

## Geosynthetic clay liners (GBR-C)

Efficient sealing for demanding projects

# Individual product solutions for your requirements

## Simple, economical and safe sealing

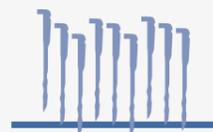
Geosynthetic clay liners (GBR-C) are used as a sustainable waterproofing solution in numerous areas of application. Our NaBento® and Tektoseal® Clay brand products offer maximum safety and long-term impermeability and replace conventional mineral seals reliably and economically.

The innovative waterproofing systems consist of a combination of geosynthetic composites and bentonite, a natural clay material. Three-layer clay minerals such as montmorillonite are used to ensure the required impermeability. These offer a high swelling capacity which, in combination with the geotextile carrier and cover layers, ensures very low water permeability. HUESKER offers bentonite in both powder and granulate form, whereby the form can be selected flexibly depending on the manufacturing process.



## Your flexible modular system for individual product configuration

Choose exactly the components you need.



### Needed

- High internal shear strength
- Erosion-proof fixation of the bentonite



### Sewn

- Very high tensile strength
- Bentonite weight of up to 11 kg/m<sup>2</sup> possible
- High push-through resistance



### Powder

- Extremely low permeability
- Fast sealing effect



### Granules

- Sinkable
- Very good installation conditions (no dust formation, non-slip)



### Sodium bentonite

- High swelling capacity
- High water absorption capacity



### Calcium bentonite

- No loss of performance due to cation exchange
- Low shrinkage cracking
- Resistant to weather conditions such as frost and drought



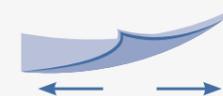
### Sandrauer special composite material

- Unique technology for very high external shear strength
- Improved interaction with contact surfaces such as plastic sealing sheets, fleeces or drainage membranes



### Foil to protect against root penetration

- Effective protection against root penetration
- Internal film for seamless overlaps during installation
- Reliable swelling in direct contact with concrete (increased alkalinity)



### Aerofleece

- Internal fleece for high erosion resistance
- Additional stability and resilience



### Edge scattering

- Ensures production of sealed overlap areas
- Reduced installation effort, as no manual application required
- No welding or other connection technology required

# NaBento IR-C

## Maximum security and performance

NaBento IR-C is our unique and sustainable waterproofing solution for almost any building project. Thanks to its many years of experience in the production of GBR-C, HUESKER has succeeded in developing NaBento IR-C, the best possible clay liner with first-class sealing and installation properties that complies with current recommendations and guidelines. Consisting of geotextile composites, optional root protection and high-quality calcium bentonite, it is the only clay liner that is not subject to natural cation exchange and is therefore a durable, stable and long-lasting sealing solution.



NaBento IR-C

**14-fold** lower  
Long-term permittivity

# Tektoseal Clay NA

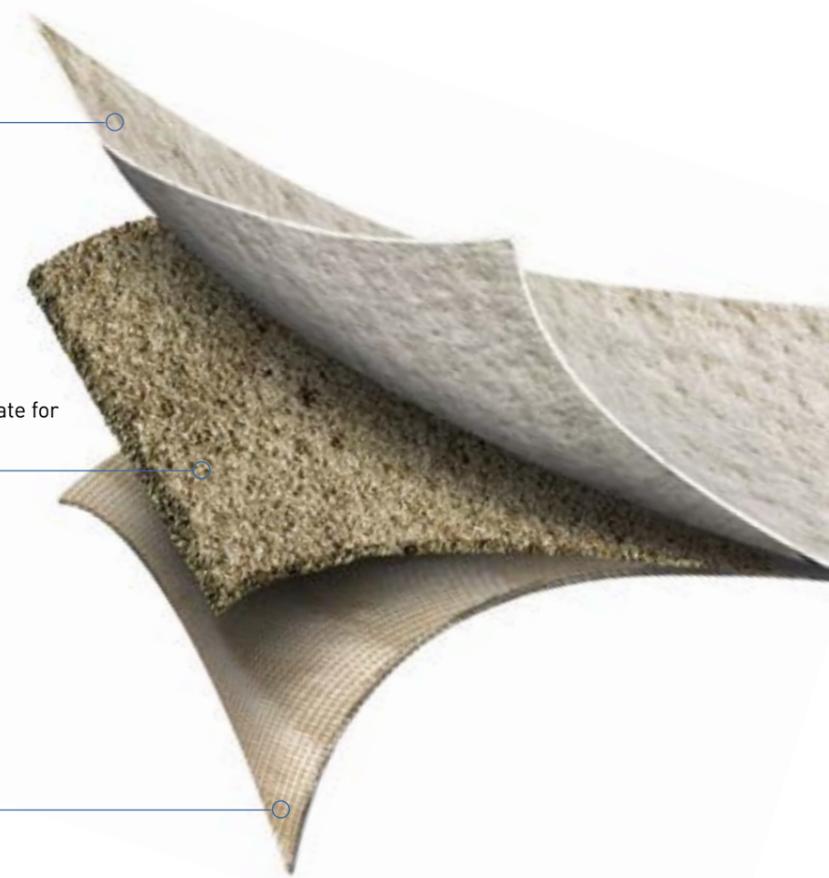
## The classic with added value

Tektoseal Clay is the consistent further development of industrially manufactured sealing systems, taking into account findings from research and development. The extremely swellable and sinkable clay seal is a highly developed, perfectly coordinated multi-component system made of extremely resistant geosynthetics and sodium bentonite granulate. The individual components are processed by modern production machines using a special precision needling process to form a full-surface, homogeneous sealing membrane.

