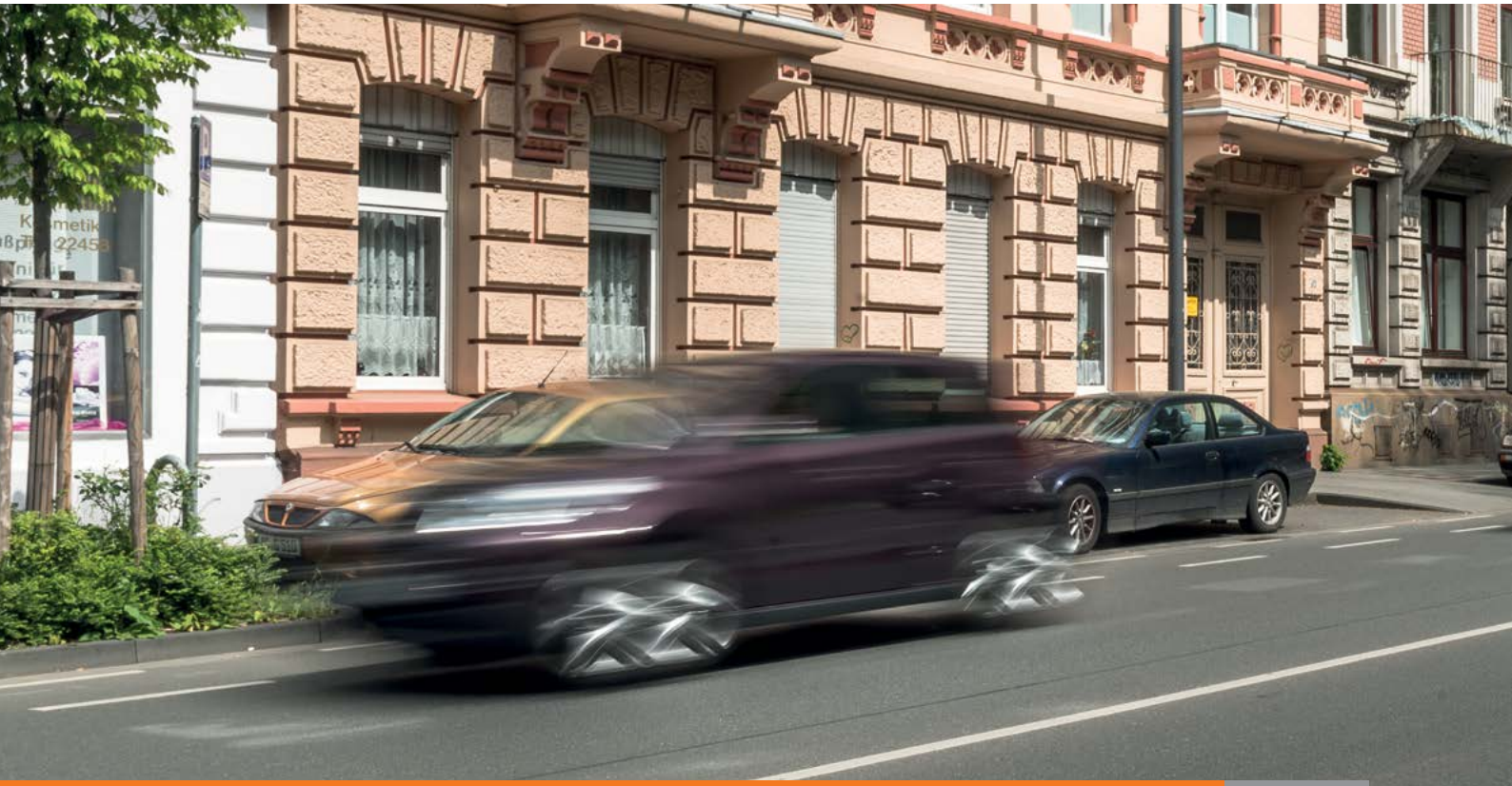
Asphalt Reinforcement

Geosynthetics for Roads and Pavements

HUESKER
Ideen. Ingenieure. Innovationen.



Not another construction site!

