



Engineering with Geosynthetics

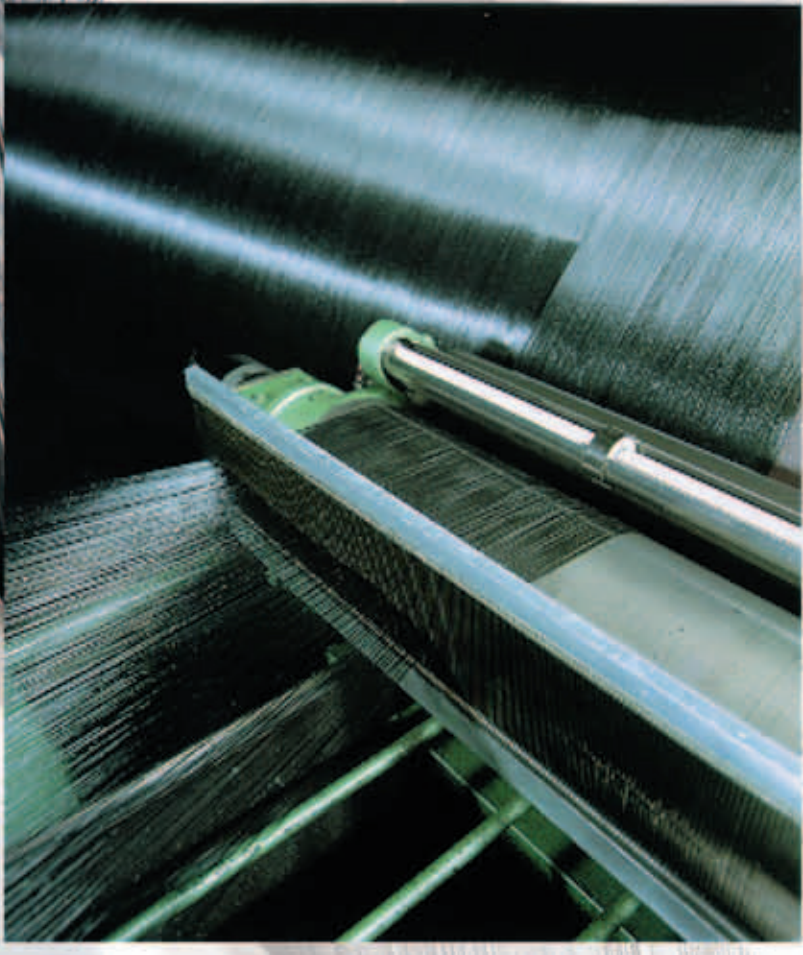
HUESKER Synthetic offers a wide, market orientated range of synthetic wovens, nonwovens, geogrids, composites and clay liners as well as knitted fabrics for civil engineering applications. Raw materials such as polyester (PET), polyvinylalcohol (PVA), polyethylene (PE), polypropylene (PP), polyamide (PA), or aramid (Ar) are processed, using modern, efficient production facilities. Depending on the problem and the requirements it is possible to select from this broad range a suitably tailored geosynthetics, obtaining the optimum technical and economical solution, without compromise; regardless of whether the problem involves separation, protection, drainage, sealing, filtration, containment or reinforcement.

All HUESKER products are the result of many years experience in the development and manufacture of textiles for technical applications; linked with close consultation and co-operation of customers, research institutes and consulting engineers.

All technical product data presented in data sheets are based on ISO or/and EN standards.

The quality assurance system of HUESKER Synthetic GmbH, Gescher, is DIN EN ISO 9001:2000 certified. The HUESKER testing laboratories are DAR accredited for a range of standard geosynthetic index tests in accordance with DIN EN ISO/IEC 17025.

This review of the product range cannot be comprehensive and can only provide you with an impression of the potential. If you require more detailed information or you would like advice opposite your specific requirements, please do not hesitate to contact us.

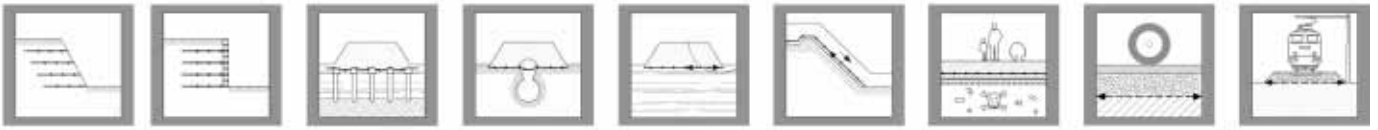


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Stabilenka® is a registered trademark of Colbond b.v.

