

GEOSYNTHETICS/GEOTEXTILES

# Strong products, strong growth



With geosynthetics sales set to grow rapidly in the next three years, manufacturers are preparing for the demand. *Patrick Smith* reports

**G**lobal demand for geosynthetics is projected to increase 5.3% annually to 4.7 billion m<sup>2</sup> in 2013 with countries such as China, India and Russia expected to post the strongest gains through the forecast period.

All are building large-scale infrastructure developments and face evolving environmental protection regulations and strict building construction codes.

While growth in geosynthetics demand is expected to be substantial in nearly every region, the underlying reasons for that growth can vary.

These trends are presented in World Geosynthetics, a new study from The Freedonia Group (copies at US\$5,600 are available from the group by contacting Corinne Gangloff on Tel: +1 440 684 9600 or emailpr@freedoniagroup.com).

The Asia/Pacific region accounted for nearly 45% of global geosynthetics sales in 2008. Advances in this market are primarily driven by China, which itself accounted for over 75% of regional sales in 2008. It is also projected to account for nearly 60% of new global demand for geosynthetics generated between 2008 and 2013 due to its amount of available land, its ongoing development of large-scale infrastructure projects,

**Left: The cracked binder and base courses before repairs with the HUESKER HaTelit asphalt-reinforcement system**

**Centre: The fitted HaTelit asphalt-reinforcement**

**Right: A few lateral cracks were discovered at one point on the outer edge of the built-up road**

and its need for erosion control. Similarly, India is expected to post double-digit annual growth through the forecast period with gains driven by its ongoing development of transportation and erosion protection.

North America was the second largest regional market in 2008, accounting for nearly a 25% of global sales. Advances in the US market are expected to be aided in the near term by government spending initiatives on roads, bridges and other public works projects.

Western Europe and Japan are fairly comparable to the US in terms of the level of maturity of their respective geosynthetics markets, as well as the type of regulatory environment.

An example of the use of these special reinforcements can be found in Ochtrup (northwest of the Münster region in Germany). Rosenstrasse runs east of the town and leads directly to the border crossing to the Netherlands.

A bypass, completed in 2005, aimed at reducing heavy goods traffic in the town. On completion the former District Road 57 was downgraded to a municipal road, although people still use the shorter route along the Rosenstrasse as an alternative to the bypass.

Damage to the road (map cracking) was established along the entire width of the road before repair work on Rosenstrasse started in 1996. The plan to repair the road included removal and replacement of the 50mm layer of asphalt wearing course, and this revealed extreme cracking in the binder and base courses, which were in a very poor condition.

To renew just the wearing course would have quickly allowed cracks from the binder course to progress through to the top layer, making further repairs necessary; a total prolonged closure of Rosenstrasse was not desirable, and renewal of the entire upper structure would have caused considerable additional costs.

To keep repair costs low, extend the time between repairs and to allow the repaired road to be maintained at a high level for longer, it was decided to employ the HaTelit asphalt-reinforcement system (initially as a short-term measure). This would prevent cracks in the binder course progressing to the top layer.

After removal of the wearing course it was sprayed with bitumen emulsion: the HUESKER HaTelit system was placed on this surface and

covered with a 50mm thick 0/11 asphalt-concrete layer.

Six years after the work, HUESKER asked the Steinfurt District's chief executive for a condition report on the Rosenstrasse.

The response was: "...I'm happy to inform you that the repairs at the time to Kreisstrasse 57, Rosenstrasse, using HaTelit 30/13 have fully stood the test of time. The use of the asphalt-reinforcement system under the 0/11 asphalt layer has meant that, to this day, no cracks have appeared in the asphalt-concrete surface. This method was chosen at the time to avoid the necessity of the additional work required for the binder and base course..."

In April, 2009, further inspection revealed that "...no map cracking has appeared in the asphalt-concrete surface to this day," while in August/September, 2009, HUESKER commissioned TÜV Rheinland LGA Bautechnik to record the cracking and assess the condition of Rosenstrasse along the length repaired in 1996.

The appraisal also compared the current condition with the condition that existed before repairs were carried out in 1996. This permitted conclusions to be drawn about whether the use of the HaTelit asphalt-reinforcement system is able to delay the occurrence of cracks propagated from the lower courses, says HUESKER.

In August, a visual inspection was undertaken by the Forschungsgesellschaft für Strassen und Verkehrswesen (Research Association for Road and Transport).

The LGA used the image documentation of the construction measures prepared in May 1996 as the basis for its assessment. The construction supervisor employed by the Steinfurt District at the time also provided additional necessary information.

After 13 years of use, the cracking condition value (ZWRIS) for the section of

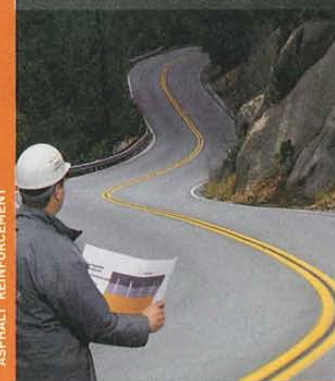
the road repaired with HaTelit in 1996 was determined as being "excellent."

According to the LGA, visual inspection of the road surface revealed almost no damage to the substance. Two repair sites were recorded (due to drainage work), and a few lateral cracks were discovered at one point on the outer edge of the built-up road along with small cracks at a few other points on the outer edges. Photographs documenting the condition of the site in 1996 show that the distance between the HaTelit system and the road edge was always around 150-300mm.

TÜV Rheinland LGA Bautechnik also confirmed: "The entire remaining road area is free of cracks."

# HUESKER

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