



SPECIFICATION FOR REPAIR OF SURFACE DEFECTS

1. SCOPE

This specification sets out the requirements for crack sealing, repair of scabbing, stripping and bleeding, and the second coat sealing of pavement repairs.

To achieve the long term maintenance objectives of Transit New Zealand, the following principles shall be followed:

- (a) The Contractor shall undertake a detailed inspection in order to meet the response times and shall mark on the road the locations of proposed repair of surface defects.
- (b) The Contractor shall schedule the location of all repairs of surface defects required, indicating priority work, and shall submit the schedule together with the proposed method of repair and work programme to the Engineer.
- (c) The Contractor shall inspect the marked locations and submit a proposed method of repair and work programme to the Engineer.
- (d) The Engineer shall review the Contractor's schedule of methods programme, adjust for technical and budget restraints (if any) and return to the Contractor.
- (e) The Contractor shall carry out repairs in accordance with this specification and the adjusted schedule, and be responsible for subsequent maintenance of repairs during the Contract period.
- (f) The above shall be carried out within the response times specified.
- (g) Only work on the adjusted schedule will be paid for.

2. RESPONSE TIMES

The response time to carry out work in Clause 1 of this specification shall be as scheduled by the Engineer in the Contract documents.

3. **WORK SCHEDULE**

All work scheduled by the Contractor shall be in terms of Transit New Zealand State Highway Route Positions and shall list priority work for particular road groups.

No claims for extras will be considered if the Contractor does not work off the Engineer's schedule or carries out work not scheduled or work in excess of the scheduled areas unless authorised by the Engineer.

4. **DEFINITIONS**

4.1 **Crack Sealing**

For the purpose of this specification, there will be three types of cracking as follows:

(a) **Alligator Cracking**

Also known as chicken wire or block cracking. This type of cracking includes all polygon shaped cracking, irrespective of the size of the polygon.

(b) **Isolated Cracking**

This type of cracking includes all longitudinal, transverse and diagonal cracks as well as large rectangular cracks which are to be treated separately.

(c) **Slipping Cracks**

Slippage cracks occur only in thin asphaltic concrete wearing course. They are usually crescent shaped and point in the direction of the thrust of the wheels on the pavement.

Crack sealing will be treated with or without filling of the crack.

4.2 **Second Coat Sealing**

Second coat sealing for the purpose of this specification is the application of a seal coat over a previously applied seal coat to pavement repairs to provide both waterproofing and surface texture consistent with the surround pavement.

4.3 Scabbing

Scabbing is the progressive loss of chip from the seal coat, generally during the initial wintering period after sealing.

4.4 Stripping

Stripping is the displacement of binder from the chip generally through wet conditions.

4.5 Bleeding and Flushing

Bleeding and Flushing are described in TNZ Specification C1 Clause 11.

5. METHODS

5.1 Second Coat Sealing

Chips used for second coat sealing shall be similar in size to the adjacent area.

Binder shall be applied by any suitable means that will ensure an even and appropriate binder application rate. The Contractor shall ensure that a waterproof surface is achieved.

5.2 Crack Sealing

The Contractor shall ensure that cracks are effectively sealed and shall be responsible for the chip size, binder type and quantity proposed for use in the particular repair.

The Contractor shall ensure that the final surface texture matches the existing and that no bleeding or flushing occurs during the Contract period.

Cracks requiring filling are covered by 5.3 below.

5.3 Crack Filling

When crack filling either prior to sealing or as a single treatment is specified, the Contractor shall after preparation of the surface in terms of clause 5.5.2, fill the cracks with one of the following materials, or an approved alternative material.

- (a) Cracks not wider than 5 mm

An asphaltic binder.

- (b) Cracks wider than 5 mm but not wider than 20 mm

An asphaltic binder with filler (slurry). A waterproofing seal coat shall be applied following crack sealing.

- (c) Cracks wider than 20 mm

A fine premix material. A light tackcoat shall be applied to the sides of the cracks to be filled, and a waterproofing seal coat shall be applied following crack sealing.

- (d) Polymer modified proprietary materials

Such materials shall be applied strictly in accordance with the manufacturers' instructions. These may be used for all cracks over 5 mm in width. In asphaltic concrete, polymer modified material 100 mm wide shall be applied over all cracks as a stress-absorbing bandage.

