KAYTECH
ENGINEERED FABRICS

SEALGRID
N11, Section 2, KZN
Pavement Rehabilitation

Case Study

PROJECT: N11 Section 2, Ladysmith South IC – km 0,0 to Nkunzi River Bridge – km 47,75, KZN
CLIENT: SANRAL
DATE: Jan 2003 – June 2004
CONSULTANT: Ingerop Africa and Nankhoo & Associates JV
PRODUCT: GlasGrid® 8501, Sealmac®, Sealgrid
CONTRACTOR: Road Mac Surfacing [Pty] Limited
TRAFFIC: 6 000 vpd (20%)

EXISTING
Most of the subgrade soils along this section of the N11 contain highly expansive soft plinthite derived from argillaceous Karoo sediments. Periods of excessive moisture, aggravated by local poor drainage facilities, especially in the vicinity of the culverts along, with periods of persistent drought, had resulted in large fluctuations in moisture content of the subgrade. This, coupled with a significant increase in heavy vehicle traffic, resulted in the localised development of severe cracking, with some cracks over 35 mm wide and extending deep into the subgrade, well below pavement layers.

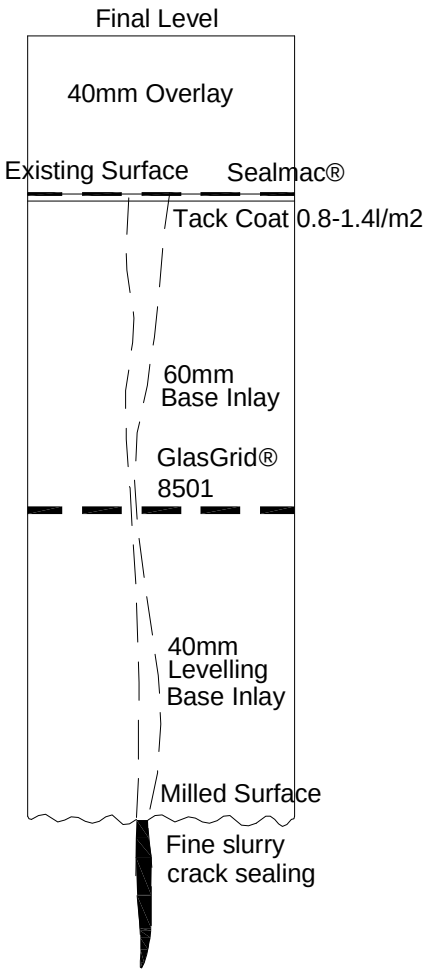
Km 42,946 – Crack under milled surface, 2003

REPAIRS TO SEVERELY DEFORMED AND CRACKED AREAS
GlasGrid® was specified as a specialised method of repair where severe cracking and surface deformation were evident. The top 100 mm asphalt was milled out and visible cracks sealed with a fine slurry. A 40 mm asphalt levelling course was then placed and **GlasGrid® 8501** (100 x 100 kN/m) installed and overlaid with 60 mm base course asphalt

A **Sealmac®** interlayer was then installed with a CAT60 bitumen emulsion tack at 0.8 to 1.4 l/m^2 followed by a 40 mm premix overlay.

Km 42 946 – **GlasGrid® 8501** installation, 2003

Km 42 946 – **GlasGrid® 8501** performance, July 2008



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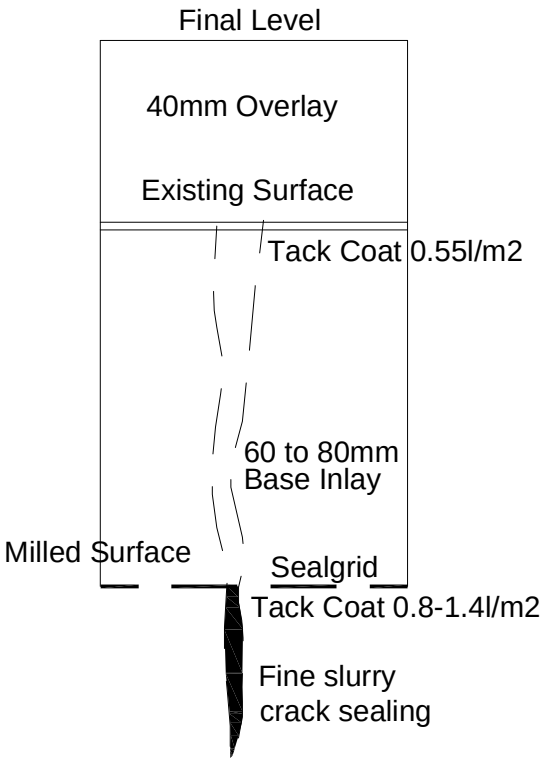
Km 16.28 – **Glasgrid®/ Sealmac®** installation, 2003

Km 16.28 – **GlasGrid®/ Sealmac®** performance, July 2008. Note reappearance of cracks beyond culvert, outside area of geosynthetic repair

REPAIRS IN AREAS WHERE DEEP MILLING WAS NOT JUSTIFIED
Sealgrid® 50 kN by 50 kN was installed in situations where the severity and depth of cracking over non-deformed areas were such that milling to 100 mm depth was not justified or practicable. 60 mm to 80 mm asphalt was milled out and residual cracks filled with a fine slurry. A tack of CAT60 coat bitumen emulsion was applied at 0.8 to 1.4 l/m^2 and **Sealgrid®** installed. Base course asphalt was inlayed to the existing level and overlaid with 40 mm premix.



Km 32.200 – **Sealgrid** installation, 2003

Km 32.200 – **Sealgrid** performance,July 2008. Note cracks have not reappeared