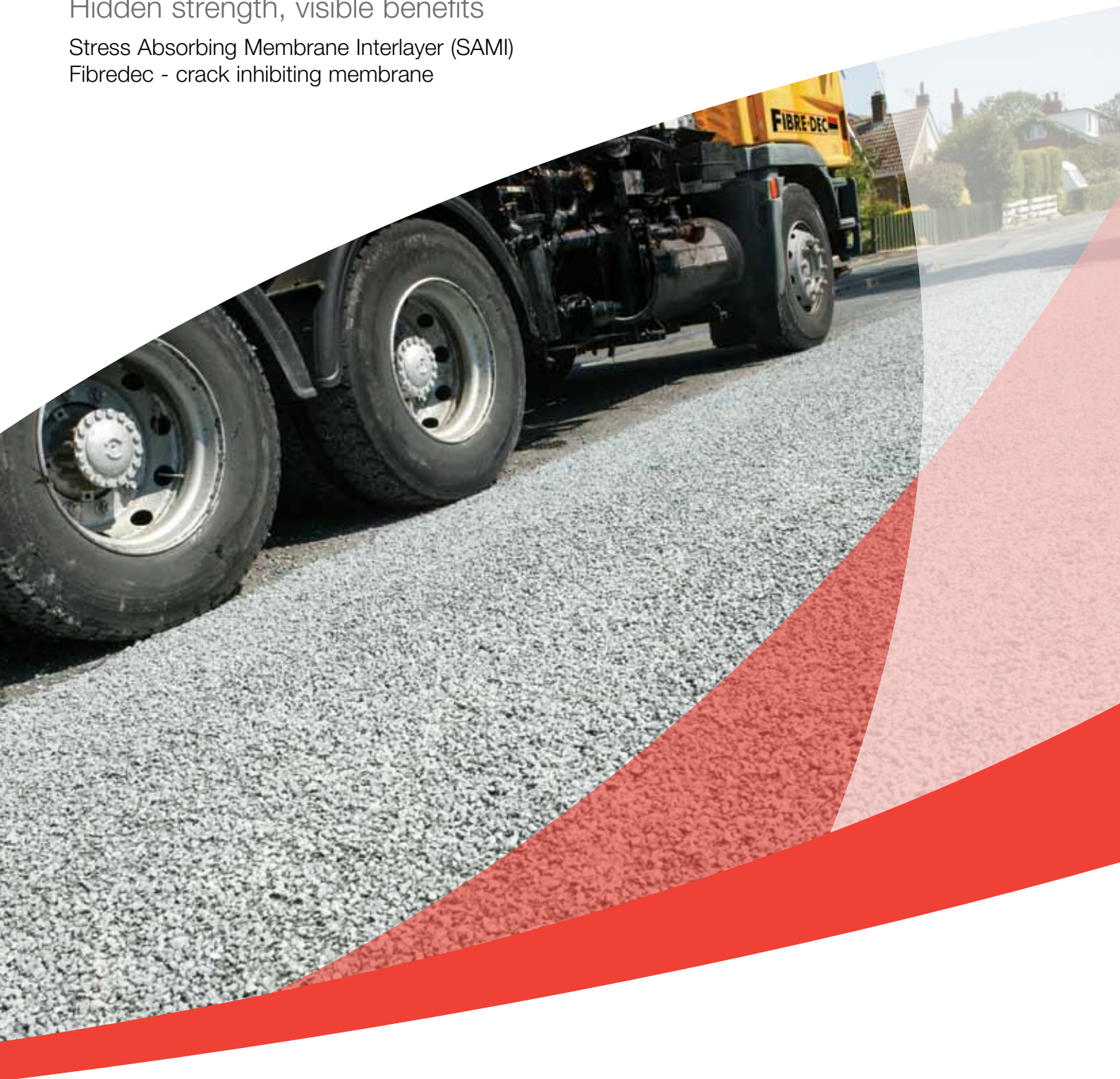


Fibredec

Hidden strength, visible benefits

Stress Absorbing Membrane Interlayer (SAMI)

Fibredec - crack inhibiting membrane



Stress Absorbing Membrane Interlayer (SAMI)

Fibredec - crack inhibiting membrane

Fibredec is a combination of bitumen emulsion, chopped glass fibre and aggregate which acts as a waterproof and a highly resilient membrane. Fibredec effectively inhibits reflective cracking over a whole range of applications including roads, footpaths, car parks, commercial and architectural developments.

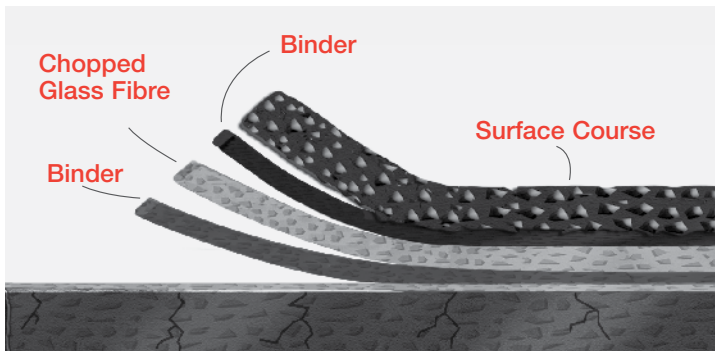


In use, Fibredec is faster to apply than conventional SAMIs. Furthermore there are no adhesion problems and no rucking and tearing. It is able to withstand trafficking between laying and overlaying and the final surface course can be applied at a later date if required.