5.4 Slippage Cracks

Where removal and replacement of material is required, it shall be performed to the requirements of TNZ Specification C4 Digout Repairs in Flexible Pavements.

5.5 Repair of Scabbing and Stripping

5.5.1 Extent of Area to be Treated

Only the area of scabbing or stripping shall be treated and this shall be marked on the road surface.

5.5.2 Surface Preparation

Areas to be treated shall be free from excess moisture and prepared by removing any grit, dirt, detritus or other deleterious matter prior to the application of binder.

5.5.3 Alternative Treatment for Stripping

Where the Contractor considers there to be adequate bitumen present, a proposal to liven the binder using diluent may be submitted to the Engineer for approval.

5.5.4 Application of Binder

Binder shall be applied in a fine mist spray.

(a) Scabbing

Binder shall be applied only to the area of scabbing. Care must be taken to avoid spraying binder on to the surrounding pavement.

(b) Stripping

Binder shall be applied to the width specified by the Engineer.

5.6 Repair of Bleeding

5.6.1 Sealing Chips

Chip size shall be no larger than the surrounding surface, but sufficiently large to prevent subsequent flushing through binder rise.

Chip may be hand spread, but care must be taken to avoid over-application.

5.7 Repair of Flushing

5.7.1 Use of the Pavement Burner

This method may be considered where the amount of excess bitumen is not excessive and the burning process will not cause unacceptable public nuisance.

Pavement burning shall not be used by the Contractor as a treatment for flushing in areas not programmed for resealing. The area of burning shall be strictly limited.

The Contractor will be responsible for the programming of the burning activities and providing all accommodation, transport, traffic control, safety precautions.

5.7.2 Diluent and Chip

5.7.2.1 Chips

Precoated chip or heated chip shall be produced by a method approved by the Engineer.

5.7.2.2 Application of Diluent

Sufficient diluent shall be sprayed on the road surface under suitable weather conditions to liven the binder to ensure a satisfactory chip take.

5.7.2.3 Application of Chip

Chip spreading must follow immediately on spraying of the diluent.

6. TRAFFIC CONTROL

At all times during the work or activities included in this specification the Contractor shall take responsibility to ensure all traffic control is carried out in accordance with the Specification for Temporary Traffic Control, TNZ G/1.

7. PERFORMANCE CRITERIA

The performance of the Contractor during the Contract period will be measured by the following criteria:

- (a) That all repairs are carried out in accordance with this specification within the response times stated.
- (b) The chip sealing does not flush, bleed or strip before the end of the defects liability period, and there are no loose chips on the road surface on completion of the repair.
- (c) That material used for crack filling and sealing shall remain in place, waterproofing the crack, until the end of the defects liability period.
- (d) That treatment of flushing, scabbing or bleeding leads to a significant improvement in road condition.
- (e) That all work is carried out with regard to safety of traffic both during and after completion of the repair and in accordance with the Specification for Temporary Traffic Control, TNZ G/1.

8. BASIS OF PAYMENT

Rates tendered shall include allowance for all costs associated with the work, including maintenance of the repairs.

8.1 Alligator Crack Sealing and Second Coat Sealing

Payment based on area sealed will be made at scheduled rate.

8.1.1 Natural Rubber Latex

When the addition of natural rubber latex or PMB is approved by the Engineer, the appropriate scheduled rate for alligator crack sealing will be increased by the additional amount tendered for this material.

8.2 Filling of Cracks Prior to Alligator Crack Sealing

Payment will be made at the scheduled rate appropriate to the crack width for the measured length of crack filled.

8.3 Filling of Isolated Cracks and Slippage Cracks

Payment will be made as for item 8.2.

8.4 Scabbing and Stripping

Payment will be made at the scheduled rate for the area in square metres repaired in accordance with this specification.

8.5 Bleeding

Payment will be made at the scheduled rate for the area in square metres repaired in accordance with this specification.

8.6 Flushing

Payment will be made at the unit schedule rate appropriate to the method of treatment. The diluent and chip rate shall include for precoating or heating as necessary.