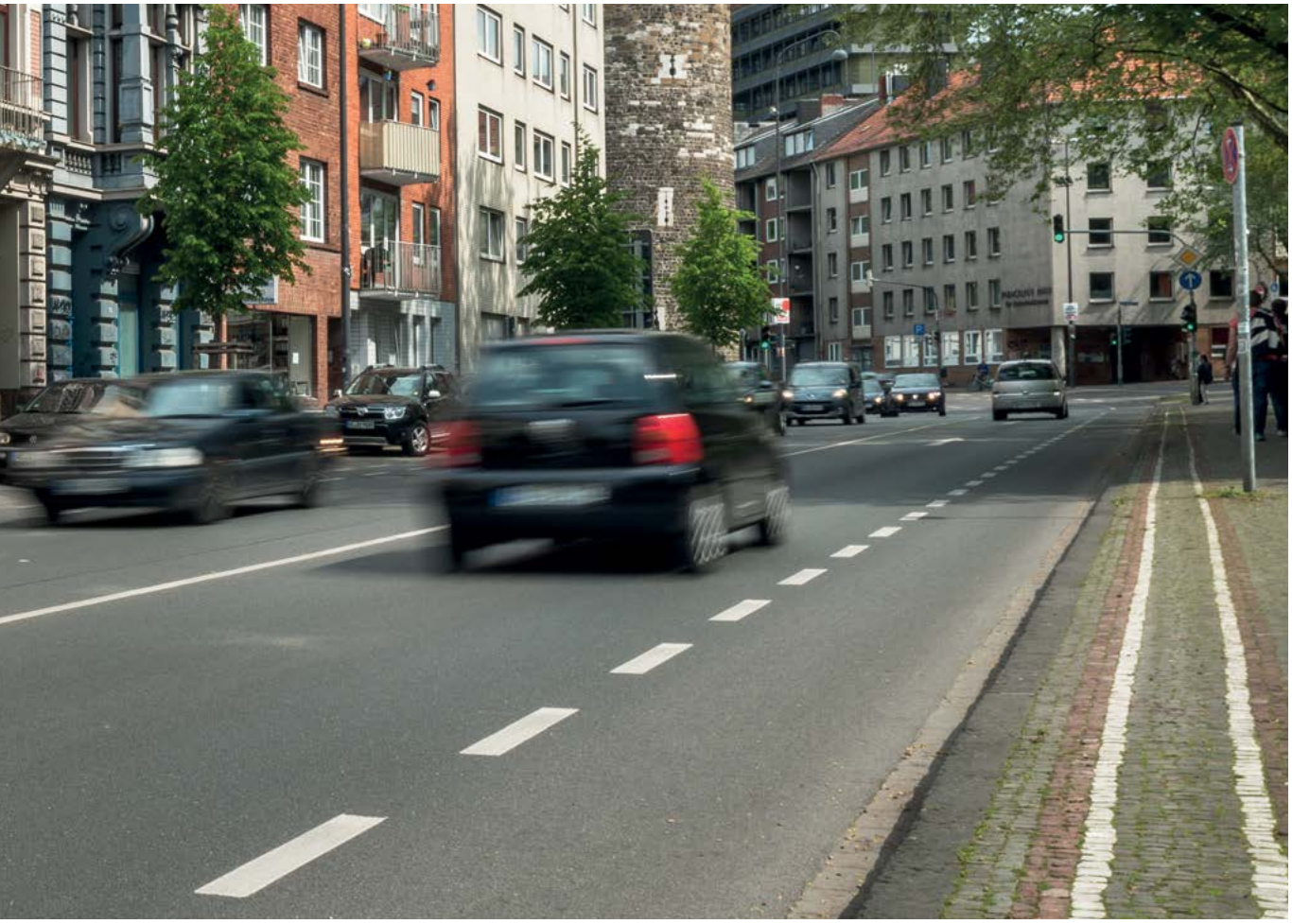
Society's growing mobility and the, in some places, rapidly ageing road network are currently confronting the road construction sector with ever greater and, above all, cost-intensive challenges.

The constantly increasing dynamic loads on pavements, the daily and seasonal temperature fluctuations, and the varying temperature behaviour of asphalt and concrete bring about reflective cracking. High stress concentrations at the tip of existing cracks cause these to propagate into any new asphalt overlay.

