TNZ C5 : 1993

SPECIFICATION FOR REPAIR OF SURFACE OPENINGS AND MINOR SURFACE LEVELLING

1. SCOPE

This specification applies to the correction of settlement deformation, including depressions and wheel path rutting and settlement due to surface openings in surfaced roads.

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 repairs or surface levelling.

(b) The Contractor shall schedule the location of all repairs or levelling required, indicating priority work, and shall submit the schedule together with the proposed method of repair and work programme to the Engineer.

(c) The Engineer shall review the Contractor's schedule of location, methods and programme, adjust for technical and budget restraints (if any) and return to the Contractor.

(d) The Contractor shall carry out repairs or levelling in accordance with this specification and the adjusted schedule, and be responsible for subsequent maintenance of the work.

(e) The above shall be carried out within the response times specified.

(f) 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 and type of repair required 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. SURFACING

The final surfacing shall be of the same type as the surrounding pavement.

5. SURFACE SHAPE

There shall be no depressions in the finished surface that will allow water to pond.

The surface shape of repairs shall be such that the existing road crossfall is maintained, the deviation when measured with a two metre straightedge shall not be greater than 10 mm, both within the repair and between the existing pavement and the repair, and there shall be no sharp ridges.

6. METHODS OF REPAIR

One of the two following methods shall be used for repairs:

(a) Premix Reshaping

Reinstatement of acceptable shape with premix placed and compacted on the existing surface, followed by sealing where required by the Engineer.

(b) Rip and Remake

Removal of existing surfacing materials, followed by placement and compaction of unbound basecourse to acceptable shape, and first coat sealing or premix surfacing where the surrounding road is surfaced with premix.

6.1 Premix Reshaping Method

6.1.1 Design of Premix

Refer TNZ Specification C1, Clause 13.

6.1.2 Extent of Repair

The perimeter of the area within which re-shaping is required shall be established by the Contractor. The basic area shall be the minimum required with such additional area necessary to establish straight lines to the edge of the repair and shall be clearly marked on the road surface.

6.1.3 Preparation of Surface

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 a tack coat.

6.1.4 Tack Coat

A tack coat of quick breaking emulsion shall be applied prior to placing any premix material. Tack coat shall be applied to a dry surface and shall have "broken" just before premix is placed.

6.1.5 Construction

6.1.5.1 General

Premix material shall be constructed so that upon completion of the work a uniformly dense and stable layer which does not weave or creep under the action of compaction equipment or road traffic is produced. Segregation and resultant hungry and fatty patches will not be acceptable.

Compaction equipment employed shall be appropriate for the shape of the surface being corrected. Drum and plate dimensions shall be so chosen that edge compaction is attained without bridging.

Areas where tack coat has not been covered with premix material shall also be treated with sand or grit to prevent pick up.

6.1.5.2 Additional Requirements for Correcting Deformations in Friction Course Surfaces

To ensure satisfactory jointing of the new friction course finishing layer with the adjacent layer, it will be necessary to remove some of the old surfacing material from around the perimeter of the area to be reshaped. Joints shall be prepared to provide a true line and vertical face by cutting the perimeter with a saw or similar. Straight line final treatment boundaries shall be established by the Contractor in accordance with clause 6.1.2 prior to cutting. The depth of material to be removed shall be such that a finishing layer of the required thickness can be constructed over the entire area of reshaping.

Where the depth of deformation is greater than the thickness of the surfacing coat, it will be necessary to construct a levelling course before the waterproof coat is applied.

No areas which pond water shall be allowed before the waterproof coat is applied.

A waterproof sealcoat using a grade 5 chip shall be applied before the friction course is laid.

The friction course coat shall not be less than 15 mm thick and will generally correspond with the thickness of adjacent friction course surfacing.

6.2 Rip and Remake Method

6.2.1 Marking Perimeter and Measuring Extent of Repair

The perimeter of the area shall be marked in accordance with clause 6.1.2.

6.2.2 Cutting of Perimeter

The perimeter of the repairs in this category shall be cut with suitable cutting equipment, before executing the remainder of the work so that the sealed surface outside the perimeter of the repair area is not disturbed to the extent that the bond between the sealed surface and the basecourse is destroyed. The cut line shall not deviate from a 1 m straight line by more than 50 mm. Ragged edges will not be permitted.

6.2.3 Thickness of Surfacing to be Removed

Generally the thickness of surfacing material to be removed will not exceed 100 mm and in many cases will be less than that, except that when repairing surface openings, material shall be removed to the full depth of the basecourse layer.

When removing the existing seal, care shall be taken to remove the minimum practical amount of underlying pavement material.

6.2.4 Makeup Material

Basecourse material may need to be imported to replace surfacing and other material removed to dump.

6.3 Construction of Surface Sealing

Where practicable a surface sealing coat shall be applied on the same day the repair backfill is completed. If this is not achieved the Contractor shall take positive steps to ensure that the repair surface does not unravel allowing loose metal on the road surface.

The Contractor may maintain the integrity of the repair by application of a temporary holding coat providing this is not detrimental to the final seal coat.

A temporary holding coat shall be applied if the Contractor cannot complete a first coat seal within one week.

6.3.1 First Coat Chip Sealing

On completion of the backfilling, or within one month if an initial waterproof sealing coat has been provided, the surface of a repair in a chip sealed surface shall be sealed with a first coat seal. Alternative sealing methods may be approved by the Engineer (refer TNZ C1 Clause 11). The seal shall overlap the existing seal by between 100-150 mm and upon completion shall present a waterproof surface with a tidy appearance of rectangular shape. Ragged edges will not be acceptable.

7. PERFORMANCE CRITERIA

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

(a) That all work is carried out in accordance with this Specification within the response times stated.

(b) That completed work maintains a smooth riding surface within the surface deviation specified for the contract period.

(c) No flushing, bleeding or scabbing of the sealed surface of the repair.

8. BASIS FOR PAYMENT

The tendered rates shall include allowances for all costs associated with the work, including maintenance of the repair, temporary seal coats and shall be paid on the following basis.

8.1 Premix Reshaping Method

8.1.1

Premix other than friction course, paid on an area basis, and assuming maximum depths of nil over high areas, 80 mm over low areas.

8.1.2

First coat seal paid on a schedule rate based on the area of the repair.

8.1.3

Friction course single layer, paid on an area basis.

8.2 Rip and Remake Method

8.2.1 Existing Chip Sealed Surface

8.2.1.1

Removal of seal and existing pavement material, supply and addition of makeup material, and first coat sealing. Excavated depth less than 100 mm, paid on an area basis.

8.2.2 Existing Premix Surfacing

8.2.2.1

Removal of surfacing and existing pavement material, supply and addition of makeup material to underside of premix layers, paid on an area basis.

8.2.2.2

Premix layer 25-50 mm in depth plus seal coat on basecourse paid on an area basis.