

# Method statement for labour based construction of:

## Crack sealing – modified bitumen emulsion

### Definition

This method describes the preparation and sealing of cracks in pavement surfaces less than 5mm wide, using modified bitumen emulsion

### Application

Road pavement distress in the form of cracking is largely due to traffic loading, age of a specific layer, weather conditions and material types used in road layers. If left unattended, especially through the wet season, cracks will accelerate the deterioration of the road condition, often leading to potholing and complete failure. Consequently the repair of cracks in the road surface needs to be actioned as a matter of urgency.

The cold modified bitumen emulsion can be applied to medium activity cracks less than 5 mm in width by hand and does not require any heating.

### Material requirements

**Modified emulsion:** - A suitable modified bitumen emulsion obtained from a reputable supplier.

**Crayons:** - for the marking out of the cracks to be treated.

**Paint:** - for the marking out of larger areas that require. Spray cans can also be used.

### Plant and equipment requirements

Item	Number of items
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Wheel barrows	2
Wire brushes	2
Soft bristle brushes	2
Block brushes	2
Bass brooms	2
Squeegees	2
Cans or applicators	2
Compressor	1

### Labour requirements

Below is the typical composition of a crack sealing team. Production rates for this operation are difficult to predict given the many factors that affect the process.

Activity	Number of workers
Supervisor	1
General assistants	8

Traffic control personnel will need to be added to these numbers for a complete team complement. The amount of flagmen, stop/go boards and cones or delineators will be determined by the extent on the area to be repaired.

### Construction

#### Site Preparation

The area to be repaired should be inspected together with the client or his agent and all the cracks that require sealing should be marked using the paint and the soft bristle brush, the canyons or spray cans of paint.

The road needs to be swept clean of all loose material and dust. The wire brush should be used to loosen the material that is lodged in the cracks. This material needs to be swept out

and away from the crack. Next the compressor should be used to blow the cracks clean of all dust and debris to ensure the sealant can adhere to both sides of the crack. Notice should be taken of the wind direction so as not to have the dust blown back into the cracks.

### **Sealing of cracks**

The sealant is poured into the cracks from the can or applicator that should have a spout to help direct the emulsion into the crack. The emulsion should be brushed into the finer cracks the soft bristled brush. The emulsion can be diluted with up to 10 % water to assist penetration into fine cracks. After sealing, the emulsion should be allowed to set.

If the emulsion remains tacky on the surface, a thin blinding layer of -4.75 mm crusher dust or course sand can be swept over the cracks to absorb the residue. Excess material should be swept from the road surface.

### **Traffic control**

During the crack sealing operation the section of road under repair should be closed to traffic using the correct signage to divert the traffic. The road can be opened to traffic as soon as the emulsion has broken and set.

### **Packing up and cleaning of equipment**

The signage can be moved to the next section to be repaired once the emulsion has set.

The tools should be cleaned with water if the emulsion has not yet broken and turned black. If the emulsion has broken the equipment will need to be cleaned with mineral turpentine or paraffin.

### **Quality control**

There should be no deleterious material e.g. oil and other contaminants near the cracks that will adversely affect the performance of the sealant.

The emulsion should not be allowed to drip onto the road surface between cracks being sealed thereby contaminating the road surface.

Before sealing, the cracks should be clean and free of dust. If not, the bitumen emulsion will not be able to adhere to both sides of the crack, allowing moisture to penetrate the crack which will defeat the purpose of the operation.