ECOLOGICAL ALTERNATIVE

Historically, containment systems have used lining elements consisting of a geomembrane and a compacted clay liner (CCL). Geosynthetic clay liners (GCL), also known as geosynthetic clay barriers (GBR-C), can be used as an alternative to the space consuming CCLs in liner systems. Half a meter of compacted clay (or even more) is replaced by an industrially manufactured relatively thin – produced thickness around 1 cm – GCL with better performance. This saves construction time, increases installation efficiency especially on slopes, minimizes potential risks on site, and provides a better ecological footprint by reducing the required transport.

WHAT IS BENTOLINER?

BENTOLINER® is produced by distributing a uniform layer of high swelling sodium bentonite between two geotextiles. Fibers from the upper nonwoven geotextile are needle punched through the layer of bentonite and incorporated into the lower woven carrier fabric. A heat-treating process – sometimes designated “thermal lock” - is then used to modify and permanently lock the needle punched fibers into place.

BENTOLINER, as an industrially manufactured composite material combining high swelling bentonite clay and geosynthetics, in conjunction with the complete Solmax product portfolio, is the perfect choice for containment lining applications.

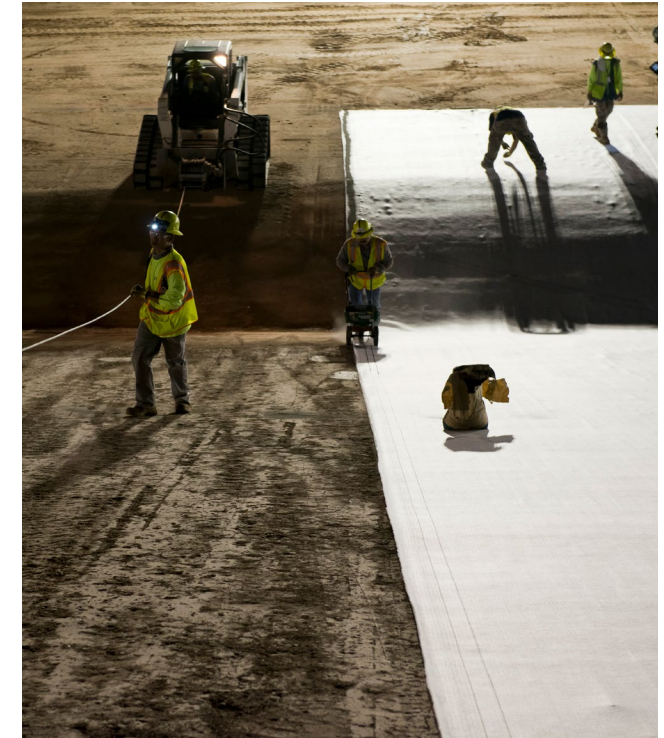
This production process results in a strong mechanical bond between the fabrics, reinforces the bentonite and keeps it in place even on steep slopes. When hydrated under confinement, the bentonite swells to form a low permeability clay layer with a hydraulic conductivity value of 5×10^{-9} cm/sec. **BENTOLINER** as a completely uniform, reinforced GCL provides unique properties like internal shear strength, frictional characteristics, long-term creep resistance, and stability advantages important to any application.

FEATURES

BENTOLINER comes in two basic versions:

- **BENTOLINER HS** as solution to most containment lining challenges, and
- **BENTOLINER SW** for structural waterproofing applications.

Furthermore, the fabric encased geosynthetic clay liner is produced in several versions to comply with the requirements of local standards and regulations, for example **BENTOLINER LAGA** for the German landfill market. For creating a low permeability layer, loose bentonite is manually inserted into the panel overlap zones. Alternatively, the seam installation process can be facilitated by factory furnished self-sealing edges.



As an additional feature the **BENTOLINER** can be laminated with a synthetic sheet.

GCL BENEFITS

- Factory provided, quality-controlled lining element
- Controlled installation process (especially on slopes); quicker than CCL
- Thin element in comparison to a CCL: more (landfill) storage volume; less transport volume and reduced carbon footprint
- Self-healing if punctured
- Very low permeability ($< 5 \times 10^{-9}$ cm/sec)

About us

Solmax is a world leader in sustainable construction solutions, for civil and environmental infrastructure. Its pioneering products separate, contain, filter, drain and reinforce essential applications in a more sustainable way – making the world a better place. The company was founded in 1981, and has grown through the acquisition of GSE, TenCate and Propex. It is now the largest geosynthetics company in the world, empowered by more than 2,000 talented people. Solmax is headquartered in the province of Quebec, Canada, with subsidiaries and operations across the globe.

Uncompromised quality

Our products are manufactured to strict international quality standards. All our products are tested and verified at our dedicated and comprehensive laboratories which maintain numerous accreditations. We offer our partners a wide scope of testing according to published standards to ensure products delivered to sites meet specified quality requirements.

Let's build infrastructure better

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