

# **Polyfelt**<sup>®</sup> **PGM-G** – **Asphalt Pavement Reinforcement Geosynthetic** Asphalt Pavement Rehabilitation at Madhurai (NH-7), Tamilnadu, India

### **Project Data**

Project	: Asphalt Pavement Rehabilitation in NH7 from Kovilpatti to Kayathar, Madhurai, Tamilnadu, In	dia.
Project Owner	: NHAI	
Project Contractor	: IVRCL	
Product Installed	: Polyfelt <sup>®</sup> PGM-G	
Quantity	: 200,000sqm	
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### **Overview:**

This project consists of strengthening the existing 9 to 12m width road pavement structure to allow excess traffic flow and to decrease the maintenance cost for 20km stretch of the highway.

#### **Problem:**

The highway carries heavy traffic loads from Tuticorin Port to Kanyakumari and Kerala in South India. Cracks were reflected from the old pavement through the new pavement structure.

#### Solution:

Following evaluation of the pavement structure it was proposed to install a pavement reinforcement geosynthetic between the old pavement and new overlay to reinforce and seal the two layers and delay crack reflection from the old pavement up through the new overlay.

Polyfelt<sup>®</sup> PGM-G 50/50 was chosen as the preferred reinforcement fabric over alternative fibreglass grids due to its ability to both reinforce as well as seal the old cracked pavement. Compared to glass grids, Polyfelt<sup>®</sup> PGM-G is also easier and quicker to install resulting in faster re-opening of the road to traffic.

Polyfelt<sup>®</sup> PGM-G 50/50 is a paving composite comprising fibreglass reinforcement yarns bonded to a non-woven fabric. PGM-G<sup>®</sup> 50/50 provides strength of 50kN/m in both longitudinal and transverse directions within 3% strain through its reinforcing glass fibre. This reduces the strain in the asphalt pavement generated by the cyclic loading from the traffic. The nonwoven fabric acts as a sealing membrane when impregnated with bitumen to prevent ingress of water into the base and hence, maintaining the integrity of the pavement structure.



Bitumen application on the existing pavement surface



Laying of Polyfelt" PGM-G over the bitumen coated pavement using a mechanical rig

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# <sup>⊗</sup>TENCATE Polyfelt<sup>°</sup>

## **PROJECT REFERENCE**

**Polyfelt**<sup>®</sup> **PGM-G** – **Asphalt Pavement Reinforcement Geosynthetic** Asphalt Pavement Rehabilitation at Madhurai (NH-7), Tamilnadu, India

### Installation:

The rehabilitation work was carried out first by cleaning the existing pavement surface from dirt and debris. Cracks were filled with suitable fillers. The existing pavement was then sprayed with polymer modified bitumen at a specific rate. This is to ensure optimum absorption of the bitumen into the PGM-G geosynthetic so as to achieve sufficient bonding between the geosynthetic and the old pavement.

A mechanical rig was used to install the PGM-G geosynthetic. This is to control even tensioning of the geosynthetic when brushing the geosynthetic into place over the bitumen and to avoid wrinkles developing on the geosynthetic.

Once the geosynthetic was laid, the new asphalt pavement was installed over the geosynthetic and compacted to specification.



Asphalt pavement overlay installed over the PGM-G geosynthetic



Completed roadway opened for traffic

#### Polyfelt® is a registered trademark of TenCate.

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support Office.

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