

CASE STUDY

Umbumbulu Road (R 603) Rehabilitation.

January
2019

Client: KZN Department of Transport

Contractor: Crossmoor Transport

Consultant: VNA Consulting

Product: Glasgrid 8550.....3 000 m²
Asphalt Reinforcement

For Kaytech: Sham Luchai

The R 603, (popularly called the Umbumbulu Road) is an important 81 km long regional road which Joins the N3 near Camperdown and passes by Eston, Mid-Illovo and Umbumbulu on its way to connect to the N2 near Winkelspruit (Kingsburgh).

For travellers and goods traffic heading to the South Coast, this is a convenient connection, bypassing congestion at the N3/N2 EB Cloete "Spaghetti Junction" in Durban, and cutting about 10 km off the journey between Camperdown and Winkelspruit.



Regular maintenance is required on this route, and in places this has required milling off the old surface and renewing it.

KZN DOT appointed Messrs VNA Consulting to design and supervise these works. The original procedure consisted of milling off the existing asphalt surface before laying a 40 mm asphalt surface. However after milling was done and before the new surface could be applied, for a number of reasons the basecourse was left open for a period. This

allowed the surface to absorb a substantial amount of water, and this resulted in horizontal and vertical cracks in the basecourse, presenting a danger of these cracks reflecting through the new asphalt surface after installation.



To prevent such reflective cracking, VNA specified GlassGrid type 8550 to be layed over cracked surfaces before the placing of the 40 mm asphalt overlay.

GlasGrid[®] is a polymer coated woven glass grid structure with a pressure sensitive adhesive, designed for asphalt reinforcement.



This 50 kN x 50 kN tensile strength, glass reinforced geogrid is designed to redirect crack stresses horizontally and dissipate traffic induced stresses.

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Accordingly, the product retards cracks from reflecting through asphalt overlays to the surface, and the open aperture design promotes aggregate interlock between layer works, greatly decreasing shear potential that is common with some paving fabrics



Typically, some causes of pavement cracking are loading, age hardening and temperature cycling. GlasGrid® paving reinforcement combines strength and elasticity for long-lasting performance and helps arrest this cycle of deterioration. It's the hidden strength in the road, reducing reflective cracking for years to come. The combination of high tensile strength and high modulus of elasticity at low elongation makes GlasGrid® stronger than steel in asphalt reinforcement applications.

- In independent laboratory tests, GlasGrid has been proven to extend pavement life by up to 300%
- Shown to reduce moisture, thermal and stress-related reflective cracking
- There are tens of thousands of successful installations worldwide
- Case studies show positive results in the field as reported by road and airport engineers from around the world

These tests and studies are available from Kaytech, on request.



The contractor, Pinetown-based Crossmoor Transport is pleased with the ease of placement and installation of the Glasgrid. At time of writing the works are continuing.

