



**Marathon
Sealing FZE**

METHOD STATEMENT

Crack Sealing with Rubberized Hot Applied Sealant



Crack Sealing and filling asphalt concrete pavement cracks is a common road maintenance activity. Specialized materials are placed into or above cracks to prevent the intrusion of water and incompressible material into the cracks and to reinforce the adjacent pavement, Crack Sealing & Filling delays the total reconstruction for several years and thereby saving cost.

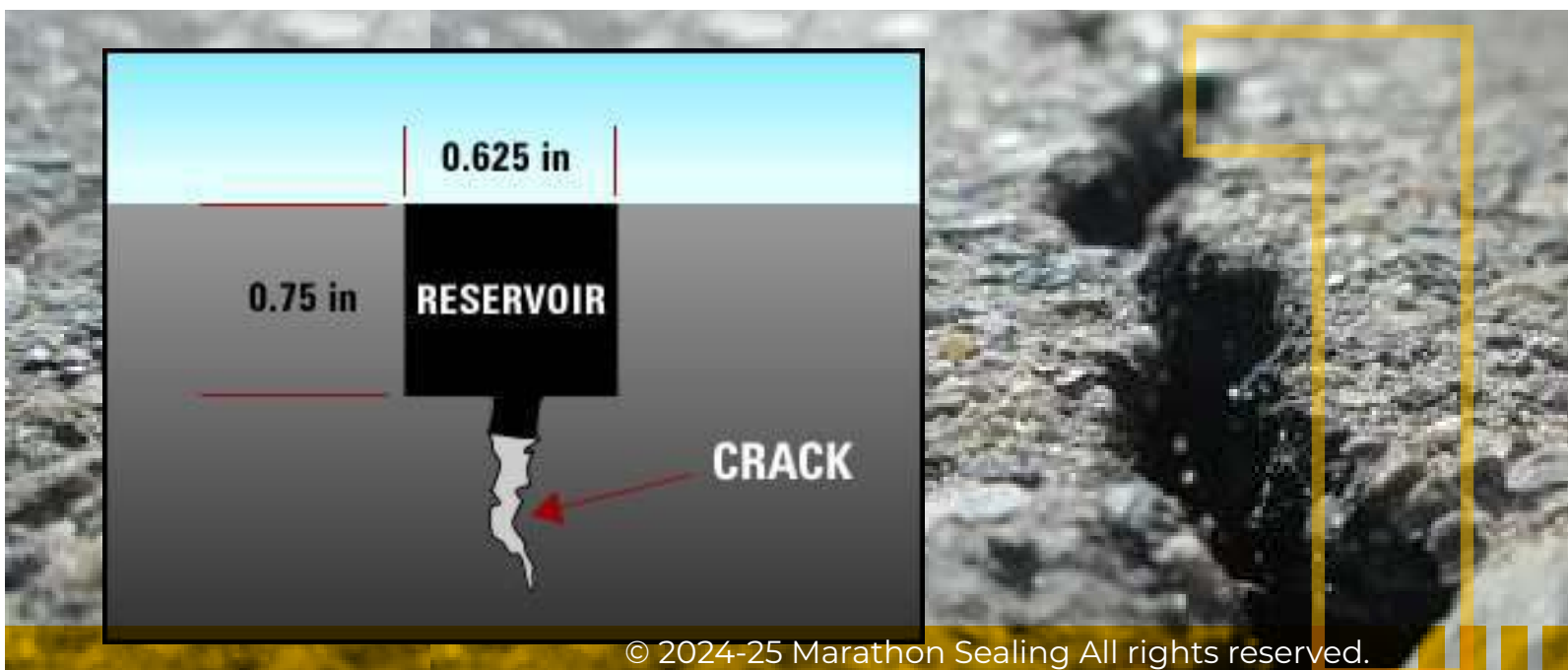
Once an asphalt pavement has cracked, water can enter and create more serious damage, like potholes which occurs when the base becomes saturated and weakens. This reduces support of the bituminous pavement resulting in its deterioration. The rate of deterioration is related to traffic loading and severity of environmental conditions (moisture, freeze/thaw cycles, etc.). Sealing and filling cracks in asphalt pavements are important preventive maintenance treatments for achieving a good service life. Properly implemented crack sealing and crack filling can minimize the intrusion of water and sand into the underlying layers of pavements.

