

HaTelit® – asphalt reinforcement grid stands up excellently to 15-year long-term test Successful use on the German Highway 13 Dresden-Berlin



Condition of the German Highway 13 carriageway surface in 2005

Introduction

At the end of 1990, a new method of asphalt resurfacing was employed on a 10 km length of the German Highway 13 motorway on the Dresden to Berlin carriageway: A combination of a SAMI (Stress Absorbing Membrane Interlayer) and a **HaTelit®** asphalt reinforcement grid.

The concrete carriageway was constructed in 1960 and had reached a stage when it was badly in need of extensive refurbishment. The old carriageway required an overlay. As a temporary measure, the old concrete slab would be relieved of load, then **HaTelit®** 30/13 installed, to be followed later by the actual final constructional solution. This temporary measure was intended to deal with the fact that concrete and asphalt behave differently in response to temperature changes. If there is differential movement between the two layers, then the load is normally carried by the asphalt; this cracks and the carriageway has to be renewed. The **HaTelit®** reinforcement grid greatly reduces this effect. It



Part of German Highway 13 broken out during reconstruction in 2005 – remaining asphalt binder course above **HaTelit®** – no visible cracks

distributes the stresses from the concrete into a much larger area of the asphalt. Furthermore, the method had clear cost advantages: The savings at the time of installation amounted to about 3 million DM.

Background

In the course of reconstruction of the German Highway 13, the question was asked as to how effective the use of **HaTelit®** reinforcement grid had been. Had the “temporary measure” withstood the ever-increasing traffic flows and higher axle loads over a period of 15 years? In 1999, 40 mm was milled off this section to rectify rutting and replaced with 60 mm of stone mastic asphalt. Six years later – in 2005 – a 2 km length

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HUESKER
REPORT



Work in 1990 showing the SAMI being sprayed on to the **HaTelit®** reinforcement grid before chips were spread.

of motorway was visually inspected by engineers from HUESKER and the motorway authority, the Landesbetrieb für Straßenwesen, Brandenburg/NL Autobahnen. Cores confirmed the findings of the inspection: After 15 years of the most punishing traffic loading, no significant crack development as a result of joint reflection cracking could be detected. What was initially a "temporary measure" had become a successful long-term solution.

Results

An extremely positive practical test for the **HaTelit®** asphalt reinforcement grid. No crack development was evident, even 20-30 mm above the grid. This result is remarkable - especially as only about 100 mm of asphalt had been applied on top of the **HaTelit®** grid, which is much less than normal. With conventional construction, it is generally assumed that the first cracks will start to appear in the surface after about five years.

The **HaTelit®**-reinforced motorway had remained crack-free for three times as long. Clear proof of the quality of this HUESKER product. Its successful use on the German Highway 13 has shown that **HaTelit®** asphalt reinforcement grid performs excellently, not only on airport runways, local and trunk roads but also on motorways.

Project: German Highway 13
Dresden-Berlin carriageway
Client: Landesbetrieb für Straßenbau,
Brandenburg, NL Autobahnen
Main contractor: STRASA, Braunschweig
Constructed: End of 1990
Product: **HaTelit® 30/13**

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European-Patent No. 0 956 392

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