Installation by Foster Contracting of Tensar's asphalt reinforcement interlayer, AX5-GN.

Tensar®

PAVEMENT SURFACING

Pavement Innovation

As part of the 2018 major upgrade project covering 6 different sites, Scottish Borders Council used over 27,000m^2 of Tensar's innovative asphalt interlayer product, AX5-GN which covered nearly 9.5km of their rural network.

B6357 Saughtree Station

Asphalt Reinforcement

Borders, Scotland

CLIENT'S CHALLENGE

Due to a limited budget, a full depth pavement reinstatement was not possible on the B6357 which runs close to the Scottish and English border near Gretna Green, so the client looked to use latest geosynthetic technologies to offer a structural solution to their failing carriageway.

TENSAR SOLUTION

Tensar AX5-GN is a structural composite interlayer consisting of a polypropylene stiff monolithic paving grid with integral junctions bonded to a polypropylene non-woven paving fabric.

The paving hexagonal grid is orientated in three directions such that the resulting ribs have a high degree of molecular orientation which continues through the area of the integral node.

The stiff high-profile ribs create a mechanical bond with the asphalt overlay, therefore performing the structural reinforcement function of the asphalt interlayer. The paving fabric component functions initially as an installation aid and once saturated with bitumen, provides the functions of a stress relief system and interlayer barrier.

BENEFITS

Increased operational life by up to 3 times
as a result of a high performing asphalt interlayer.

Reduced road materials, installation time and cost
compared to a traditional pavement upgrade.

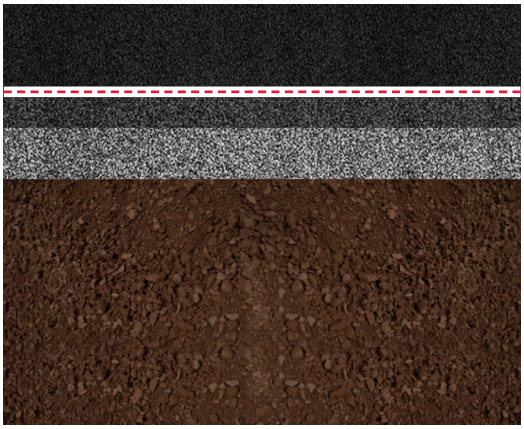
Tensar AX5-GN asphalt interlayer installed onto a 20mm regulating layer.

PROJECT BACKGROUND

Tensar attended several site visits to look at the suitability of using an asphalt interlayer product to help improve the performance and service life of the council's existing pavements.

The upgrade formed part of the Strategic Timber Transport Scheme which had identified major maintenance work was required prior to additional timber vehicles using the B class roads. The B6357 Saughtree Road was showing serious signs of wear and damage. The failure mechanisms were identified as reflective cracking, disintegration of the asphalt layers along with Debonding, Voiding and Asphalt Fatigue. The final pavement design was assessed using ERAPAVE software which made it possible to perform linear elastic analysis of the pavement structure.

The rehabilitation process did not require any milling to the pavement as we used a 20mm regulating layer which was laid prior to spraying a 160/220 straight run bitumen bond coat at an application spread rate of 1.1kg/m^2, followed immediately by Tensar AX5-GN. Finally, the 60mm of asphalt surface course was placed overlaid over the interlayer in a single compacted lift.



60mm Surface Course

Tensar AX5-GN interlayer
20mm Regulating Layer

Existing Asphalt Layer

Subbase Layer

Installer
Foster Contracting Ltd (North)

Client
Scottish Borders Council

"This was a challenging project due to the layout of the road and the weather conditions. Nonetheless, Tensar AX5-GN was easy and quick to install which saved us and the client time"

Sean Gibb
Director
Foster Contracting Ltd (North)

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