SEALING PROCEDURE

- 1. Site Investigation:** Site need to be thoroughly inspected before execution.
- 2. Crack preparation:** Cracks need to be routed using a crack router.
- 3. Cleaning:** Routed Cracks need to be cleaned in two steps.
- 4. Sealant application:** Sealing the Cracks.
- 5. Curing:** Sealed cracks need to be properly cured before Opening to traffic.

1. SITE INVESTIGATION:

Site needs to be thoroughly investigated to decide whether the pavement can be repaired using Crack Sealing. Crack density should not exceed approximately 20% (linear feet of cracks per square feet of pavement area). The surrounding pavement should be at range of 70 as PCI value.



2. CRACK PREPARATION:

Crack routing helps make crack sealing more effective. When crack sealing and filling is done without routing, the sealant usually settles towards the top of the crack and never reaches the bottom. This means that there is still damage present beneath the pavement surface, which can lead to further degradation. By using crack routing and opening up the crack, sealant can reach the bottom of the crack.

Also, crack routing extends the life of the pavement. By opening a crack, a reservoir is created, which allows the sealant to adhere properly and evenly to the side of the crack. During the winter, when temperature changes cause the crack to expand, the reservoir prevents damage from occurring and the sealant remains in place.

When crack sealing is done without crack routing, the sealant often isn't properly bonded to the sides of the crack. This means that when temperatures drop and pavement starts to shift, the crack can be reopened and water can seep in, causing more damage and requiring another round of repair.

Crack Routing can be done using Crack Routers and shall be operated by a trained operator.

Reservoir Dimensions — Determined as follows:

- Minimum width is 12 mm (Can be modified as per site requirement
- maximum is 38mm (Can be modified as per site requirement).
- Recommended cut depth is 19 mm (Can be modified as per site requirement).



3. CLEANING:

Before placing sealant, all cracks must be thoroughly cleaned to ensure a clean, dry crack channel and to optimize adhesion between the sealant and the pavement surface. Crack cleaning is an essential step in crack sealing since most failures occur as a result of loss of adhesion.

To effectively clean the crack, Routed area shall be cleaned using two steps. Major debris on the crack surrounding is cleaned using Push Behind Wind Blower. The cracks are cleaned using Backpack wind blower/ Air compressor.



4. SEALANT APPLICATION:

After Cleaning, approved sealant by Marathon Sealing Team is installed at the recommended temperature by manufacturer at the crack reservoir. Sealant can be installed with up to 10 mm underfill, flush fil, or with an overband cap that does not exceed 1.5 mm above the pavement surface and not greater than 50mm width beyond crack edges, depending on project specifications. These configurations are achieved using Cones, wand tips, shoes, or squeegees.

Crack Sealant shall be heated in an Oil Jacketed Kettle, and is heated up to a temperature range from 180° C to 200° C. After cleaning, Sealant is applied using a cone keeping 2mm underfill from the surface.





BLOTTING: When crack sealing wide areas, aggregate should be placed on the fresh sealant to maintain the skid resistance. All traffic must be kept off the sealant until it has cured. If traffic is inevitable before the sealant is cured, the seal can be blotted. Blotting is the application of fine aggregate or sand to the non-cured sealant to prevent tracking. The fine aggregate or sand must be applied immediately after the sealant material is placed so that it adheres to the sealant and can serve its purpose.



Type: VIP Crack Sealing

Crack filling/sealing are pavement preservation techniques (used on cracks no wider than 38mm wide). Mastic is a crack repair material that is very effective in fixing cracks and voids that are either too wide for traditional hot-pour crack sealant or are cupped and significantly impacting ride quality. Therefore, it is considered a next level Of crack repair when traditional crack filling is not effective.