Fibredec SAMI is particularly effective when applied under microasphalts and thin surfacing and as a reinforced surface dressing, where extensive pre-patching and preparatory works would otherwise be necessary. Fibredec can be used for oversite sealing of unbound subbase material and as a SAMI in conventional asphalt pavements.

Fibredec - the process





Why it works

Research undertaken by Nottingham University concluded that: Fibredec has sufficient tensile strength and flexibility to absorb movements in the pavement structure and prevent the surface from cracking. Where permanent lateral movement of the overlay might occur – due to cracks in the underlay material – Fibredec reduces the magnitude of the resultant strain in the overlay by spreading it over a greater area.

Whilst conventional SAMIs simply relieve stress, Fibredec acts like a cushion - its thickness absorbs stresses, thereby acting as a true stress absorbing membrane.



Application

Specially developed equipment applies glass fibres in-situ, sandwiching them between two layers of polymer modified bitumen, prior to the application of 3/5mm or 4/6mm aggregate which is then rolled into the surface. Prior assessment of the pavement determines the rate of spread of both glass fibres, nominally 60-120 grammes per sq metre and polymer modified binder, which are applied relative to the severity of cracking and condition of the existing surface.

Benefits

Fibredec SAMI has distinct advantages over conventional crack inhibitor materials:

- Because Fibredec SAMI is sprayed in-situ, there are no adhesion problems and the membrane cannot ruck or tear.
- Can be trafficked between laying and overlaying. The final surface course need not be applied immediately, making Fibredec SAMI both practical and convenient to use.
- Faster application than conventional SAMIs, therefore minimising traffic disruption.
- Extremely economical – both in terms of its initial costs and the time savings gained through speed of application.



- The aggregate allows the SAMI to be trafficked by the construction plant that applies subsequent asphalt layers with minimum delay.
- The process is fully mechanised using specifically designed machinery.

Proven Performance

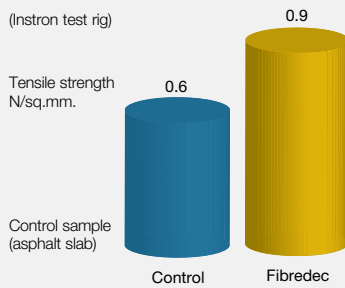
Ulster University confirmed the Nottingham results, while Australian evaluation studies have endorsed the system's performance in live situations. The use of Fibredec as a SAMI significantly inhibits the propagation of reflective cracking in an asphalt overlay. In each of the three tests conducted, the samples using Fibredec out-performed the samples where no SAMI was used.

The use of Fibredec was shown to enhance the performance of an overlay by approximately 30% (fatigue and tensile stress) and wheel tracking tests by 300%. The benefits and ease of application of the sprayed in-situ Fibredec membrane were also noted and compared favourably with the associated difficulties of laying a conventional woven geotextile.

Tensile Test

(Instron test rig)

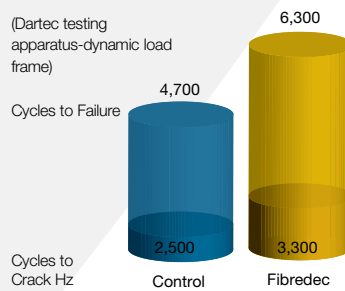
Tensile strength
N/sq.mm.



Fatigue Test

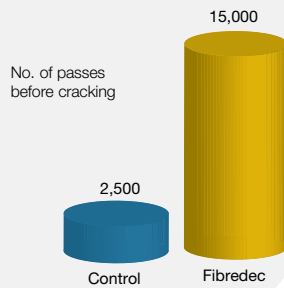
(Dartec testing apparatus-dynamic load frame)

Cycles to Failure



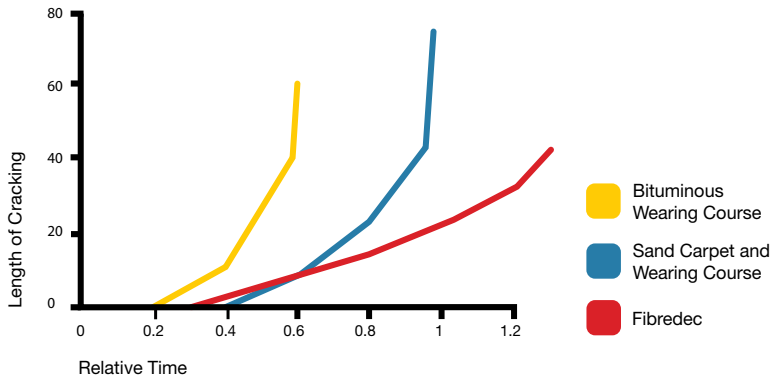
Wheel-tracking Test

No. of passes
before cracking

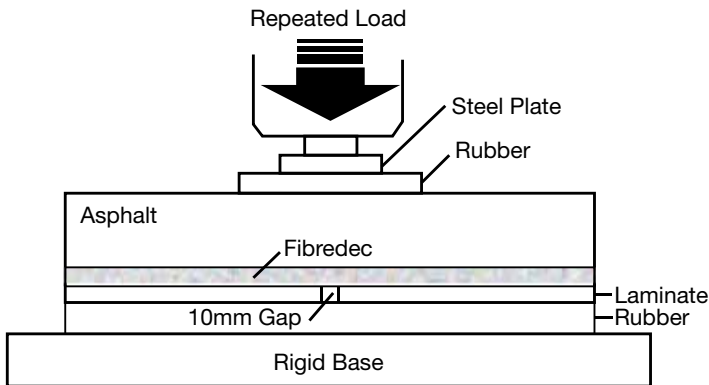


Proven Performance continued

Result of Traction-Fatigue Test



Simulative Reflection Cracking Test



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