SECTION 4 : RIPPING AND CEMENT STABILISATION

4.1 SCOPE

This Specification applies to the treatment of those areas of pavement which are to be cement stabilised.

4.2 RIPPING

The existing sealed surface and pavement shall be ripped and pulverised to the specified depth to allow shaping and, where required, overlaying of a nominal depth of basecourse as shown on the drawings.

If in the course of the work it becomes apparent that the nominal depth of ripping is not practicable or appropriate the Contractor shall inform the Engineer as soon as possible and shall not proceed without the Engineer's consent to a variation. Likewise the Engineer may order a variation in the nominal depth or extent of ripping.

There shall be no claim for a variation in the rate that this work is included under as a result of a variation in the depth or nature of ripped material unless in the opinion of the Engineer this renders the Contractor's declared plant and methods to be impractical and the use of alternatives is consequently required.

Unless otherwise agreed by the Engineer, overbreak and any consequent backfilling or repair shall be the Contractor's responsibility.

4.3 USE OF RIPPED MATERIAL

All material to be re-used shall be broken down by the ripping and pulverising processes such that it has a particle size no greater than 75mm and a grading that makes its shaping and compaction to a dense stable condition practicable.

The Engineer may reject any material for re-use which in the Engineer's opinion is unsuitable because of its nature, condition, particle size, or grading.

4.4 PLACING, SHAPING AND COMPACTING OF RE-USED MATERIAL AND IMPORTED BASECOURSE OVERLAY

Where the re-used material is to be subsequently overlaid with basecourse it shall be shaped and compacted such that it meets the profile on the drawings to a tolerance of plus 0mm to minus 20mm. Where the re-used material is to form the top of the pavement construction, the tolerances of NZTA Specification B/2 shall apply.

Where imported basecourse is to be overlaid it shall be the Contractor's decision whether or not to compact the re-used material prior to this, except that no layer of uncompacted material shall have a thickness of less than 80mm nor more than 200mm.

The basecourse construction, whether imported or re-used material, shall conform to the specification for basecourse construction given in Section 3 - Pavement Construction.

4.5 CEMENT STABILISATION OF BASECOURSE

4.5.1 Preparation

The rolling and compaction of the pre-stabilised basecourse shall be such that the pavement shape and density approximates that required of the post-stabilised pavement in its final shape.

The standard of finish required of the pre-stabilised pavement shall be such that pot-holing, ravelling and/or rutting does not occur under normal traffic loads.

4.5.2 Supply, Spread and Mix Cement into Pavement

A cement spreader which has no visible dust during operation or filling, apart from that produced from the product falling to the ground shall be used. The spreader shall be self-propelled and have the capability to electronically regulate the spread rate.

The cement shall be evenly spread over the prepared pavement at the specified rate. The application rate shall be checked before cement is applied to the pavement and must not differ by more than one half of one per cent by mass from the cement percentage calculated from the given spread rate. The pavement shall be stabilised to a depth of 200mm, unless specified otherwise.

The material to be treated shall not have cement spread or mixed in rain or if rain threatens. Material to be stabilised shall be within 2% of optimum moisture content.

Mixing shall follow immediately behind the spreader and in no case should there be a delay of more than one hour. After spreading the cement, no traffic shall be allowed to pass over the spread cement until the mixing has been completed.

Mixing shall be carried out, using either single or multi rotor machines, until the maximum particle size is no greater than 40mm. Mixing or remixing operations, regardless of equipment used, shall continue until the mixture is uniform and is free of streaks or pockets of cement.

4.5.3 Compaction

The compaction of the stabilized mix shall be completed within two hours of mixing.

The compaction shall be achieved by the minimum necessary number of passes of compaction plant.

Areas inaccessible to rollers shall be compacted to the required density by other suitable means.

4.5.4 Shaping

After compaction, the treated pavement shall be trimmed to the required shape. This process shall be one of cutting to waste and all surplus material shall be removed from site and disposed of. Shaping to final levels must be completed for all stabilised pavement on the day of stabilising.

4.5.5 Joints

Longitudinal Joints

Care shall be taken to knit materials at all longitudinal joints and overlaps shall be provided during the mixing operation.

Where the works adjoin the existing road surface joints are to be sawcut to give a vertical face.

Transverse Joints

All transverse and construction joints shall be either made in thoroughly compacted material, normal to the centreline of the road, with a vertical face or made by overlapping with the next mixing operation.

Where the works adjoin the existing road surface joints are to be sawcut to give a vertical face.

All loose material will be removed from the joint before the next mix is compacted in place.

4.5.6 Curing

Upon completion of the mixing, pulverisation, compaction and shaping of the cement stabilisation, the Contractor may, with the Engineer's consent, supply and spread uniformly over the entire pavement surface, GAP20 running course aggregate at the specified rate.

Pending the construction of the seal coat the uniform spread of the running course aggregate shall be maintained at all times by dragbrooming. The traffic shall be controlled by temporary speed restrictions and during working hours, it shall be channelled by suitably defined traffic lanes, with frequent transverse shift of the defined lanes to obtain an even spread of traffic over the entire surface. The Contractor shall provide a programme for this traffic management.

The Contractor shall maintain the pavement surface and running course in a damp condition for a minimum of three days.

4.5.7 Defects to be Remedied

Any defects or damage of any nature caused by or resulting from the operations of the construction or maintenance of the pavement course shall be made good immediately.

4.5.8 Cement Contamination

All practicable means shall be used to prevent cement contamination where it is likely to cause harm, nuisance or annoyance to persons or damage to property in any street or public place or in the vicinity of the site.

4.5.9 Signs

The Contractor shall ensure the appropriate signs are placed at the extents of the work to inform the public of the cement stabilisation process, e.g. "Cement Splashes - Wash Car Today".

4.5.10 Sealing, Surface Shape And Roughness

The requirements of Section 3 - Pavement Construction, Section 10 - Road Surfacing and Section 2 — Testing, shall apply to areas subject to "Ripping and Cement Stabilization".