

PAVEMENT REHABILITATION - WINDERMERE CENTRE
DURBAN, SOUTH AFRICA

ROAD PAVEMENTS/ASPHALT OVERLAYS

Product: RoadMesh™

Problem

The asphalt surface of the entrance to the service area of the Windermere Shopping Centre exhibited severe signs of rutting caused by the delivery trucks. This eventually led to waterproofing problems as the stormwater penetrated the damaged pavement sections and leakage through into the parking basement below.

Solution

To repair the problem, the consultant initially specified the complete removal of the existing damaged asphalt and overlaying the concrete deck with a 5mm waterproofing material before applying a 40mm thick Medium Colto mix as a wearing course.

Maccaferri proposed RoadMesh™ placed directly onto the existing asphalt pavement and overlain with 40mm thick Fine Colto mix as an alternative. Being a fine asphalt mix, the increased rutting potential was offset by the RoadMesh™ reinforcement which reduces rutting significantly by intercepting the shear planes generated by the applied wheel loads. The waterproofing requirements was provided by the Fine Colto mix. Some localised patching was required in badly distressed areas.

RoadMesh™ is manufactured from heavily galvanised woven wire mesh, reinforced transversly with steel rods. RoadMesh™ is used as a pavement reinforcement material to reduce rutting, improve asphalt fatigue, reduce crack reflection and increase the load bearing characteristics of platforms.

Approximately 300m² of RoadMesh™ was supplied in panels of 50m long by 2m wide. Each panel was unrolled to the desired length and fixed to the underlying asphalt using Hilti nails and washers at a rate of 4 nails / m².



Before construction

Date: Aug 2000



Application of tack-coat

Date: Sep 2000

Client name:

PRIVATE

Main contractor name:

NATIONAL ASPHALT

Consultant:

CP JONSSON & ASSOCIATES

Product used:

±300m² OF ROADMESH™

Construction info:

Construction date: SEPTEMBER 2000

Completion date: SEPTEMBER 2000



After construction

Date: Sep 2000

The RoadMesh™ was then overlain with a tack-coat before a 40mm thick fine graded hot mix asphalt was applied and compacted to the required specification.

Monitoring of the site by Maccaferri has revealed that the RoadMesh™ has performed particularly well in terms of preventing rutting and shoving of the asphalt layer.

Benefits

RoadMesh™ provided the following benefits:

- Significant cost saving as the existing asphalt could remain in place. Furthermore, the 5mm thick waterproofing material originally proposed was unnecessary.
- RoadMesh™ improves asphalt fatigue. Research conducted on RoadMesh™ at Virginia Tech, USA, showed a 42% improvement in asphalt fatigue when compared to an unreinforced asphalt section.
- RoadMesh™ reduces reflective cracking in asphalt pavements.
- RoadMesh™ reduces the potential for rutting in asphalt pavements.
- On-site assistance was available from Maccaferri with regards to installation techniques and methodology.
- The wire used in the manufacture of RoadMesh™ is heavily galvanised. Once the RoadMesh™ is fixed in place and coated with the bitumen in the asphalt, the potential for corrosion is eliminated.
- The high strength, low strain characteristics of steel within the asphalt ensure instantaneous load response even at low microstrains.

Maccaferri SA (Pty) Ltd

HEAD OFFICE - DURBAN, SOUTH AFRICA

P O Box 15777, Westmead, 3608 Tel: +27-31-700 8456 Fax: +27-31-700 8469 e-mail: dbnsales@maccaferri.co.za

JOHANNESBURG, SOUTH AFRICA

P O Box 2285, North Riding, 2162 Tel: +27-11-704 0160 Fax: +27-11-704 0159 e-mail: jhbsales@maccaferri.co.za

CAPE TOWN, SOUTH AFRICA

P O Box 22150, Fish Hoek, 7974 Tel: +27-21-702 1416 Fax: +27-21-702 2977 e-mail: cptsales@maccaferri.co.za

MADAGASCAR

BP 168 Antananarivo 101, Madagascar Tel: +261-20-22-231 02 Fax: +261-20-22-553 90 e-mail: maccaferri@moov.mg

www.maccaferri.co.za