Reflective cracks arise

- due to the nature of the existing base
- on carriageway widening schemes
- at seams between paver passes
- above the location of road excavations
- above expansion joints in concrete pavements

The challenge.

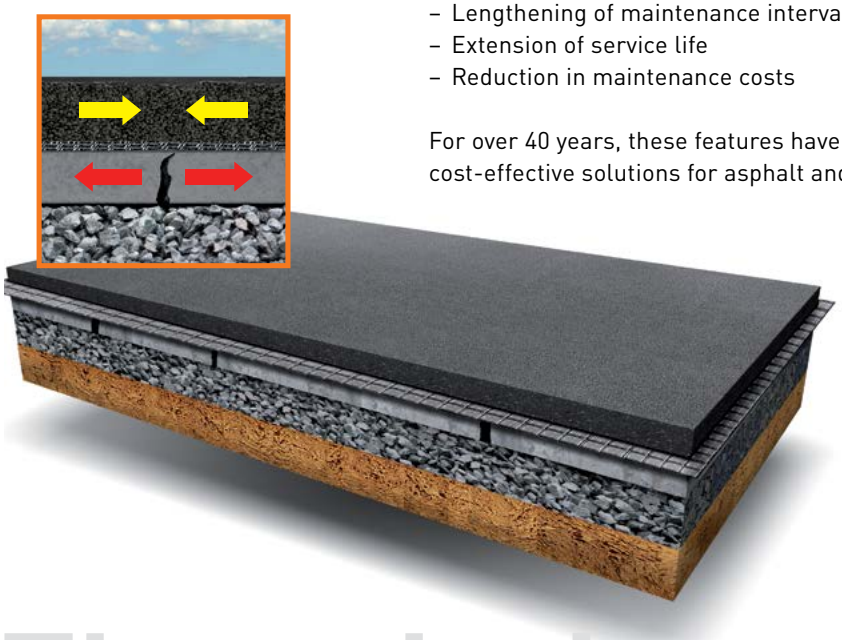


Our purpose-designed asphalt reinforcement products can extend the service life of pavements several times over.

Asphalt interlayers between asphalt courses or between asphalt and concrete take up the stresses from the asphalt or concrete layer and distribute them over a wider area. This achieves an up to fourfold retardation of cracking.

Your benefits:
- Lengthening of maintenance intervals
- Extension of service life
- Reduction in maintenance costs

