SECTION 6 - PAVEMENT REHABILITATION

6.1 SCOPE

This Specification applies to the treatment of those areas of pavement which are to be rehabilitated by digouts, asphalt smoothing and cracksealing. These treatments either singly or with others will by their nature be used only on parts of the carriageway.

The areas of excavation, crack sealing and smoothing are to be marked on site and approved prior to the work commencing.

6.2 DIGOUTS

6.2.1 Shallow Excavation

Excavation shall be to a depth (minimum of 200mm) which removes all unsuitable weak, distressed and loose material to expose a firm level base which, with or without compaction, achieves the required CBR as follows:

i) CBR value greater than 20 down to 300mm below base of excavation.

ii) CBR value greater than 15 at a depth of 300mm or greater.

The excavated material is to be removed and disposed of unless directed otherwise. The Contractor shall be liable for the repair of any undermining or overbreak.

6.2.2 Existing Subgrade Layer

Scala penetrometer tests shall be carried out as detailed in Section 2 - Testing or as dictated by the size of the digout. Should the test not meet the requirements specified, the area shall be reworked until such time as these requirements are met.

Compaction shall not continue if the material shows signs of excessive weaving or heaving, until the problem has been resolved.

The existing subgrade shall be tested to ensure the required CBR has been achieved. If the strength of the existing subgrade does not meet the required criteria then it shall be undercut and replaced with imported subgrade material.

The entire surface of the existing subgrade shall be made smooth, firm and uniform. The reduced level of any point shall be within the limits 0mm above to 50mm below the designated or nominated level.

6.2.3 Imported Subgrade (Run Of Pit Sand) Layer

The imported subgrade material shall be "pit sand" as specified in Section 1 - Materials, and shall comply with the requirements of Section 3 - Pavement Construction.

6.2.4 Basecourse In Areas Of Dig Out

No basecourse layers shall be placed without the Engineer's approval of the surface of the subgrade. The basecourse layer shall consist of GAP 40 or NZTA M4 AP40 placed in layers not exceeding 200mm in depth. The basecourse shall be compacted to the CBR specified.

The finished basecourse surface shall have a tight stone mosaic surface, with no loose metal, and be a suitable level for the application of a tack coat and an asphalt layer. A compacted integral skin of GAP 20 may be required to ensure the surface requirements are achieved.

6.2.5 Asphalt Patch Surfacing

After the basecourse surface has been approved by the Engineer, a tack coat of 180/200 cationic emulsion shall be applied at a rate of 0.3 litres per square metre residual at 15°C.

The surfacing shall consist of a Mix 10 Asphalt nominally 30mm deep (compacted) and laid in accordance with NZTA Specification P/9 Construction of Asphaltic Concrete Paving.

The asphalt surface shall be flush with and neatly abut the surrounding undisturbed chip seal surface. No depression or irregularities that would cause water to pond will be permitted in the finished surface.

6.3 ASPHALT PRE-LEVELLING & LEVELLING COAT

The areas that require pre-levelling and/or levelling prior to the work commencing shall be marked out.

The areas concerned shall be swept until all debris and loose chip have been removed. A tack coat of 180/200 penetration cationic emulsion shall be applied to the surface at a rate of 0.3 litres per square metre.

The following mixes shall be used unless otherwise specified.

0-40mm depressions	Mix 10
65mm depressions and above	Mix 20 + Mix 10

Where the depth of asphaltic concrete exceeds 40mm but is less than 65mm, the asphaltic concrete shall be layed in two layers of Mix 10. Where the depth of asphaltic concrete exceeds 65mm the Contractor shall lay a Mix 20 regulating course to within 30mm of proposed finished surface level and then finish with a layer of Mix 10.

The asphalt layers shall be placed in one continuous run after the application of the tack coat and compacted by mechanical means. The edges shall be feathered so that there is no appreciable edge above or below the existing sealed surface.

The surface shall be smooth and conform to the crossfalls dictated by the existing surrounding sealed surface. Under no circumstances will surface irregularities that may hold water be permitted.

6.3.1 Measurement of Asphalt

Where Mix 10 and Mix 20 Asphaltic Concrete Pre-levelling and/or levelling Course is to be measured in tonnes, the following requirements shall be met.

Prior to delivery on site the Mix 10 and Mix 20 asphaltic concrete regulating course delivery truck must be weighed at a weighbridge with a current certificate of accuracy from an A.P. accredited agency. The Certificate of Compliance shall be in accordance with regulation 15F of "Weights and Measures - 1987".

If there is excess asphaltic concrete from any delivery then the truck must return to the same weighbridge utilised prior to delivery for the nett weight of asphaltic concrete used on site to be calculated.

All dockets are to indicate:

- time and date of dispatch of asphaltic concrete delivery truck
- time and date of weighing of delivery vehicle upon return to weigh bridge
- weight of vehicle upon departure from weighbridge
- weight of vehicle upon return to weighbridge
- net weight of asphaltic concrete delivered to site

Dockets shall be forwarded to the Engineer as soon as practicable after the delivery of the asphaltic concrete to site.

Prior to the work, the Contractor shall submit for approval a conversion table showing the equivalent tonnage per cubic metre of each type of material to be used.

6.4 CRACK SEALING

6.4.1 Preparation And Cleaning

All cracks shall be pressure cleaned, with raised and protruding edges trimmed off and loose material removed. The larger cracks (greater than 5mm) shall be gouged, where necessary, to remove wedged in or non-compressible debris or, when instructed by the Engineer, cracks shall be saw cut. Old filler material in cracks previously treated shall be removed as directed by the Engineer.

The joint cavity shall then be dried thoroughly either by a combination of forced air and heat or by drying naturally.

6.4.2 Inspection

All prepared cracks shall be inspected by the Engineer immediately prior to the sealing work commencing. Any sealant applied without the Engineer's prior approval shall be removed, and the crack again prepared for sealing as set out above.

6.4.3 Crack Treatment

The bonding surfaces shall be primed with a primer compatible with both the existing material and the crack filler. The primer may be sprayed or brushed on and shall be completely dry before the filling material is poured.

The filler material shall be poured or jetted into the crack so that the final level is approximately flush with the road surface. Excess material shall be struck off using a stripper to form a "bandage" which extends 30mm each side of the joint. The primer shall extend 15mm wider than the bandage.

Traffic shall be kept off the treated cracks for a period of time sufficient to allow the sealant to cure.

The finished surface shall be dusted with fine sand, limestone dust, crusher dust or cement to prevent "pick up" by vehicles.

The depth of the filler shall be not less than the width of the crack nor greater than three times the crack width.

6.4.4 Sealant

The filler material shall be Techniflex PMB4, Samifilla, or material with similar specifications and shall be heated on site to the temperature recommended by the manufacturer in a suitable container fitted with a thermometer and a means of mechanical agitation and temperature control.

The temperature shall be strictly controlled to avoid damage caused by overheating and to avoid unsatisfactory behaviour of the sealant due to pouring at temperatures lower than those specified by the manufacturer.

Once the sealant has reached the pouring temperature it shall be discharged into the cracks as soon as possible, and in any case before a period of two hours at the pouring temperature, has elapsed.

Sealant which has been heated and allowed to cool, or has been heated for more than two hours at pouring temperature, shall not be reheated but shall be rejected and removed from the site.