NaBento® is a registered trademark of NABENTO Vliesstoff GmbH

Fortrac®



Fortrac®-Geogrids for soil reinforcement

These flexible geogrids for soil reinforcement are manufactured from high modulus, low creep, synthetic yarns with a protective polymeric coating. **Fortrac®** is produced in a range of standard types for uniaxial and biaxial loads in a wide range of tensile strengths.

HUESKER is specialised in the production of non-standard **Fortrac®** geogrids for project specific requirements, thus offering the best possible design solutions.

Fortrac® is primarily used for reinforcing retaining structures, slopes and embankments, including piled embankments. However, **Fortrac®** can also be used to stabilise roads and other trafficked surfaces, or even to address sinkhole problems. In landfill construction, **Fortrac®** geogrids reinforce the mineral seals and prevent slope slippage.



HaTelit®



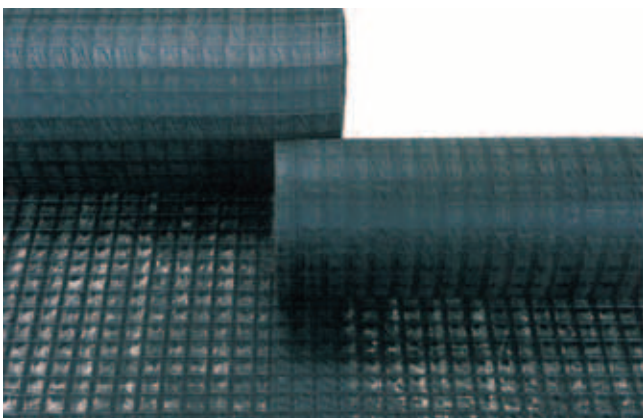
HaTelit® asphalt reinforcement

HaTelit® is a flexible polyester reinforcement grid with a bituminous coating to ensure effective adhesion to the asphalt layers. The coating contains over 60% bitumen. **HaTelit® C** also has a thin, high bond strength, nonwoven layer, making installation quicker and more economical without affecting the bond between the layers.

This asphalt reinforcement grid used to prevent and/or delay reflective cracking has proved its worth in service for

over 30 years. **HaTelit®** increases the tensile strength of the asphalt overlay, and under load ensures the even distribution of horizontal forces over a large area. Cracks are bridged and the appearance of reflection cracks is significantly delayed.

When correctly installed, roads reinforced with **HaTelit®** remain intact for many more years than conventionally resurfaced roads.



Fornit®



Fornit® – biaxial geogrid for subbase reinforcement

Fornit® is an innovative and economical biaxial high strength polypropylene geogrid for base reinforcement and stabilisation.

As a result of its engineered mesh sizes, Fornit® provides a unique boundary between subgrade and subbase. The aggregate is bound into a restrained bearing layer, protected from short term dynamic loading – particularly during the construction phase.

Fornit® geogrids can be combined with a mechanically bonded nonwoven for additional separation and filter functions.

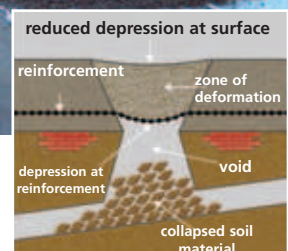
Stabilenka®



Stabilenka® woven fabrics for reinforcement and separation of soil

Stabilenka® is a high-modulus polyester woven that permanently absorbs high tensile loads at low strains. This makes it particularly suitable for applications requiring earthwork soil reinforcement where a low deformation is essential.

Such applications include the reinforcement of embankments on soft soils, the protection against sinkholes and reinforcement of piled embankments. Another application is the reinforcement of mineral sealing layers in landfill construction. Stabilenka® also increases the subsoil bearing capacity, thus can also be used for stabilising groynes, breakwaters and causeways. HUESKER Synthetic produces Stabilenka® types in a variety of tensile strengths up to, and over, 1000 kN/m.



Comtrac®



Comtrac® – Geocomposite for reinforcement, separation and filtration of soil

Comtrac® is a high modulus knitted reinforcement geotextile, which can be combined with a nonwoven. A carefully chosen combination of Comtrac® plus nonwoven can be used to provide properties that the individual products alone do not offer.