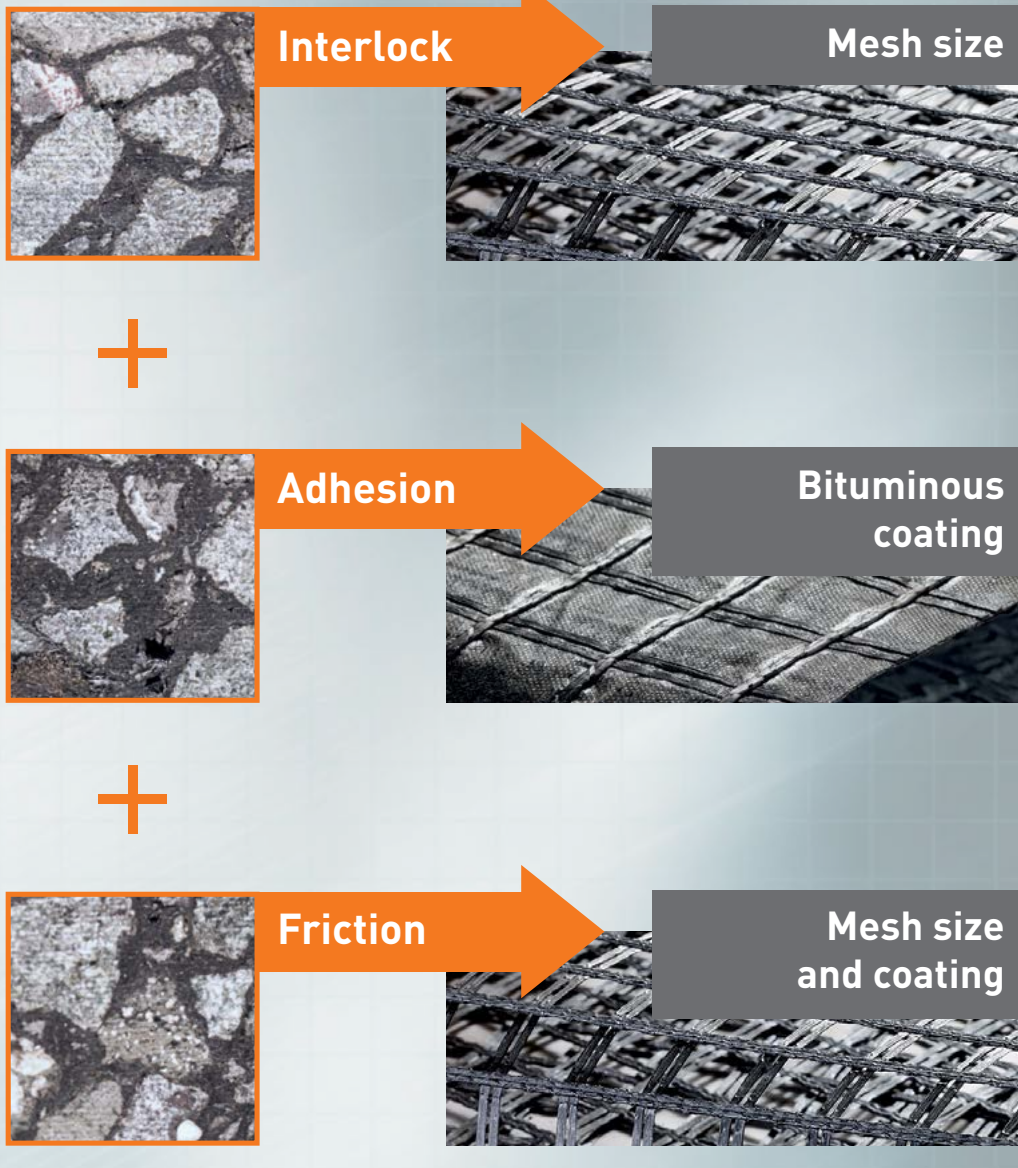
For over 40 years, these features have enabled HaTelit to deliver highly cost-effective solutions for asphalt and concrete pavement rehabilitation.



The solution.

A strong bond

A key factor in the rehabilitation of asphalt and concrete pavements is bond strength. This is determined by the interlock, adhesion and friction between the asphalt layers. High-quality asphalt reinforcements are specifically designed to enhance this effect by means of appropriate mesh sizes and coatings with a high bitumen content.



The secret of our success? The coating!

Nothing sticks better to bitumen than bitumen! That is why all our products incorporate a coating with a bitumen content > 60 %.

By opting for our asphalt reinforcement products, you will enjoy key benefits:

1. Straightforward, reliable installation

- Bituminous coating ensures excellent adhesion to base layers
- Nonwoven backing facilitates installation by saving time and protecting against displacement
- Roll lengths up to 150 m and varying roll widths up to 5 m reduce the number of overlaps and allow higher installation rates
- High flexibility and adaptability simplify laying

2. Resistant to installation damage

- When driven over by asphalt trucks or tracked pavers
- During compaction of asphalt
- When laying on milled surfaces
- In alkaline environments (when installed on concrete surfaces)

3. Strong bond

- Bond between reinforcement and asphalt PLUS bond between asphalt layers
- Excellent interlock between asphalt layers thanks to ultra-lightweight nonwoven backing (melting point > 150°C) and mesh size > 3 cm

Bitumen content of coating > 60 %

HaTelit® C

Flexible grid for durable, high-performance reinforcement of asphalt layers

HaTelit C 40/17 comprises a reinforcement grid made from high-modulus polyester yarn with an ultra-lightweight nonwoven backing. As proven by its 40-year track record, HaTelit C offers a highly durable and thus cost-effective solution which, thanks to the special properties of polyester, is well able to withstand long-term dynamic loads.

