Basetrac®

Base course reinforcement - simplified by Huesker

HUESKER
Ideen. Ingenieure. Innovationen.

The challenge
Base course reinforcement

Soil stabilisation measures are necessary wherever soils with inadequate bearing capacity are required to carry temporary or permanent vehicular loads. Alternating high loads on soils of varying softness places different demands on base courses. The objective is the same for all applications:

- Increasing the load-bearing capacity
- Improved trafficability
- Avoiding the loss of base course material

Solution
Geosynthetics

Geosynthetics have proven their worth in base course stabilisation. They offer resistance to mechanical stress, and offer decisive advantages, particularly from economic and ecological terms. They provide:

- Improved trafficability
- Increased load-bearing capacity
- Separation of base course material and subgrade
- Reduction of the required base course thickness
- Maximising service life
- Reduction in rutting
- Reduction in maintenance costs

Permanent road

1

TYPES
- Classified road construction
- Car Parks
- Industrial and logistics facilities

SPECIAL FEATURES
- Long service life
- High resistance to deformation

Temporary roads

2

TYPES
- Access routes
- Haul roads

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SPECIAL FEATURES
- Later removal, where necessary
- Occasional high loads over short periods
- Unbound surface course

Work platform

3

TYPES
- Crane bases, e.g. for wind turbines
- Foundation surfaces

SPECIAL FEATURES
- High temporary loads
- High risk in the event of failure
- High resistance to deformation
- Required special design

Railroad construction

4

TYPES
- Rehabilitation
- New build

SPECIAL FEATURES
- High dynamic loads
- Specific regulations
- Long service life
- High resistance to deformation

Work platforms

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Railroad construction

Temporary roads

Permanent traffic area

Classic
Areas of application

Traffic areas permanently bear large and changing loads.
The special features of each application must be taken into account when constructing the base course.

Function and effect
of geosynthetics

Geosynthetics perform a key function in the base course by increasing bearing capacity and improving trafficability.

Reinforce

- Membrane and confinement effects
- Load distribution
- Increase in ground failure safety

Separate

- Separation of base course and subgrade
- No loss of base course into the soft ground

Filter

- Avoidance of fine particle infiltration
- Pressure-free water drainage
- Dynamic filter stability

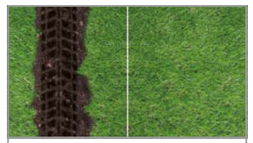
of load distribution plates

Load distribution

- Ensuring trafficability
- Without the use of base course material usable

Soil protection

- Avoidance of soil compaction



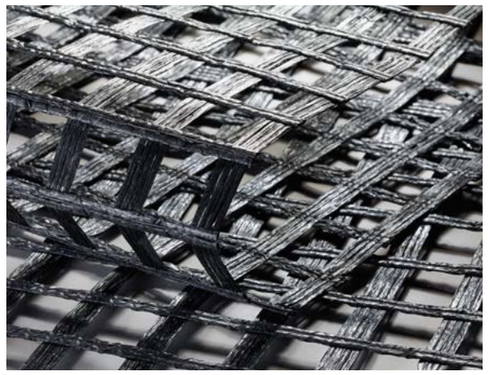
Surface protection

- Temporary protection of sensitive areas

The **Basetrac** product family

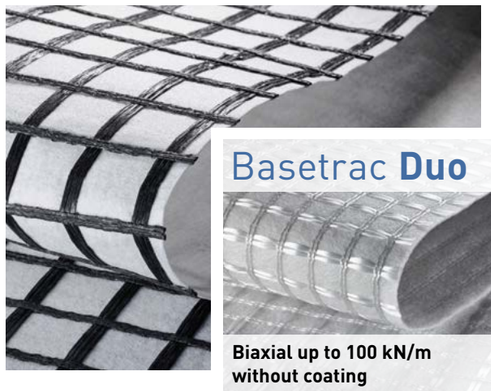
With its four product types, Basetrac offers a solution for the most common base course requirements, thereby combining reliable performance with high costeffectiveness.

