

MUNICIPAL STANDARDS

SPECIFICATIONS

PART 6 - MATERIAL AND PAVEMENT CONSTRUCTION

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6.1 SCOPE OF WORK

This section includes the supply of all materials, equipment, labour and services necessary for the construction of pavements.

6.2 STANDARDS

The following Australian Standards and Standard Drawings are referred to:

Australian Standards

AS 1141	Methods of Sampling and Testing Aggregates
AS 1289	Methods of Testing Soil for Engineering Purposes
AS 1348.1	Road and Traffic Engineering - Glossary of Terms

Standard Drawings

SD-1001	- Urban Road (Typical Cross Section)
SD-1010	- Rural Road (Typical Cross Section)

6.3 MATERIALS

6.3.1 General

Unless otherwise specified, all pavement material shall be crushed aggregate produced from sound unweathered igneous rock and shoulder material shall be natural gravel.

6.3.2 Source of Materials

The Contractor shall identify the source of materials and may be required to provide N.A.T.A. endorsed certificates plus a 20 kg representative sample at least three (3) days prior to use for approval by the Superintendent. Changes to the material source shall require approval of the Superintendent.

6.3.3 Crushed Aggregate

a) Base Course Material

Base course material shall be crushed aggregate with grading conforming with Table 6.3.1 with a Plasticity Index not greater than 6, a Liquid Limit not greater than 25 and a Los Angeles Abrasion Test value not greater than 35.

b) Sub-base Materials

Sub-base materials shall be crushed aggregate with grading conforming to Table 6.3.1 with a Plasticity Index not greater than 12, a Liquid Limit not greater than 30 and a Los Angeles Abrasion Test value not greater than 35.

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Table 6.3.1

Sieve Size (mm)	Class of Material	
	Sub-base Course	Base Course
53	100	
37.5	90 - 100	
26.5	80 - 87	100
19	-	93 - 100
9.5	47 - 62	64 - 85
4.75	32 - 48	44 - 64
2.36	22 - 38	32 - 47
0.425	8 - 11	13 - 22
0.075	3 - 11	3 - 11

6.3.4 Shoulder Material (where shown on drawings)

Shoulder material shall be natural gravel with grading conforming to Table 6.3.2 a Plasticity Index of 10-15 and a Liquid Limit not greater than 35.

Table 6.3.2

A.S. Sieve Size (mm)	Percentage Passing
37.5	100
26.5	85 - 100
19.0	75 - 100
9.50	64 - 100
4.75	45 - 90
2.36	30 - 73
0.425	16 - 39
0.075	9 - 22

6.3.5 Water

The water used shall be clear, clean and free of deleterious substances.

6.3.6 Wet Mix

Wet mix shall consist of a uniform blend of base course material and water to provide a uniform moisture content of 3 to 7 per cent. The actual water content shall be as recommended by the Superintendent.

The aggregate and water shall be mixed by a central mixing plant in a mixer approved by the Superintendent. Discharge from the mixer into delivery trucks shall be effected in such a manner as to avoid segregation.

6.4 CONSTRUCTION

6.4.1 Spreading of Materials

Materials shall be spread uniformly and in layers not exceeding 150 mm loose depth in such a manner that avoids segregation.

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6.4.2 Compaction of Materials

The sub-base material and shoulder material shall be compacted to a minimum characteristic dry density ratio of 95 per cent of modified compaction at optimum moisture content.

The base course material shall be compacted to a minimum characteristic dry density ratio of 98 per cent of modified compaction at optimum moisture content.

Compaction of each layer shall commence immediately. Using a smooth wheeled roller of minimum static mass of 10 tonne or approved equivalent. Water shall be added and shall be thoroughly mixed to give the required moisture content through the depth of the layer. Material with excess moisture shall be dried to the required moisture content.

Each pass of the compaction plant shall be parallel with the centreline of the pavement. On sections having one-way crossfall, compaction shall start at the lower edge and shall progress towards the higher edge. On crowned sections, compaction shall start at the outer edges and progress towards the crown. The method of compaction shall allow for 300 mm minimum overlap between passes.

6.4.3 Construction Tolerances

Each pavement course, consisting of one or more layers of the same material, shall be finished to a smooth and uniform surface and shall conform to the levels, grades and shapes shown on the Drawings.

The finished surface of the sub-base shall be within + 20 mm of the designated levels and when measured with a 3.0 metre straight edge laid in any direction on the surface, the deviation of the surface from the straight edge shall not exceed 25 mm.

The finished surface of the base shall be within + 10 mm of the designated levels and when measured with a 3.0 metre straight edge laid in any direction of the surface, the deviation of the surface from the straight edge shall not exceed 15 mm.

Any departures in excess of the requirements for finished surface shall be corrected by scarifying the layer concerned, removing excess or adding deficient pavement material, as required and recompacting the area to a uniform surface.

6.5 ACCEPTANCE

6.5.1 Inspection

The Contractor shall be responsible for arranging inspection by the Superintendent of the various stages of the work. The following inspections may be required:

- a) Inspection of the subgrade prior to commencing pavement construction.
- b) Completion of each course of the pavement.

Twenty-four (24) hours notice is required for each inspection. Work shall not proceed unless the superintendent passes each stage.

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6.5.2 Testing

a) Materials Testing

The Superintendent may direct the Contractor to supply to the Superintendent copies of delivery dockets for all pavement material used. The Superintendent may direct the Contractor to test the materials supplied in accordance with this specification. The requested tests shall be conducted by an approved N.A.T.A. laboratory at a rate of three (3) tests from each 1,000 tonnes of material supplied or part thereof, as directed by the Superintendent. The Contractor shall meet cost of testing.

a) Pavement Testing

All pavement layers shall be compacted so that they are capable of withstanding proof rolling.

Test rolling shall be performed by a static weight roller of 8 to 10 tonnes mass, a single rear axle truck fitted with dual wheels and 9.00 x 20 tyres inflated to 550 kPa loaded to produce a rear axle mass of 8.2 tonne, or such other vehicle as may be approved by the Superintendent, traveling at 4 to 5 kph. The allowable deflection of the subgrade shall not be more than is just visible to an observer standing still as the test vehicle passes.

Unstable areas detected by proof rolling shall be rectified by the Contractor using methods approved by the Superintendent.

c) Compaction Testing

Unless otherwise specified, the compaction testing frequency and Characteristic Density calculations shall comply with the Department of Infrastructure, Energy and Resources, Tasmania – Transport Division Standard Road and Bridge Maintenance Specifications – Section G4 – Compaction Assessment.

Density testing shall be by nuclear density meter unless otherwise approved by the Superintendent.

The contractor shall meet cost of testing.