

TECHNICAL BULLETIN #27

SAMIfilla HM

Hot Applied Rubberised Joint & Crack Sealant

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Description

SAMIfilla HM is a specially formulated hot applied rubberised joint and crack sealant for flexible bituminous and concrete pavements which exceeds the specification requirements for hot applied sealants as specified by State Roading Authorities, AS and ASTM test procedures. The specification is shown in Table 2.

SAMIfilla HM uses elastomeric polymers to provide the excellent properties and performance required for joint and crack sealing. The recommended ambient service temperature range is 0°C – 45°C.

Benefits

- Low stiffness, highly elastic and good memory
- High softening point
- Excellent resistance to oxidation and u.v. degradation
- Excellent adhesion to most surfaces
- Water tight
- Able to seal any width of joint or crack
- Immediately traffickable after surface binding

Applications

Crack Sealant

- Any flexible asphalt, spray sealed bitumen or concrete pavement with cracks from 1mm up to 40mm

Joint Sealant

- Sealing joints in asphalt pavements or bridge decks.
- As a sealant in concrete pavements for construction or widening joints.
- For concrete and steel water tanks, reservoirs
- Around asphalt patches
- Under fibreglass reinforcement strips
- For expansion joints on bridge decks (refer SAMIfilla Bridge Joint System - Technical Bulletin #26).

Joint/Crack Preparation

The key to a successful application is the preparation of the surface and a clean, dry surface is recommended. Numerous methods can be used, including a heater/blower or compressed air, including the application of a compatible primer, SAMIprime (refer to Technical Bulletin #35).

Priming

It is generally recommended that in all applications, priming with SAMIprime will improve adhesion, especially in concrete and steel surfaces.

The SAMIprime can be either brushed or spray applied to ensure a uniform coverage over the joint/crack at a rate of 0.3 to 0.4 litres/m² and allowed to dry (usually 10 to 15 minutes) prior to applying SAMIfilla HM.

SAMIfilla Preparation

It is recommended that SAMIfilla HM is melted in a purpose built unit that allows the product to be safely handled at the application temperatures of between 170°C - 190°C. During the heating process the SAMIfilla HM should be gently stirred regularly to avoid localised heating. Temperatures greater than 200°C are not recommended or necessary. The viscosity of SAMIfilla HM at application can be controlled by the temperature at application. Higher temperatures will reduce the viscosity for improved penetration for narrower cracks or in low temperature applications, eg. night work.

Application Temperature Range

SAMIfilla is pourable at approx. 135°C, with the ideal application temperature being 160°C - 190°C. Regular gentle stirring is recommended during heating.

Application

Numerous methods can be used to successfully apply SAMIfilla HM and the joint/crack may be striped to provide extra protection. On cooling to ambient temperature the SAMIfilla HM will contract in volume by 5% - 10% and care should be taken to ensure adequate SAMIfilla HM is applied, allowing for contraction.

Note: Care should be exercised where an asphalt overlay is to be placed over joint/cracks that have been treated with any hot applied joint filler. Ideally the joint sealants should be under-applied to allow for expansion when the hot asphalt is applied, otherwise migration of excess joint sealants into the asphalt may cause instability and subsequent cracking of the overlay.

Surface Blinding

To allow immediate trafficking after joint/crack treatment it is recommended that a light application of hydrated lime is spread over the SAMIfilla HM to avoid pick up.

To provide additional skid resistance, the spreading of clean 5mm aggregate to the surface of the SAMIfilla HM prior to cooling may assist.

Coverage Rate

Table 1 below will assist in estimating the quantity of SAMIfilla HM required.

Crack/Joint Depth (mm)	Crack/Joint Width (mm)					
	5	10	20	25	30	40
5	40	20	10	8	7	5
10	20	10	5	4	3	2.5
20	10	5	2.5	2	1.5	1.25
25	8	4	2	1.6	1.3	1.0

Table 1 - Lineal metres per kilogram of SAMIfilla HM for varying widths and depths of joints/cracks not allowing for overbanding

Typical Specification

Test Reference	Test	Units	SAMIfilla HM
ASTM D5	Penetration at 25°C	dmm	20 - 50
ASTM D5329 (12)	Resilience at 25°C recovery	%	report
ASTM D5329 (8)	Flow at 70°C, 72 hours	mm	report
RTA T505** or AS 2341.18	Softening point	°C	90 min.
MBT 11**	Brookfield viscosity at 180°C, spindle #29	Pa.s	3 max.
RTA T736	Flow at 60°C, 5 hours	mm	5 max.
SAMI-IT-09B-7	Flow at 70°C, 5 hours	mm	report
AS 2341.11	Elongation at 25°C	%	300 min.
SAMI-IT-09B-15	Relative density at 15°C	ratio	1.05 min.
ASTM D5329 (18)	Low temperature flexibility, over a 90° angle bend without cracking	°C	0

** routine tests

Table 2 – Typical Properties of Joint Sealing Product

Availability Packaging & Storage

SAMIfilla HM is packaged in a special soluble plastic and packed in a cardboard box. Each box of SAMIfilla HM contains 20kg of product and packed on pallets containing 30 boxes, which can be stacked 2 pallets high. SAMIfilla HM has an indefinite storage life and boxes should be stored under cover.

NOTE: Whilst every care is taken in the preparation of this bulletin, no responsibility is accepted for the interpretation of the information contained herein, nor is any warranty expressed or implied for the suitability of the material for a particular application.