

## Hit the Road with High Modulus **B**asalt Fiber



# TenCate Polyfelt® PGM-B: Asphalt Rehabilitation at its Best



## SOLUTION RECOMMENDATION

### To bridge longitudinal cracks or joints

In the city of Hellendorn (NL), a 5 cm thick asphalt surface layer was installed above TenCate Polyfelt® PGM-B without any problems. Due to the fact that the reinforcing yarns are embedded in the cured emulsion which is softened by the hot asphalt, the bitumen matrix completely surrounds the yarns and provides intimate contact and a perfect composite behaviour.

## THE CHALLENGE

The increasing traffic volume in terms of number of passes, of axle loads as well as changing climatic conditions lead to accelerated deterioration and cracks in pavements.

Conventional maintenance consists in milling part of the asphalt and applying new overlay.

The existing cracks often quickly reflect to the new asphalt surface. The reflective cracking makes local repair necessary or may require replacement of the whole layer system, including binder and even subbase.

## THE SOLUTION

TenCate Asphalt Interlayer systems prevent or retard the formation of reflective and fatigue cracking and considerably limit deformations.

TenCate Asphalt Interlayer system extends life of the road structure and reduces the cost of maintenance.

## BASALT FIBER ADVANTAGES

- > High strength: **up to 200 kN/m**
- > High Modulus: **89 GPa**
- > Better chemical resistance
- > Better compatibility with bitumen
- > Specific strength: 750 MPa/(g/cm<sup>3</sup>)
- > Environmental friendly production: **up to 80% less CO2** consumption in comparison with other high strength fibres like glass, steel or carbon
- > 100% natural material

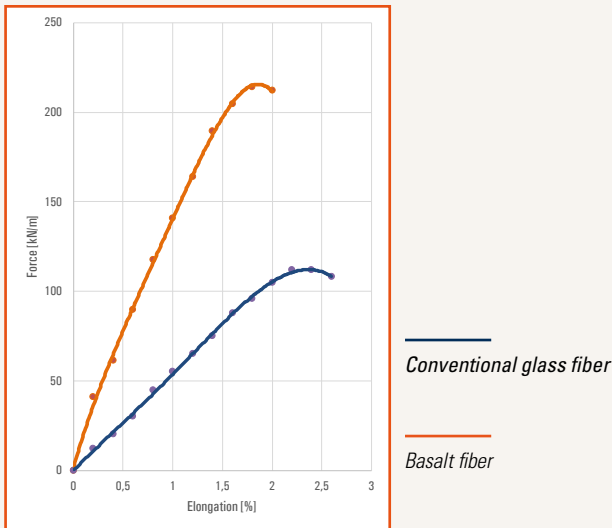
## WHY BASALT REINFORCEMENT IN CMD?

- > 200 kN/m strength at 1.7% elongation
- > Optimum to bridge longitudinal joints
- > Reduction of rutting
- > Adhesion to Bitumen
- > Multifunctionality (STR, B, R) according to EN ISO 15381





## BASALT FIBERS: 100% STIFFER



## ASPHALT REINFORCEMENT AS A SYSTEM

Three forms of crack-delay are described in asphalt constructions in EN 15381 (Geotextiles and geotextile-related products - Characteristics required for use in pavements and asphalt);

Asphalt interlayer systems secure effective crack retardation by:

> **Reinforcement (R):** By taking up tensile forces when the road structure is loaded, stresses in the layer system are reduced. This is also called the “active” role of the asphalt interlayer.

> **Stress Relief (STR):** the asphalt reinforcement with the applied modified emulsion layer will **absorb the stress between the two layers** and form an interlayer, allowing for small movements, dissipating peak-stresses and thus preventing crack growth.

> **Barrier (B):** in addition to the crack retarding properties, TenCate Polyfelt® PGM-B products also offer a third feature: sealing. The saturation of PGM-B with a sufficient amount of bitumen will create a waterproof layer. Water, road salts, and oxygen cannot penetrate into the underlying structure. This **retards the aging of the road layer system**.

**An asphalt interlayer system is more than just a product that can absorb tensile forces.** The interlayer has to co-operate with the surrounding asphalt and the manner of adhesion of the product to the asphalt is essential. Moreover, in many cases, not only the 'reinforcing' function of an asphalt reinforcement is of importance, but also the "stress-spreading", and / or "water-resistant" feature.

Any asphalt reinforcement can fulfil its function only in combination with the appropriate bituminous adhesive layer.

Road maintenance often requires different functions in different zones of the road. **PGM-B is designed to provide all the 3 necessary functions in one system in every single profile of the road.**

**Hit the road with TenCate Polyfelt® PGM-B: Your Asphalt Rehabilitation at its Best!**



# GEOSYNTHETICS

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