

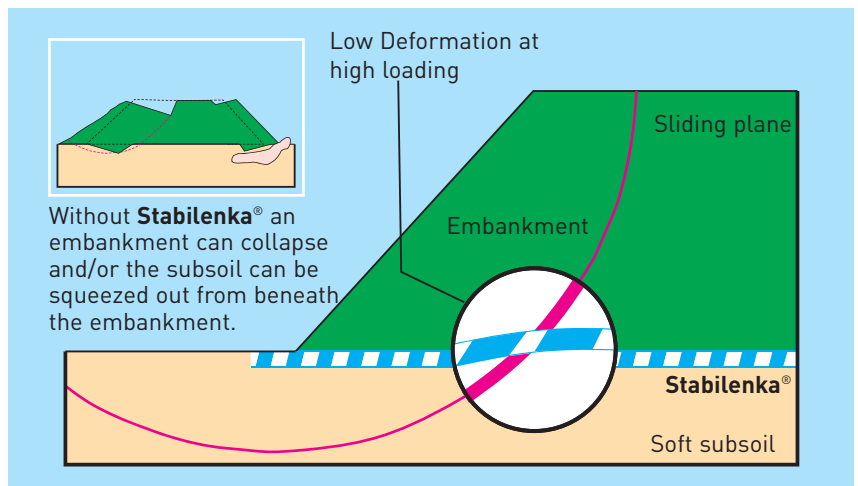




## Soil Reinforcement with Stabilenka®

When a high tensile strength geosynthetic is installed in soils which have been placed and compacted in layers, it forms a composite of geosynthetic and soil. The geosynthetic acts as a reinforcement due to its high frictional properties and its ability to absorb tensile forces.

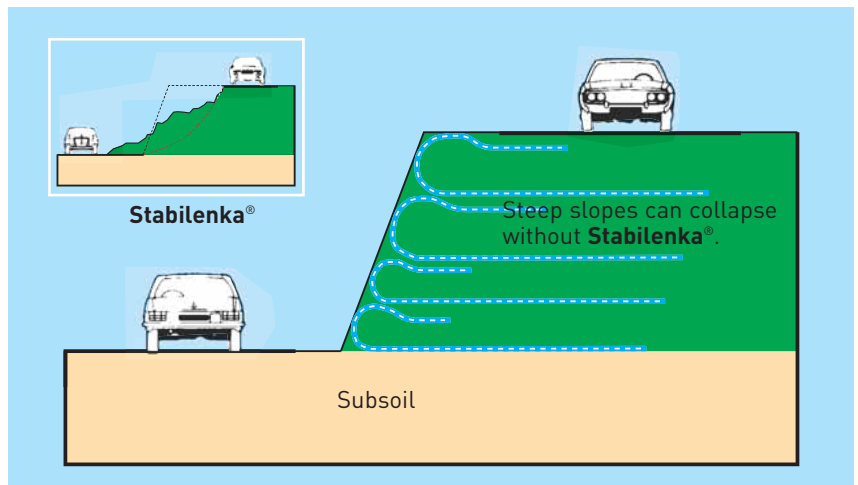
**Stabilenka®**, a fabric of great tensile strength produced from high modulus polyester, withstands high tensile forces even at low elongation. Thus, it is suitable in many applications where soil reinforcement is required in earthworks having small, acceptable deformations.



Embankments with **Stabilenka®** remain stable. Details shows fabric deformation during initial settlements.

## Embankments on Soft Subsoil

When constructing embankments on soft subsoils such as peat or clay, there is often a risk of bearing capacity failure when construction rate is rapid and the shear resistance of the subsoil is exceeded. By installing **Stabilenka®** between the subsoil and embankment fill, the soil's bearing capacity is greatly increased. **Stabilenka®** thus guarantees the external stability of the embankment until the subsoil is finally consolidated and an adequate soil shear strength is achieved.



Retaining structures of soil are easily constructed with **Stabilenka®**.



