ISO 9001
SAI Global

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 and exceeds the specification requirements for hot applied sealants as specified by State Road 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 trafficable 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/m^2 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 the time of application can be controlled by the temperature of the product. Higher temperatures will reduce the viscosity for improved penetration for narrower cracks or in low temperature applications, eg. night work.

Application Temperature Range
SAMIfilla HM 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 (sand may also be used).

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
AS 2341.18**	Softening point	°C	90 min.
AGPT/T111**	Brookfield viscosity at 180°C, spindle #29	Pa.s	3 max.
RMS 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.