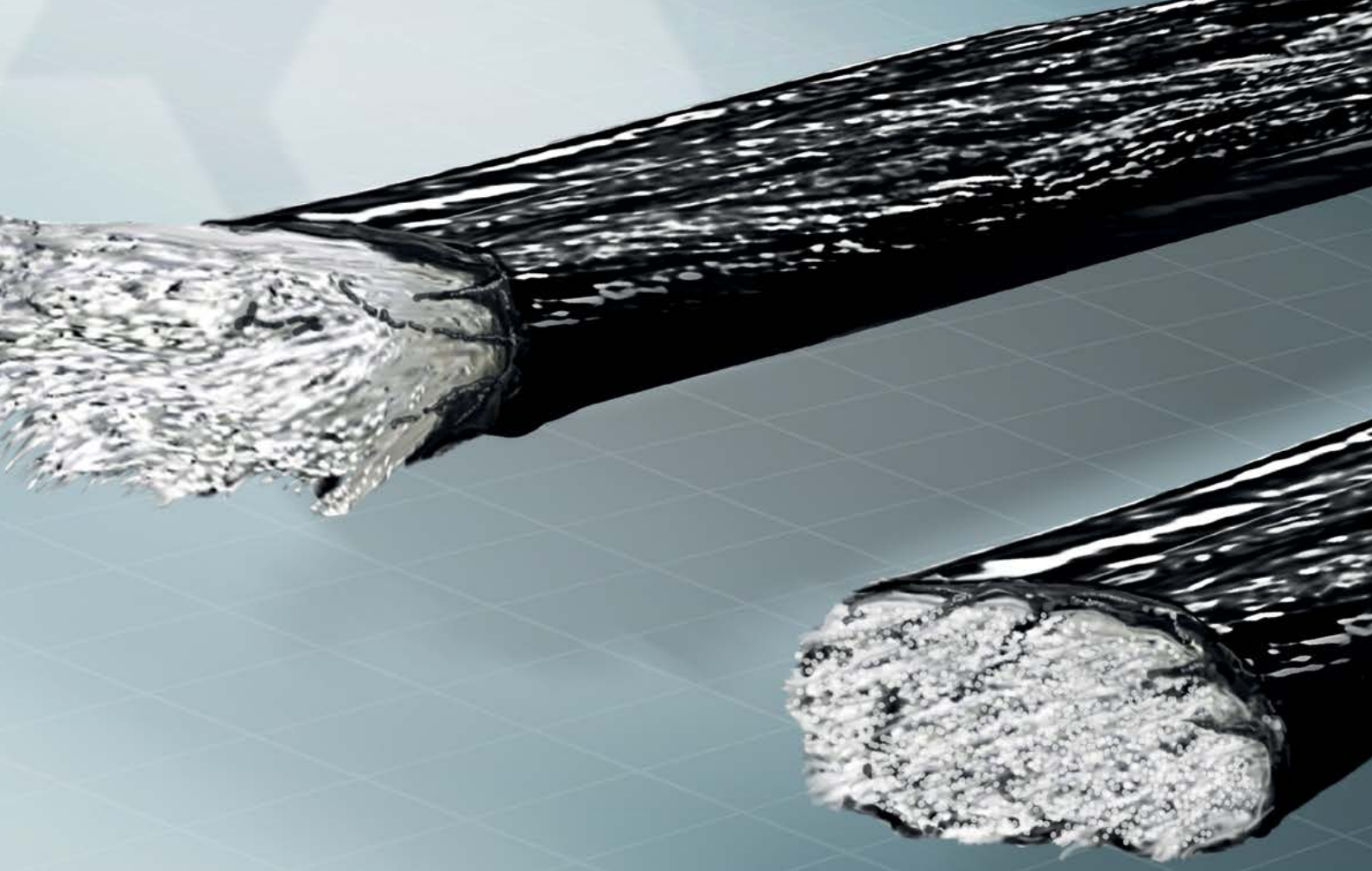
- Optimum retardation of reflective cracking
- Maximum resistance to installation damage
- High resistance to long-term dynamic traffic loads
- No loss of strength due to moisture

HaTelit® BL

Self-adhesive reinforcement grid for rehabilitation of asphalt and concrete pavements

The flexible, high-tensile reinforcement grid made from high-modulus polyester yarn laminated with bitumen sheet is particularly suitable for the rehabilitation of small asphalt and concrete pavement areas. The use of HaTelit BL also prevents any moisture or frost from infiltrating into the lower asphalt layers.