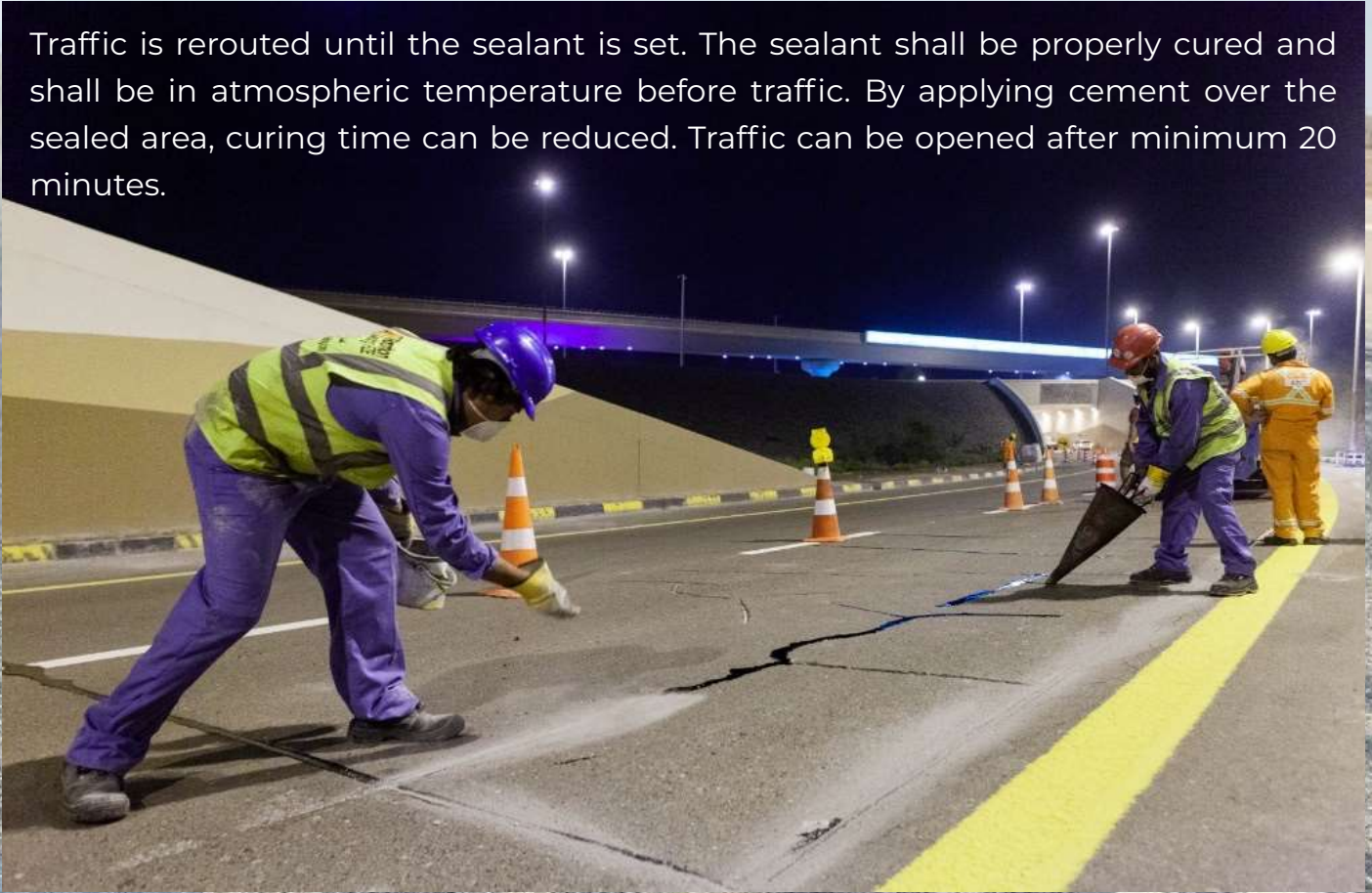
Unlike traditional hot-pour crack sealants, mastic has fine aggregate and polymer added into the material making it load-bearing. It has a reasonable life cycle cost when used to repair and improve ride quality of cupped and wide cracks. This is also a good repair material for deteriorated longitudinal cracks. It requires a high level of care during installation to ensure good ride quality improvement.

Mastic requires a good solid pavement surface to bond to; therefore, the existing pavement surface should be structurally sound and not highly raveled or deteriorated. Mastic manufacturers have different limitations on lift thickness and depth of repair.



5. CURING:

Traffic is rerouted until the sealant is set. The sealant shall be properly cured and shall be in atmospheric temperature before traffic. By applying cement over the sealed area, curing time can be reduced. Traffic can be opened after minimum 20 minutes.





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