Basetrac **Grid**



Product type	**Woven geogrid**
Material	**PP, PET, PVA**
Standard tensile strengths	**Biaxial up to 80 kN/m**
Function	**Reinforce**
Coating	**Polymer**

Basetrac **Duo-C**



Product type	**Composite material made of geogrid and nonwoven**
Material	**PP, PET, PVA**
Standard tensile strengths	**Biaxial up to 100 kN/m**
Function	**Reinforcing, separating, filtering**
Coating	**Polymer**

Basetrac **Duo**

Biaxial up to 100 kN/m without coating

Basetrac **Woven**

Product type	**Ribbon fabric**
Material	**PP**
Standard tensile strengths	**Biaxial up to 100 kN/m**
Function	**Reinforcing, separating, filtering**
Coating	**None**
GRK	**3-5**

Basetrac **Nonwoven**

Product type	**Geotextile nonwoven**
Material	**PP, mixed fibre**
Standard tensile strengths	**-**
Function	**Separating, filtering**
Coating	**None**
GRK	**3-5**

Simply choose the **best solution**

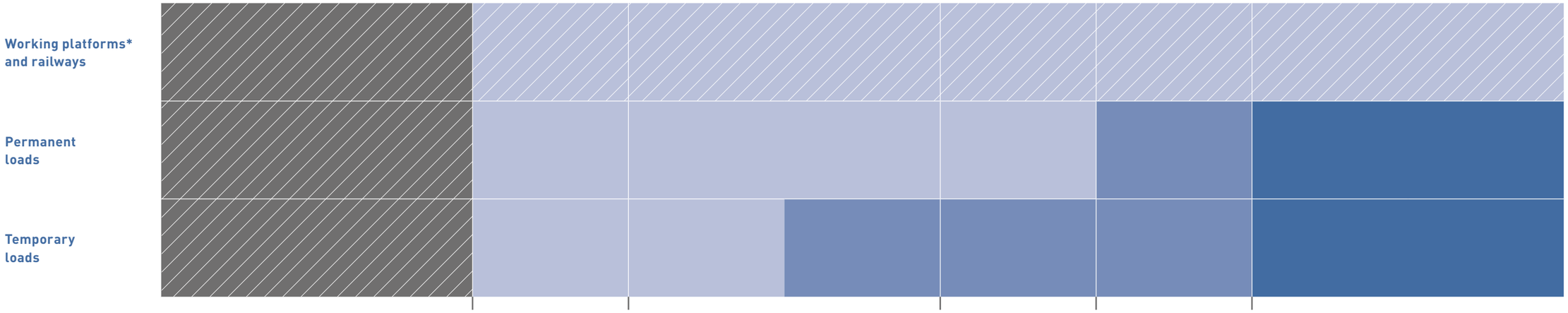
The Basetrac base course concept

With Basetrac, Huesker not only offers you the most economical solution

The new Basetrac base course concept makes it easy for you to select the right product for all applications with normal loads. Our BaseCalculator software selects the correct product for your application - with just a few clicks - taking into account all the relevant factors.

Simply find the best solution: **www.HUESKER.co.uk/Basecalculator**

CONTACT WITH HUESKER RECOMMENDED



*Valid for low loads caused by normal construction site traffic and tracked construction machinery.
Special verifications are required for high loads.

This is a schematic representation that does not contain any binding statement on the suitability of the products for your specific application.
Please contact us for individual advice!

Rigid or **flexible grids?**

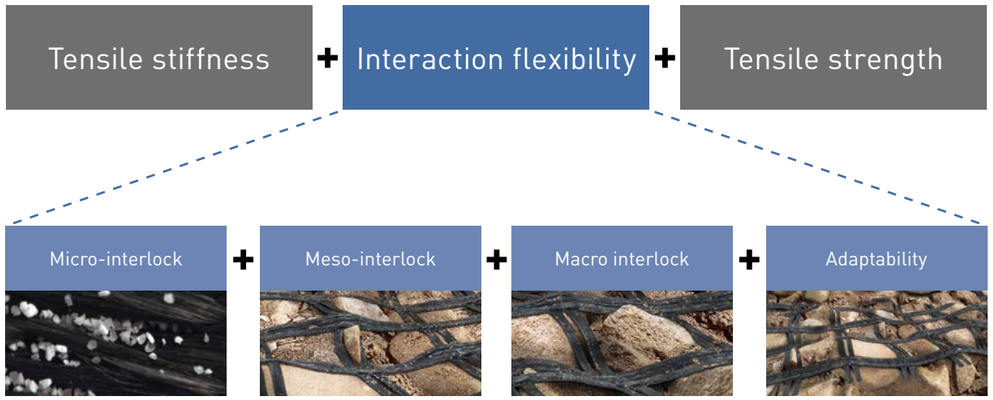
The benefits of composite flexibility

The purpose of a geogrid is to improve the mechanical properties of soils. In order to absorb forces with low deformation, the geogrid requires a certain degree of tensile rigidity. However, the grid must not be too rigid, otherwise it will hinder the ground in absorbing its own force.

In order to compensate for force deficits in the structure, certain tensile strengths are required. Basetrac geogrids are characterised not only by good tensile strength and rigidity, but also by very high composite flexibility - a property that only flexible geosynthetics possess.

Good composite flexibility means a perfect blend of macro, meso and micro interlocking as well as high adaptability to the soil. This significantly improves the bond behaviour and the interaction between soil and reinforcement.