- Self-adhesive thanks to laminated bitumen sheet
- No need for additional spraying with bitumen emulsion
- Ideal for small pavement areas
- Reduced effort thanks to fewer site operations and lower plant requirement



HaTelit® G

Innovative combination of coating with 60 % bitumen content and glass-fibre for asphalt reinforcement

The new HaTelit G is the first HUESKER reinforcement grid to successfully combine the positive features of a 60 % bitumen content coating – a hallmark of the HaTelit range – with a glass-fibre product. As with other products, installation is simplified by the incorporation of an ultra-lightweight backing.

- Efficient retardation of reflective cracking
- High resistance to installation damage
- Straightforward installation
- Choice of two tensile strengths as standard

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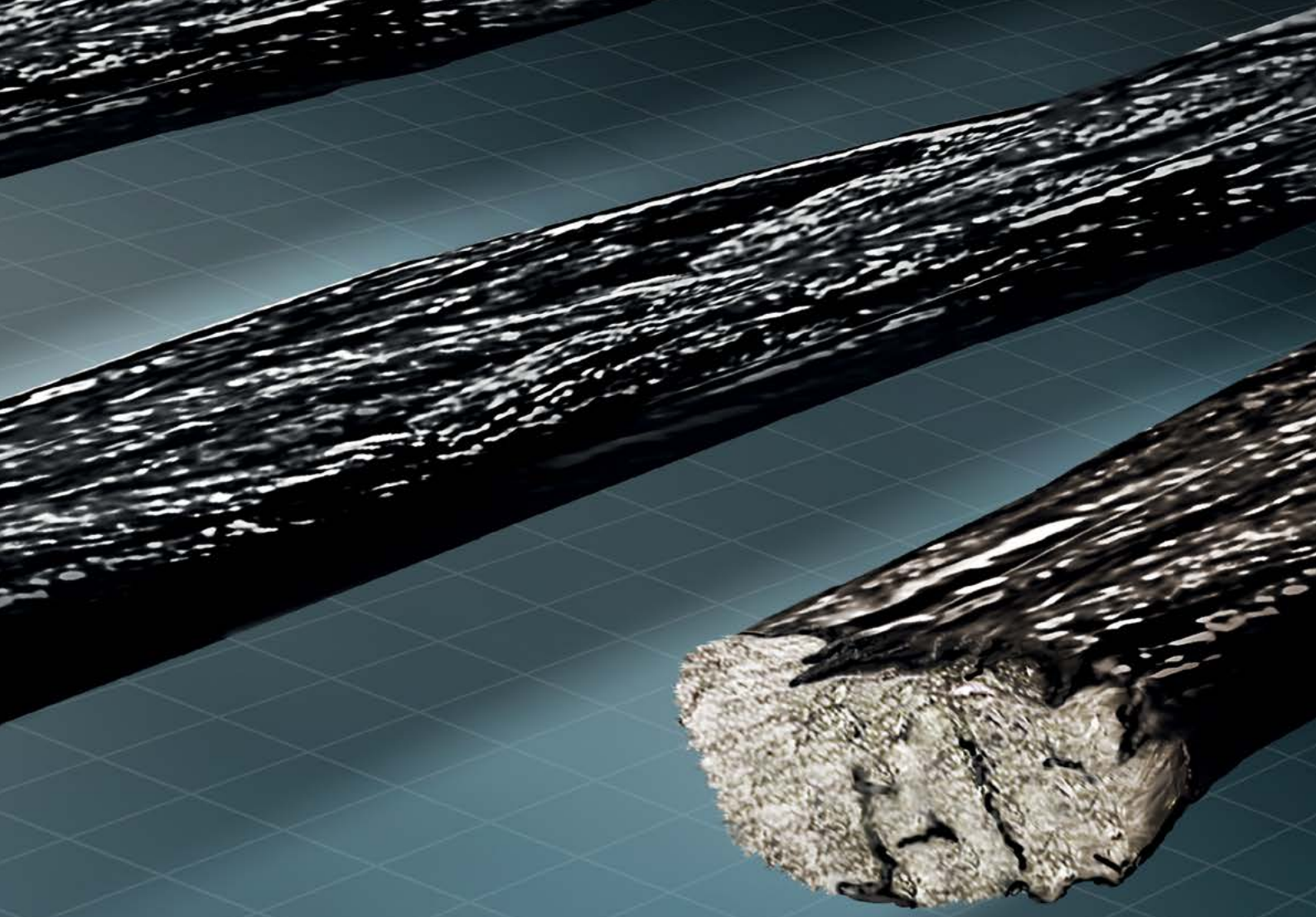

HaTelit® XP

Reinforcement grid made from unique raw material offering maximum flexibility

HaTelit XP is manufactured from polyvinyl alcohol (PVA) and thus exhibits a variety of useful characteristics. Being alkali-resistant, the reinforcement grid can be installed in asphalt or, if necessary, directly on milled concrete pavements. The fact that it also possesses all the familiar features of the HaTelit range makes this product particularly versatile in meeting diverse challenges.

