

SECTION EIGHT

ROAD PAVEMENT

8.01 GENERAL

This Section specifies the supply, delivery, spreading and compaction of crushed rock and gravel pavement courses to depths and levels as detailed on the accompanying drawings.

8.02 STANDARDS

The following Australian Standard will form part of this Specification:

AS 1289 "Methods of Testing Soils for Engineering Purposes"

8.03 MATERIALS

1. *Gravel*

The gravel is to consist of natural or artificially mixed aggregate or granular material of hard durable particles and soil or other binder such that the mixture complies with the requirements for grading and physical properties set out below.

Oversize material encountered in deposits from which gravel is produced is to be removed by screening or be crushed to the required size.

The composite material must be free from vegetable matter and lumps or balls of clay.

2. *Salamander*

Salamander is to consist of natural or artificially mixed clean durable material from rock sources, such that the mixture complies with the requirements for grading and physical properties set out below.

The Superintendent may permit a crusher run material to obtain the desired grading.

The composite material must be free from vegetable matter and lumps or balls of clay.

3. *Fine Crushed Rock*

The whole of the fine crushed rock is to be crushed from clean durable quarry spalls of uniform quality throughout and be free from clay, loam, vegetable matter and other deleterious substances.

The material from the plant or stockpile when tested must comply with the requirements for grading and physical properties, set out below.

TOLERANCE ON SIZING

Type of Material	Percentage by weight passing AS Sieve Size (mm) Designated										
	76	53	37.5	26.5	19	9.5	4.75	2.36	1.18	0.425	0.075
Gravel	-	-	-	100	100	100	95 to 100	80 to 90	65 to 75		10 to 25
Salamander	100	95 to 100	73 to 100		57 to 100		30 to 70	20 to 55		10 to 30	5 to 15
40mm Fine Crushed Rock Class 3	-	100	95 to 100	75 to 95	64 to 90	42 to 78	28 to 64	20 to 50		7 to 30	2 to 9
20mm Fine Crushed Rock Class 3	-	-	-	100	95 to 100	60 to 90	43 to 76	28 to 60		10 to 28	2 to 10
20mm Fine Crushed Rock Class 2	-	-	-	100	95 to 100	63 to 83	44 to 64	29 to 47	12 to 20		2 to 6

TOLERANCE OF PHYSICAL PROPERTIES

Type of Material	Los Angeles Abrasion Test Value	Liquid Limit	Plasticity Index	
		Max.	Min.	Max.
Gravel/Salamander	30	35	4	9
Fine Crushed Rock Class 3	26	35	-	10
Fine Crushed Rock Class 2	25	30	-	6

8.04 INSPECTION

The sub-grade and each course of the road pavement must be tested and approved by the Superintendent before the placing of further courses is permitted.

8.05 DELIVERY AND SPREADING

Pavement materials in accordance with Clause 8.03 of this Specification are to be spread to the widths and thicknesses shown on the accompanying drawings.

Pavement materials must not be placed on a wet sub-grade.

The material is to be spread direct from tipping trucks on the prepared base in an even continuous layer, or by use of an approved spreading device, in uniform layers each of which must not exceed 100mm compacted thickness.

Tipping of pavement materials in heaps on the sub-grade or road pavement will not be permitted. Care must be taken to prevent segregation of pavement materials into coarse and fine components.

8.06 COMPACTION

The Contractor is to provide and operate sufficient rollers in accordance with the requirements specified below, together with other plant necessary to compact the pavement material as specified.

Each layer of the pavement is to be compacted with steel wheel rollers of not less than 9 tonne mass with a load intensity of not less than 4.5 tonne per metre of width on the rear wheels or with pneumatic tyred rollers having a load per tyre of not less than 2.5 tonne and tyre pressures of not less than 550 kPa.

Rolling is to commence on the outer edges of the pavement and progress gradually to the centre from both sides. Each pass of the roller must be parallel with the centre line of the roadway and uniformly overlap each preceding pass by one quarter of its width.

Compaction must commence immediately after spreading and before existing moisture in the material has evaporated. Where necessary the Contractor will, as determined by the Superintendent, water the material to produce optimum moisture content for compaction.

Each layer must be compacted at the appropriate optimum moisture content to a dry density not less than that corresponding to the following percentages of relative compaction:

<u>Depth below finished surface level of base</u>	<u>Relative compaction based on max. Dry density obtained on modified compaction test</u>
0-100mm	100%
over 100mm	98%

8.07 TEST ROLLING

All pavement layers are to be compacted so that they are capable of withstanding test rolling without visible deformation, with a smooth wheel roller of approximately 12 tonne mass with a load intensity on the rear wheels of not less than 6 tonne per metre of width; or alternatively with a pneumatic tyred roller loaded to not less than 4.5 tonne per tyre and tyres inflated to 700 kPa.

Any unstable areas detected by test rolling are to be rectified by the Contractor using methods agreed to by the Superintendent.

8.08 CORRECTION OF HIGH OR LOW AREAS

Irregularities, deficiencies in level and high areas are to be rectified by scarifying adding or removing materials as necessary, reshaping and recompacting to grade and profile.

8.09 SURFACE PREPARATION

The Contractor is to prepare for bituminous surfacing the lengths, widths and areas specified or shown on the drawings for bituminous surfacing plus an additional 0.3 m on sides where there is no concrete edging. The surface of the shoulders and verges must be matched to the finished surface of the prepared pavement.

The Contractor is to prepare the pavement surface, by scarifying, watering, grading and rolling to produce a hard dense surface capable of being swept with rotary brooms to leave a tight surface true to profile and free from loose material, corrugations and other irregularities.

The surface so prepared must be free of tearing and scabbing and is to be uniform in texture with no lamination within 75mm of the finished surface. The surface must be true to the specified shape and level. The preparation is to be such as to avoid variations in level at the joints of adjacent sealed areas and edgings. Any imperfections are to be corrected.

Unless otherwise specified the total area of the work must be presented to the Superintendent for acceptance for surfacing as one lot.

8.10 TOLERANCES

The maximum deviation from the design level of each course will be nil below or 10mm above.

When final compaction is complete, the finished surface is to be true to template and must not have a variation of more than 5mm in any place when tested with a 3 metre straight edge.

8.11 MAINTENANCE PRIOR TO BITUMINOUS SURFACING

Following the acceptance of the prepared surface and until bituminous surfacing is completed, the Contractor must maintain the pavement in the specified condition until surfacing works are completed. Should the pavement condition deteriorate before surfacing works are completed, the Contractor must reprepare the pavement and re-present the pavement for acceptance.