(Lackner, C. [2012], Prestressed reinforced soil - Concept, investigations and recommendations, dissertation, TU Graz)



Rough-surface geogrids form a microscopic interlock with soil particles (friction).

A good surface texture of the geogrid supports the interlocking of the geogrid ribs and soil particles.

The mesh openings allow the stones to interlock with the geogrid.

Flexible geogrids have the ability to adapt to the unevenness of the ground during/after compaction.

- Excellent adaptability
- Reduced number of voids
- Activation of tensile forces during installation
- Reduced installation damage
- Formation of a flexible overall system with the soil

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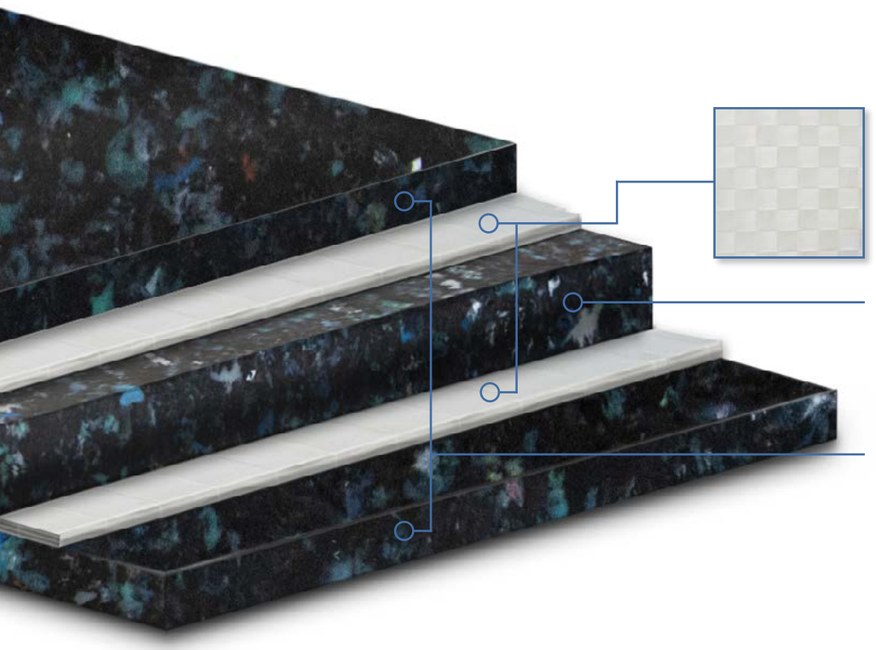
Basetrac Plate
Road plates

Innovation thanks to Neolaminate®

When constructing cable routes, wind farms or temporary access roads, two things must be ensured: unrestricted trafficability and reliable protection of the ground. Deep ruts and the associated soil compaction not only hinder construction site traffic, they also jeopardise the long-term functionality of sensitive areas.

In addition, complete dismantling is required at the end of the project - ideally with materials that can be reused or recycled. The modern Basetrac Plate load distribution plate offers a future-proof answer to this: it combines maximum load-bearing capacity with uniquely low weight, can be installed efficiently and enables clean dismantling - without any additional maintenance.



Neolaminate fibre reinforcement
to increase the structural integrity and load-bearing capacity with minimum dead weight

100 % recycled plastic core*
for a resource-saving future

Upper and lower protective layer*
for maximum load capacity and safety on any surface

*all plastic layers are 100% recycled

What makes our panels strong

Neolaminate fibre reinforcements consist of thermoplastically impregnated UD tapes with optimally aligned fibre orientation for maximum force absorption. The complete fibre impregnation and reduced movement ensure high fatigue strength and optimum performance.

The Basetrac Plate is made **entirely** from **recyclable** materials and can be recycled after use. Recycled plastics are already used in production. This saves raw materials and reduces environmental pollution.

Up to 80 % **weight savings** compared to conventional load distribution plates ensure less transportation effort, greater efficiency on the construction site and noticeable relief for man, machine and subsoil.

With a **plate thickness** of just 23 mm, the Basetrac Plate is significantly slimmer than conventional solutions while offering better performance. The reduced material thickness saves space and improves handling without compromises in functionality.

The Basetrac Plate shows **no plastic deformation** even under intensive and prolonged stress. It can be reliably reused in your next project without the need for post-treatment.

Proven **Effective**

Protection that works visibly

Basetrac Plate in use: Environment without protection shows massive compaction and ruts

In a comprehensive series of tests, Clausthal University has demonstrated that the Basetrac Plate works reliably even under a wide variety of ground conditions. Even under the heaviest loads, construction site traffic remains unhindered, efficient and safe and even trafficability is guaranteed, without any discreet ruts.