- Highly efficient retardation of reflective cracking
- Very high resistance to installation damage
- High resistance to long-term dynamic traffic loads
- Durable resistance in alkaline environments (on concrete surfaces)

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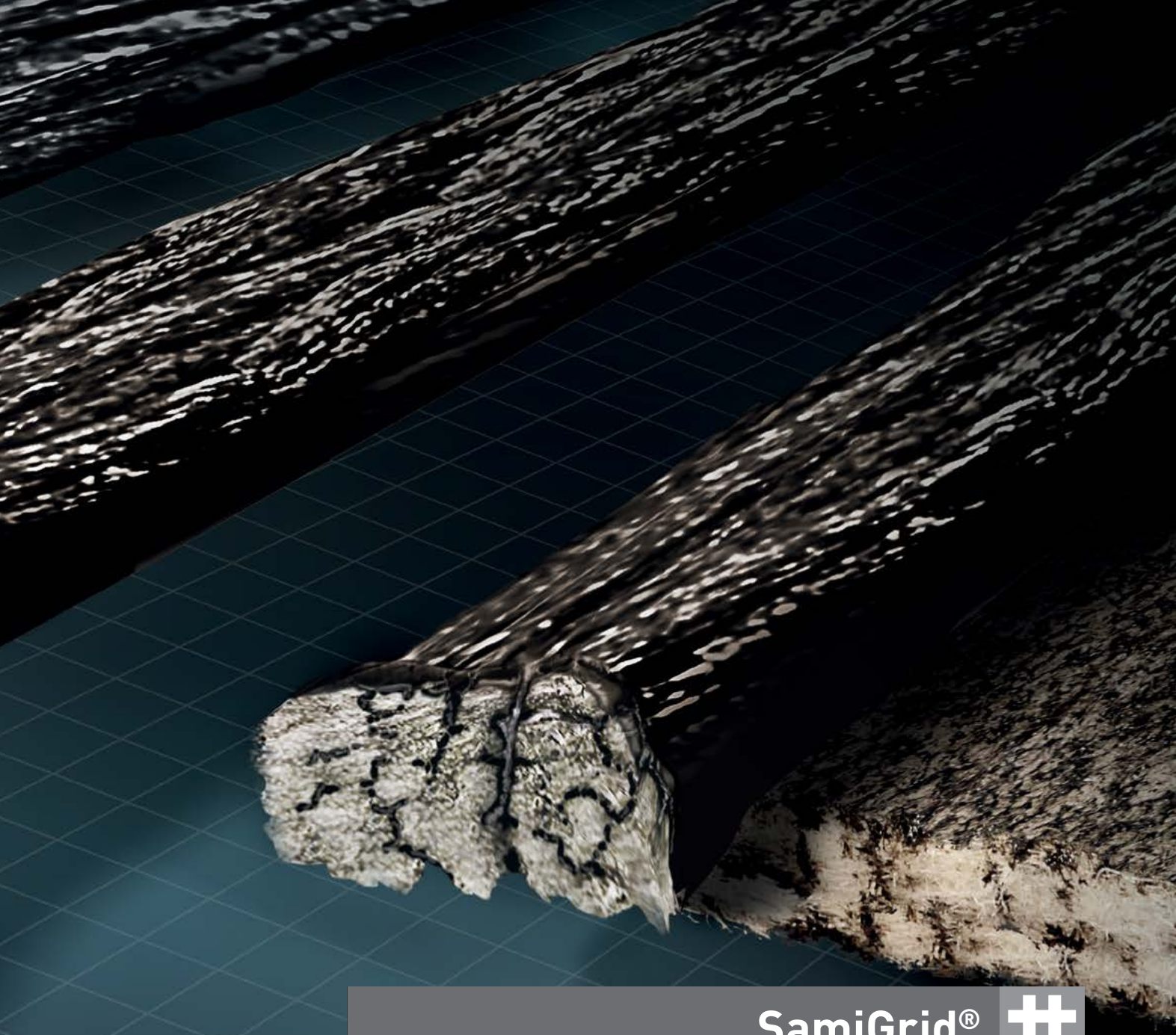

