



TECHNICAL BULLETIN #21

Strain Alleviating Membrane (SAM)

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Description

A SAM is a strain alleviating membrane treatment used to absorb strains that can cause reflective cracking in sprayed seal. A SAM is applied as a sprayed seal and comprises of a polymer modified binder, covered with a sealing-grade aggregate. The SAM is generally applied to pavements that are cracked or there is some expectation to crack. The SAM also waterproofs an existing cracked pavement surface.

There are two categories of pavement movement which can cause cracking;

Slow Rate Movement, where the movement is due to volumetric changes in the pavement caused by temperature or seasonal changes (temperature or moisture), and chemical changes (eg cement stabilisation).

Rapid Rate Movement, where the movement is traffic induced causing fatigue cracking.

Materials

Where required, crack seal the existing surface cracks prior to applying a SAM, using either SAMIfilla HM or SAMIfilla EC.

The type of modified binder used in a SAM is very important and is usually determined by the rate of movement (see AustRoads technical report AP-T41/06):

Slow Rate Movement – Use either SAMIseal 3, PolySeal or SAMIseal S45R

Rapid Rate Movement – Use either SAMIseal 5 or SAMIseal 6, SAMIseal S45R or SAMIseal S55R.

Cover material should be an approved pre-coated spray seal aggregate.

Where large cracks are present and where movement is >0.5mm, a geotextile may be considered to be used in association with the SAMIseal binder.

Application

When carrying out the seal design, the appropriate SAM PMB Factor (PF) must be included to ensure the correct application rate is determined. The PMB factor is available from either AustRoads Technical Report AP-T68/06 titled "Update of AustRoads Sprayed Seal Design Guide Method" (Table 4.1), or the NSW Roads and Traffic Authority's Sprayed Sealing Guide Section 4 "Design" Edition 2 – April 2002 (interim).

The pavement surface temperature should be a minimum of 25°C at the time of spraying the SAMIseal binder.

For heating, holding and spraying temperatures of SAMIseal binders please refer to SAMI's technical bulletin #46.

Where a SAM is to be applied directly to a Portland Cement Concrete surface, an application of SAMIprime should be applied prior. The concrete surface must be thoroughly cleaned before the application of the prime.

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