

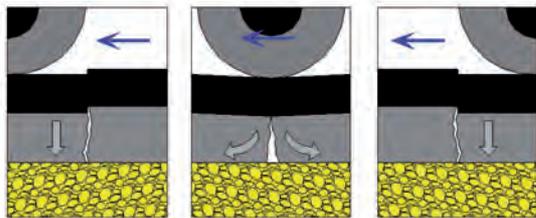
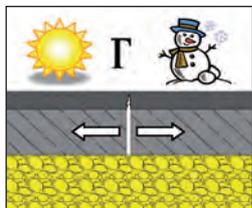


## SamiGrid® – Asphalt Reinforcement

Rehabilitation of Concrete Pavements with Asphalt



## SamiGrid® actively retards reflective cracking



Loads within carriageway

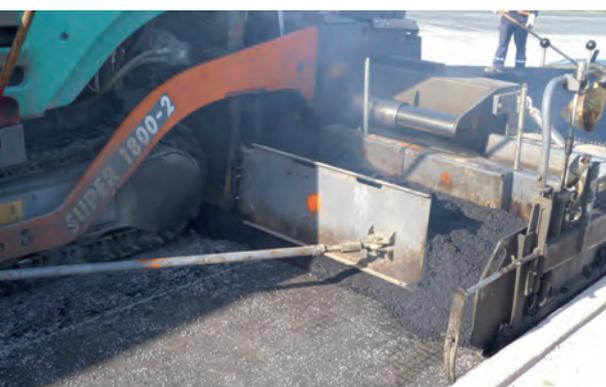
Reflective cracking is one of the biggest issues where existing concrete pavements are overlaid with asphalt. The varying temperature behaviour of asphalt and concrete as well as the high traffic loads acting on the pavement result in horizontal and vertical movement. This movement causes extremely high stresses, especially at the expansion joint locations, causing cracks in the asphalt that rapidly propagate to the surface.

Technical constraints (e.g. height restrictions due to kerbs and edgings) – which are particularly common at inner-city locations – often prevent the incorporation of a regulating course prior to installing the asphalt reinforcement. The SamiGrid® asphalt reinforcement grid, which can be laid directly onto the concrete surface, was purpose-developed by HUESKER for such applications. SamiGrid® is also ideal for the reinstatement of concrete surfaces damaged by alkali-silica reaction (ASR), e.g. on motorways.

SamiGrid® is a composite product consisting of a high-modulus polyvinyl alcohol (PVA) geogrid in combination with a nonwoven fabric. The reinforcing action of the grid is complemented by the sealing function of the bitumen-saturated nonwoven.

Unlike other raw materials, PVA is very resistant to high pH values, making it ideal for concrete pavement rehabilitation. The bituminous coating to both the grid and the nonwoven ensures that a strong bond is achieved. Given its high resistance to mechanical damage during installation, SamiGrid® can also be laid directly onto milled surfaces.

SamiGrid® asphalt reinforcement grids are produced in lengths of 100 m and in widths of up to 5 m. This significantly reduces overlaps and simplifies installation. Other widths are available upon request.



Asphalt installation on SamiGrid®

## Proven retardation of cracking

A series of tests conducted by the Belgian Road Research Centre (BRRC) has confirmed the excellent properties of SamiGrid® in terms of slowing down the reflective cracking process.

In the early 1990s, the BRRC developed a test set-up (Fig. 1) to simulate thermal crack propagation and investigate the crack-reducing effect of asphalt interlayers. The test involves the installation of a 6.5 cm asphalt layer on a cracked concrete base. At test start, the width of the simulated crack is 4 mm. During each cycle, the width is increased by 1 mm and then returned to 4 mm.

Many products and systems currently on the market have been tested using the above procedure. The investigated reinforcement products differed mainly in terms of their raw material and coating. The results are summarized in Fig. 2.

The asphalt interlayers show major differences in their effectiveness. With the non-reinforced control specimen (0), the crack propagated to the surface after only a few cycles. SamiGrid® (6), on the other hand, completely prevented reflective cracking, with no cracks initiated even after completion of the test. All other systems with polymer interlayers or glass reinforcement exhibited cracks, most of which reached the surface.

This shows the system behaviour of the overall reinforced asphalt assembly to be just as important as specific reinforcement parameters (such as extensional stiffness).

Due to its efficient mobilization of tensile forces and excellent system behaviour, SamiGrid® is highly effective in accommodating the imposed loads.

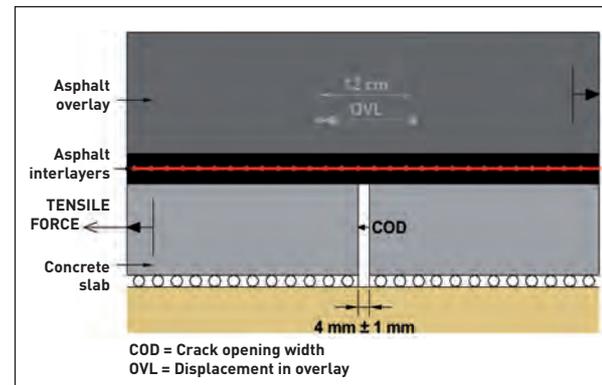


Fig. 1: BRRC test set-up

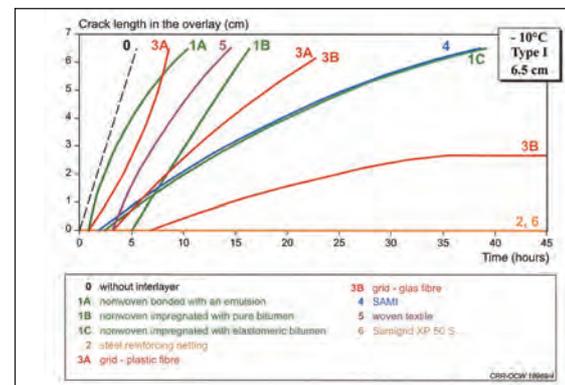


Fig. 2: Test results for different products and systems (BRRC)



Installed SamiGrid®

### FURTHER DETAILS

SamiGrid® lends itself to many applications. For further information on the product's properties, applications and technical features, please contact us or visit our website at [www.HUESKER.com](http://www.HUESKER.com).

SamiGrid® is a registered trademark of HUESKER Synthetic GmbH.



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