

Advantages of
SECUTEX®
Geotextile separation and filter nonwovens



Material science - Engineering - Innovation

**SECUTEX® - The three-dimensional
needle-punched fibre matrix**



SECUTEX®

Secutex® is a single-layered, mechanically bonded, nonwoven geotextile. Some products are additionally calendered. Secutex® is used for the separation of soil layers with different grain sizes as well as to establish the missing filter stability.



- ✓ excellent filtration properties
- ✓ long-term hydraulic performance
- ✓ high elongation and therefore adjustable to soil deformations
- ✓ very good interface shear resistance
- ✓ high puncture resistance
- ✓ resistance to chemical and biological degradation
- ✓ robust against on-site conditions
- ✓ quick and cost-effective installation
- ✓ highest quality control standards

Since the early 1960s, nonwoven geotextiles have been used in various fields of civil engineering for separation, filtration, protection and drainage applications. Since then, numerous national and international guidelines have been published that enable project-specific specifications and product selection, based on established performance requirements.

Multifunctional Product

In filtration applications such as hydraulic engineering and drainage systems, Secutex® nonwoven geotextiles are used to retain soil particles while allowing the passage of liquids through the filter media.

Powered by Performance

Needle-punched (mechanically bonded) nonwovens are robust geotextiles capable of withstanding harsh installation conditions and challenging construction loads. Their unique flexibility and elongation properties combine to provide high puncture resistance without sacrificing frictional or filtration properties. When properly selected, needle-punched nonwovens can provide superior long-term filtration and achieve higher interface friction angles than comparably weighted nonwovens manufactured through alternative processes.

Needle-punched nonwovens can be employed in many geotechnical fields, including landfill, civil and hydraulic engineering as well as groundwater protection for separation, filtration, drainage and protection.





ADVANTAGE 1

When applying additional earth layers over a soil with a poor bearing capacity, the elongation characteristics of the nonwoven geotextile will minimise damage during the installation process. To ensure the separation function under high rutting, Secutex® nonwoven geotextiles with high elongations are the first choice.

ADVANTAGE 2

As with mineral filter layers, soil retention capacity also plays an important role when using Secutex® nonwoven geotextiles. Geotextile filters must be engineered such that the mechanical effectiveness and hydraulic filter effectiveness (water discharge without loss of pressure) are equally achieved.

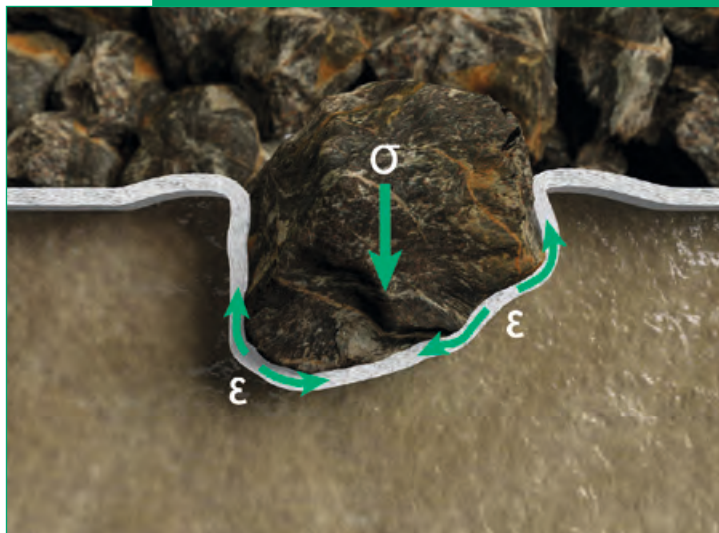
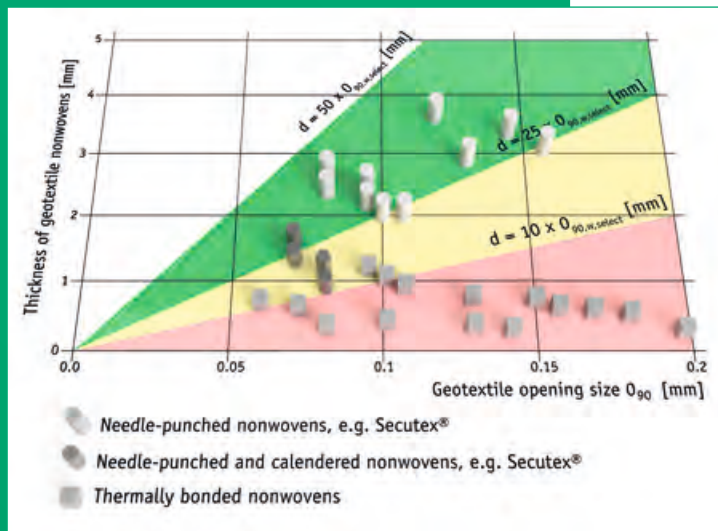


Figure 1
Site condition
and stress/strain
impact on Secutex®
nonwoven

σ = Load on stone
ε = Strain

The high elongation capacity of Secutex® nonwoven geotextiles ensures excellent resistance to damage. This characteristic of Secutex® products allows them to easily accommodate irregular or soft subgrades. Especially when covered with stone material, Secutex® nonwoven geotextile fibres are reoriented around the stones, preventing damage to the nonwoven structure.



Unique to the manufacturing process, needle-punched Secutex® nonwovens can be produced in greater thicknesses than other bonded nonwovens. Hence they can be produced in compliance with the recommended minimum geotextile thickness $[d]$ of $25 \cdot O_{90} < d < 50 \cdot O_{90}$ („DVWK guidelines, Vol. 221/1992“) thereby ensuring the long-term filter effectiveness of the nonwoven.

Figure 2
Recommended
opening size
and thickness
correlation
(range: green -
recommended;
yellow -
application related
possible; red -
critical) for a filter
geotextile (DVWK,
Vol. 221/1992)

SECUTEX®



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free of charge
the Secutex®
binder

Secutex® Applications:

- Railways
- Landfills
- Road constructions
- Environmental protection
- Pipelines
- Infrastructure engineering
- Tunnels
- Hydraulic engineering
- Access roads
- Windfarm parks



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