## Stabilenka® in Hydraulic Engineering

Soil bearing capacity can also be quickly improved with **Stabilenka®** for hydraulic engineering projects such as the construction of dikes, breakwaters or jetties. **Stabilenka®** can be produced to size in large reinforcement mats and then simply laid by ship or by cable-laying frames. Large bags or tubes can also be made of **Stabilenka®** which can be filled with sand and are mainly used to prevent soil erosion.



## Reinforcement in Landfill Construction

The mineral sealing layers of a waste disposal site can only accept loadings that produce low strains in order to avoid tracking. **Stabilenka**<sup>®</sup>, when properly designed and installed below the sealing layer, can prevent unacceptably high strains during settlement of the subgrade or waste. **Stabilenka**<sup>®</sup> can also be used as reinforcement for steep slopes of a landfill.

## Reinforced Earth Retaining Structures

When retaining structures or steep slopes are required at angles greater than permissible from the shear strength of the soil, stability can be achieved by reinforcing with horizontal layers of **Stabilenka**<sup>®</sup>.

Wrap-around walls where **Stabilenka**<sup>®</sup> forms the facing can be landscaped and planted. When concrete elements are used for fascia design, **Stabilenka**<sup>®</sup> is usually installed only as reinforcement strips in the soil.



## Economical Construction with Stabilenka<sup>®</sup>

If **Stabilenka**<sup>®</sup> is used for reinforcing soft, low-bearing capacity subsoils, there is no need for soil excavation, conventional soil stabilization or long consolidation periods delaying construction. Even on low shear strength subgrade **Stabilenka**<sup>®</sup> can be used to construct safe retaining structures.

In all cases, one saves time and money. **Stabilenka**<sup>®</sup> is easy to transport and can be installed simply and easily without specialist equipment.