SamiGrid®

Product of choice for rehabilitation of concrete pavements with asphalt

SamiGrid is a composite product comprising a geogrid made from high-modulus polyvinyl alcohol (PVA) in combination with a 130 g/m² nonwoven fabric. The reinforcing action of the grid is complemented by the sealing function of the bitumen-saturated nonwoven. Due to its alkali resistance, SamiGrid is a perfect option for the rehabilitation of concrete pavements.

- Composite comprising PVA reinforcement grid and 130 g/m² nonwoven
- Ideal for rehabilitation of concrete pavements (alkali-resistant)
- Stress-relieving and reinforcing function
- Very high resistance to installation damage

t and SamiGrid

Our product portfolio at a glance

Property	HaTelit C	HaTelit XP	HaTelit G	HaTelit BL	SamiGrid
Strain at nominal tensile strength	≤ 12 %	≤ 6 %	≤ 3 %	≤ 12 %	≤ 6 %
Tensile strengths (MD + CMD)	50 kN/m	50 kN/m	50 kN/m, 100 kN/m	50 kN/m	50 kN/m
Bitumen content of coating	> 60 %	> 60 %	> 60 %	> 60 %	> 60 %
Tensile strength after installation damage test (DIN EN ISO 10722)	> 90 %	> 90 %	> 90 %		> 90 %
Ratio of strength of damaged specimen to nominal strength of reinforcement grid	> 80 %	> 80 %	> 60 %		> 80 %
Raw material	Polyester	PVA	Glass	Polyester	PVA
Cuttable	Yes	Yes	Yes	Yes	Yes
Roll length	150 m	150 m	150/100 m	15 m	100 m
Roll width	Up to 5 m	Up to 5 m	Up to 5 m	1 m	Up to 5 m
Mesh size	4 cm	4 cm	3 cm	4 cm	4 cm

A 52 motorway in Germany: Rehabilitation of damaged pavement surfacing with HaTelit C

The repair works commissioned by Landesbetrieb Straßenbau NRW – the state enterprise responsible for highway maintenance in the German State of North Rhine-Westphalia – to the damaged pavement surfacing on the section of Germany's A 52 motorway between the Neersen and Mönchengladbach interchanges were carried out in July 2009 using HaTelit C. The first step was to mill off the existing surface course and binder course.
A fine milling machine was used in order to create a more even base for the grid and reduce the quantity of bitumen emulsion required (due to the lower relative surface area). HaTelit C asphalt reinforcement was placed over the entire milled surface and subsequently overlaid with a 5 cm (0/16S) asphalt binder course and a 3.5 cm (0/8S) stone mastic asphalt (SMA) surface course. The motorway section has remained in excellent condition up to the present date.

Salgado Filho Airport, Brazil: Taxiway rehabilitation with HaTelit C

In 2001, a 40-year-old taxiway providing access to an aircraft maintenance hangar required resurfacing. The pavement comprised 6.0 x 3.5 m concrete slabs, 30 cm thick. As it was not possible to close off the access route for an extended period, all rehabilitation works had to be completed within a single night. Therefore, to save time, only the more heavily loaded inner part of the pavement was reinforced with HaTelit C and overlaid with a 5 cm asphalt course. The outer areas of the taxiway were left unreinforced. Seven years later, in October 2008, the difference between the reinforced and unreinforced pavement sections was clearly visible. The expansion joints in the unreinforced areas had not only propagated to the surface, but were riddled with vegetation. The parts reinforced with HaTelit, on the other hand, showed no signs of cracking.

HaTelit® and SamiGrid® are registered trademarks of HUESKER Synthetic GmbH.
HUESKER Synthetic is certified to ISO 9001, ISO 14001 and ISO 50001.

DAkkS Deutsche Akkreditierungsstelle D-PL-19299-01-00

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