An innovative production process results in a product whose load-bearing yarns lie flat in the weave, that reacts instantly to tensile loads and that absorbs large forces with low elongation.

Thus Comtrac®, with very high strength options up to 2000 kN/m, opens up completely new and interesting possibilities for the design engineer.



Incomat®



Incomat® – Construction system for slope and bed protection

Incomat® mattresses consist of two bonded high-strength woven layers made of polyamide and/or polyethylene and form a flexible formwork that can be filled with concrete, mortar, sand or any other pumpable materials.

Spacers can be used to vary mattress thickness from 50mm to 600mm. Incomat® is used for reinforcing the beds and banks of canals and rivers, and in coastal protection. In landfill construction, lining systems can be used in combination with Incomat mattresses to provide effective protection against mechanical damage from stone in the drainage layer.

For the various different applications, HUESKER Synthetic produces two main types of Incomat® mattress: a permeable, flexible mattress, and an impermeable mattress.



HaTe®-wovens



HaTe®-wovens and meshes for stabilisation, separation and filtration

HUESKER Synthetic has produced wovens and mesh fabrics from synthetic yarns since the early 60's. They can be made from mono- or multifilament yarns, and from tape or twisted yarns. The main raw materials used are polypropylene, polyethylene and polyester. Additionally some products - depending on the application - receive a special coating. Naturally, many combinations of different raw materials are available.

Wovens are used in ground and hydraulic engineering for separation, filtration, reinforcement and containment (e.g. sandbags).

Woven meshes are used primarily for filtration. From this variety of wovens and meshes HUESKER Synthetic has designed special product groups for specific applications.



HaTe® nonwovens and reinforced nonwovens



HaTe®-nonwovens and reinforced nonwovens for separation, filtration, drainage and protection

HaTe®-nonwovens can be used in a wide variety of applications in earthworks and ground engineering, road and tunnel construction, hydraulic engineering and landfill construction. They perform a number of important functions, including separation, protection, filtration and drainage.



The properties of these nonwovens, should be suited to their special function.

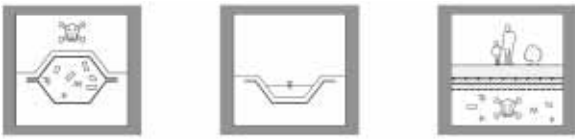
This begins with the selection of the correct raw material. HUESKER mainly uses polypropylene, polyethylene and polyester staple fibres, needle-punched or thermally bonded.

The reinforced nonwovens were designed especially for use in landfill construction and tunnel applications and perform the important task of protecting the lining systems. A growing application is the use as sinkmats in hydraulic engineering.

The various nonwovens are available in weights, ranging from 1000 g/m² to 3000 g/m².

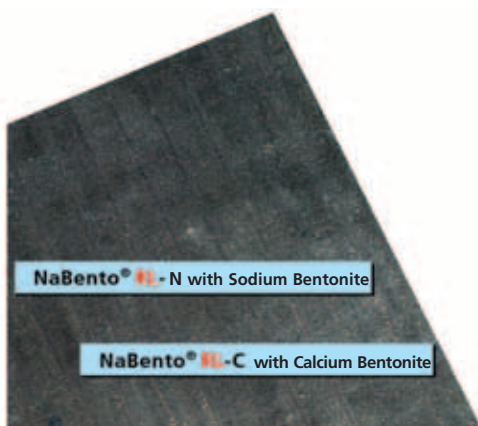


NaBento®



NaBento®- geosynthetic clay liner for sealing

NaBento® is a geosynthetic clay liner providing a safe and economic alternative to conventional mineral seals for many applications. Examples being surface sealing of landfill sites, sealing alongside roads and in groundwater preservation zones, the construction of settling ponds and storm water tanks, or the sealing of river dikes.



The sandwich-type composite material with a thickness of only 10 mm comprises various textile supporting layers encapsulating a high-grade bentonite layer. The principle component of the bentonite used in NaBento® is the clay mineral montmorillonite.

Ringtrac®



Ringtrac®- tube fabric for reinforcement and soil containment

This tube fabric can be produced in various diameters up to 1m without any sewn, welded or glued joints in the ring direction.

With Ringtrac® tube fabrics, geotextile encased sand columns (GEC) can be produced, offering an economic alternative foundation system for embankments on soft soil with controlled low settlements.