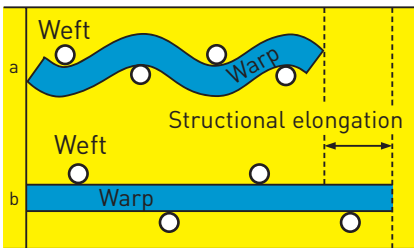
# Stabilenka®

## High Strength / High Quality Woven Geosynthetic

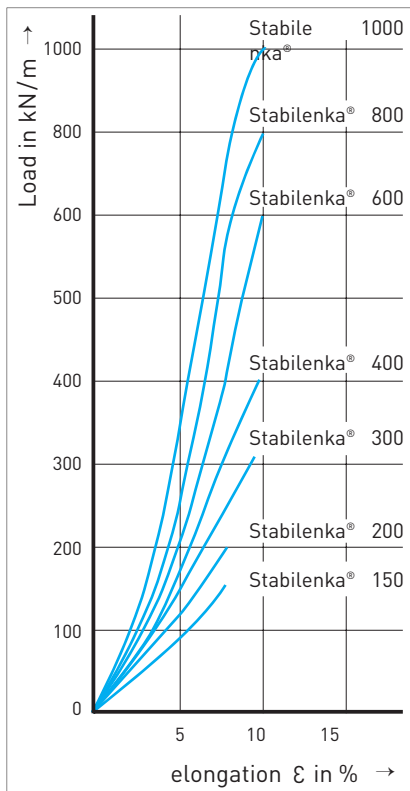
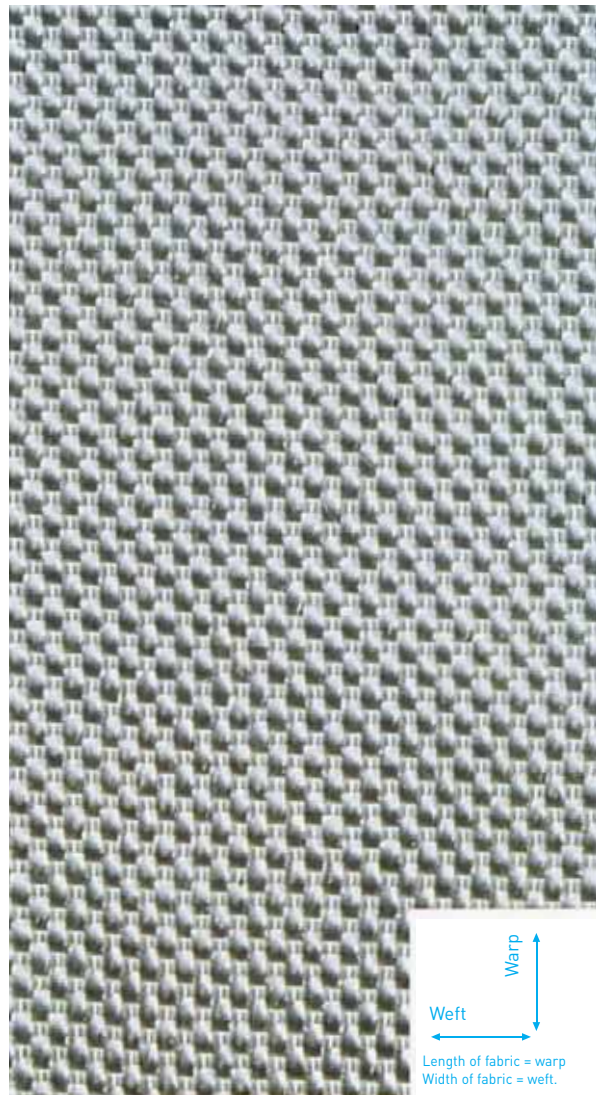
**Stabilenka®** is a high quality woven fabric made from polyester yarns in the longitudinal (warp) direction and polyamide, or optionally polyester, in the transverse (weft) direction. It is available in nine standard types with varying tensile strengths up to 1000 kN/m in the warp direction.

By using high modulus polyester multifilament yarns in a patented straight warp process, **Stabilenka®** always maintains high tensile forces at low elongation. As polyester yarns have very low creep potential, creep strain is limited to 1% after two years.

**Stabilenka®** is permeable and provides high long-term resistance to microbial, chemical and mechanical damage.



Conventional weave (a) and straight - warp - weave (b)



Load-elongation curve of **Stabilenka®** standard types

## Stabilenka® a reliable Construction Material

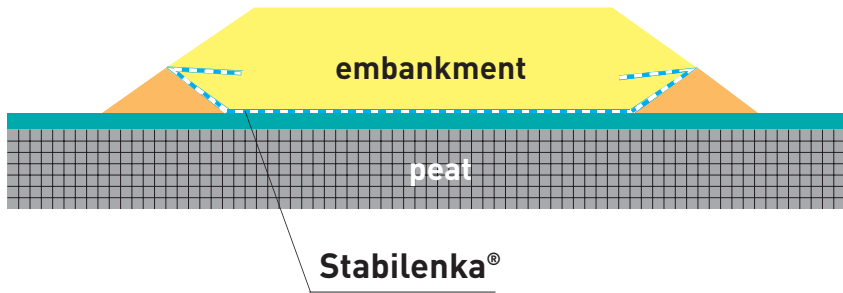
Since its first installations in 1974, **Stabilenka®** has proved its high standard of quality and industry acceptance in hundreds of projects. Long term records have been kept on numerous projects to obtain test data and experience for the design and computation of new soil foundation structures utilising **Stabilenka®**.

Detailed project studies and technical information leaflets are available for engineering design with **Stabilenka®**.

**Stabilenka®** is a joint product from Colbond b.v. and HUESKER Synthetic GmbH; together, they provide high quality geosynthetics as well as professional assistance in the project planning stage and on-site assistance when required.

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

# embankment on soft ground with a **Stabilenka®** geosynthetic reinforcement



reinforcement with **Stabilenka®**150/45 for the access to the Jever bypass, Germany

additional reinforcement to existing trenches



reinforcement with **Stabilenka®** 300/45 for the bypass embankment