**Non-woven fabric**  
as a top layer for high flexibility and protective effectiveness

**Sodium bentonite**  
Up to 7 kg/m<sup>2</sup> of sodium bentonite granulate for optimum impermeability and sinkability

**High tensile strength fabric**  
as carrier material for maximum load capacity



Tektoseal Clay NA

**2-fold** lower  
Long-term permittivity

\*According to the LAGA suitability assessment, the long-term permeability is lower than required by the Landfill Ordinance. Based on values from our own monitoring by an accredited test laboratory.

# Areas of application

## Wide range of applications

Geosynthetic clay liners offer numerous technological and economic advantages, which is why they have established themselves as alternative sealing materials in practice.

- Significantly lower weight and volume compared to conventional mineral gaskets
- Significant reduction in transportation costs on the construction site - high-quality, prefabricated sealing solution with simple installation technology
- Extremely resistant to major deformations such as expansion and compression when installed
- Quick installation that is largely independent of weather conditions.



### Landfill construction

- Surface sealing
- Improvement of the geological barrier



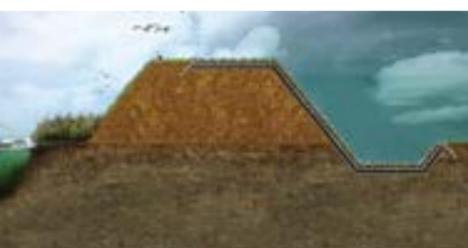
### Groundwater protection

- Road/rail road construction in water protection areas (e.g. according to RiStWag)
- Rainwater retention basin
- Storage ponds
- Landscaping
- Airfield construction



### Remediation of contaminated sites

- Surface sealing
- Basic seals



### Hydraulic engineering

- Dams and dikes
- Flowing and standing waters
- Drainage ditches

Scan now!  
Find out more about saving CO<sup>2</sup>  
through geotextile sealing



Do you have a requirement to fulfill? HUESKER offers the solution! With our geosynthetic clay liners and thanks to our many years of experience, we can optimally implement the requirements of your construction project!

For more information, please contact us at [info@huesker.de](mailto:info@huesker.de)

# Project examples



### Improvement of existing embankment cover

Austria | In order to improve the sealing of the Hettegger landfill, the existing cover was replaced by an alternative structure approved in accordance with the DVO. By reducing the layer thickness from 2.40 m to approx. 1.30 m, the calculated permeability was reduced from  $1 \times 10^{-9}$  m/s to  $7 \times 10^{-11}$ . A NaBento calcium bentonite mat, a drainage mat and a Fortrac® geogrid were used.



### Dyke renovation on the Rench flood channel

Germany | NaBento sodium bentonite mats were installed over the entire surface of the embankment on the water side during the rehabilitation of the 14.7 km long Rench flood channel. To prevent the dyke from overflowing, the areas in need of renovation had to be raised by approx. 1 m and the trapezoidal profile had to be reinforced overall. The renovated, higher dike body has a durable functional seal with significantly improved compactness.



### Securing the K20 contaminated site

Austria | Covering a contaminated site with an irregular surface structure. The innovative sealing system consists of a NaBento calcium bentonite mat and a Tektoseal Active AC activated carbon mat, an LDPE membrane with an integrated CHC-proof aluminum layer and a hollow stud drainage element with a filter fleece laminated on one side, whereby the activated carbon mat cleans the pumped out and contaminated water.



### Innovative sealing system for noise protection tunnels

Austria | A 1.5 km long enclosure was built over the A 10 motorway as noise protection for the municipality of Zederhaus. Tektoseal Clay NA 5000+ is laid directly on the concrete as the first layer of the double waterproofing system, as a secondary waterproofing component. The primary sealing layer made of PE-HD guarantees lasting safety, which is further enhanced by the secondary self-healing sealing layer Tektoseal Clay NA 5000+. The innovative and sustainable sealing system is also a very economical solution thanks to its simple and efficient installation.



Click here for the video →



Click here for the video →

NaBento®, Tektoseal® Clay and Fortrac® are registered trademarks of HUESKER Synthetic GmbH. HUESKER Synthetic is certified according to ISO 9001, ISO 14001 and ISO 50001.



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