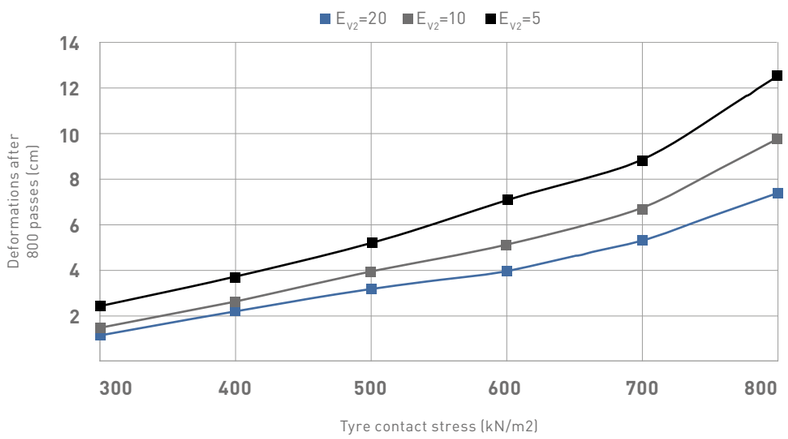
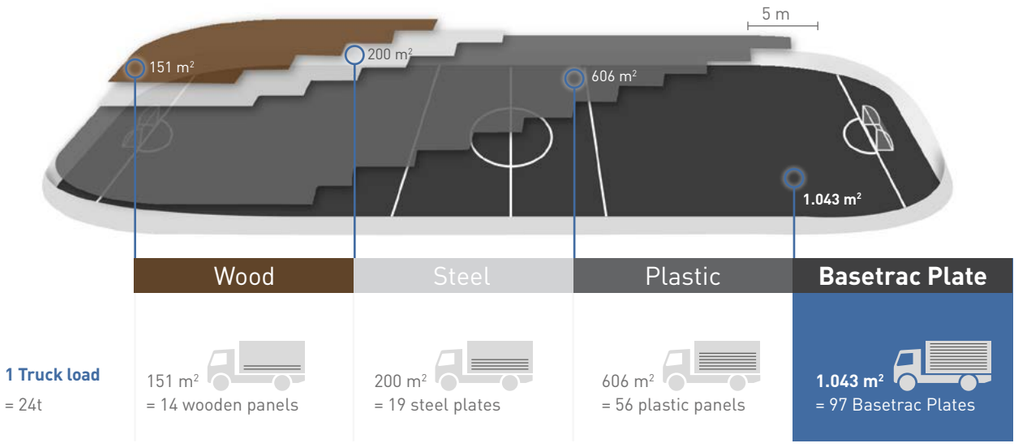


Illustration of the deformation curves after 800 passes as a function of the contact surface tensions between 300 and 800 kN/m² and three different substrate stiffnesses (EV2 = 5, 10 and 20 MN/m²).

The advantages at a glance

With just one truckload, an area of 1,043 m² can be covered with Basetrac Plate. This corresponds to the size of an ice hockey pitch and covers up to seven times more area than conventional solutions



*For standardised panel size: 6,000 x 1,800 mm

Simple and time-saving handling on site

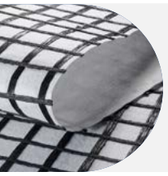
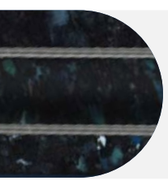
Less CO_2 and tyre abrasion thanks to reduced transportation

Noticeable cost savings through efficient logistics

100 % recycled and completely recyclable

Basetrac - **always a good choice**

Compare our solutions and find exactly the right one for your project!

	Separation	Filtration	Reinforcement/ Load distribu-tion	High interaction flexibility	Simple dismantling	Can be used without base course material
Basetrac **Grid**	(+)	○	+	+	+	○
 Basetrac **Duo-C**	+	+	+	+	+	○
Basetrac **Woven**	+	+	+	+	+	○
Basetrac **Nonwoven**	+	+	○	○	○	○
 Basetrac **Plate**	+	○	+	○	+	+

Simply find the best solution:
www.HUESKER.co.uk/Basecalculator

The **BaseCalculator**

The BaseCalculator software available online guides you easily to the recommended Huesker solution. With just a few clicks, you will receive suggestions for selecting the right geosynthetic and information on how to save on base course material. Huesker offers you this service in a simple and uncomplicated way, i.e. free of charge and without time-consuming registration.

For applications with particularly high requirements, for example in railway construction or for working platforms, we recommend consulting with HUESKER directly.

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HUESKER Synthetic is certified according to ISO 9001, ISO 14001 and ISO 50001.

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