

Project Specific Specification (Measurement)

**Transport and Main Roads Specifications
PSS30 Asphalt Pavements**

January 2015

Pilot Specification

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1 Introduction

This Specification applies to the construction of asphalt pavements using the following asphalt types:

- a) Medium duty dense graded asphalt
- b) Heavy duty dense graded asphalt
- c) Open graded asphalt and
- d) Stone mastic asphalt.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications* and other Specifications as appropriate.

2 Measurement of work

2.1 Standard Work Items

In accordance with the provisions of Clause 2 of MRS01 *Introduction to Specifications*, the standard work items covered by this Specification are listed in Table 2.1.

Table 2.1 – Standard work items

Standard Item No.	Description	Unit of Measurement
Preparation of the Existing Surface		
9401S	Preparation of the existing surface	m ²
9402SP	Crack filling (Provisional Quantity)	m ²
9403SP	Strain alleviating membrane fabric strips (Provisional Quantity)	m ²
9404SP	Tack coat, residual bitumen (Provisional Quantity)	litre
Heavy Duty Dense Graded Asphalt		
9501SP	Heavy duty dense graded asphalt in corrector course, AC [nominal size] mix (Provisional Quantity)	tonne
9502S	Heavy duty dense graded asphalt in base course, AC [nominal size] mix	tonne
9503S	Heavy duty dense graded asphalt in intermediate course, AC [nominal size] mix	tonne
9504S	Heavy duty dense graded asphalt in surfacing course, AC [nominal size] mix	tonne
9505S	Heavy duty dense graded asphalt over existing pavement, AC [nominal size] mix (no levels specified)	tonne
9506S	Heavy duty dense graded asphalt over existing pavement, AC [nominal size] mix (levels specified)	tonne
Open Graded Asphalt		
9701S	Open graded asphalt in surfacing course, AC [nominal size] mix	tonne
9702S	Open graded asphalt over existing pavement, AC [nominal size] mix (no levels specified)	tonne

9703S	Open graded asphalt over existing pavement, AC [<i>nominal size</i>] mix (levels specified)	tonne
Stone Mastic Asphalt		
9801S	Stone mastic asphalt in surfacing course, AC [<i>nominal size</i>] mix	tonne
9802S	Stone mastic asphalt over existing pavement, AC [<i>nominal size</i>] mix (no levels specified)	tonne
9803S	Stone mastic asphalt over existing pavement, AC [<i>nominal size</i>] mix (levels specified)	tonne
9804S	Supply and application of grit to the surface of stone mastic asphalt (Provisional Quantity, if ordered)	tonne
Medium Duty Dense Graded Asphalt		
9901SP	Medium duty dense graded asphalt in corrector course, AC [<i>nominal size</i>] mix (Provisional Quantity)	tonne
9902S	Medium duty dense graded asphalt in base course, AC [<i>nominal size</i>] mix	tonne
9903S	Medium duty dense graded asphalt in intermediate course, AC [<i>nominal size</i>] mix	tonne
9904S	Medium duty dense graded asphalt in surfacing course, AC [<i>nominal size</i>] mix	tonne
9905S	Medium duty dense graded asphalt over existing pavement, AC [<i>nominal size</i>] mix (no levels specified)	tonne
9906S	Medium duty dense graded asphalt over existing pavement, AC [<i>nominal size</i>] mix (levels specified)	tonne
Performance Tests		
9601SP	Deformation resistance testing of asphalt, AC [<i>nominal size</i>] mix (Provisional Quantity, if ordered)	each

2.2 Work Operations

Item 9401S Preparation of the existing surface

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) cutting back existing adjoining pavement to a vertical face
- c) cleaning/sweeping the existing surface
- d) treatment of surface imperfections and
- e) removal of raised extruded thermoplastic road markings and raised pavement markers.

Item 9402SP Crack filling (Provisional Quantity)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply of crack sealant and
- c) cleaning and filling of cracks.

Item 9403SP Strain alleviating membrane fabric strips (Provisional Quantity)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply of all materials
- c) preparing existing surfaces
- d) applying bituminous emulsion or proprietary primer and
- e) installing strain alleviating membrane fabric strips.

Item 9404SP Tack coat, residual bitumen (Provisional Quantity)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications* and
- b) supply and application of tack coat.

Item 9501SP Heavy duty dense graded asphalt in corrector course, AC [nominal size] mix (Provisional Quantity)

Item 9502S Heavy duty dense graded asphalt in base course, AC [nominal size] mix

Item 9503S Heavy duty dense graded asphalt in intermediate course, AC [nominal size] mix

Item 9504S Heavy duty dense graded asphalt in surfacing course, AC [nominal size] mix

Item 9505S Heavy duty dense graded asphalt over existing pavement, AC [nominal size] mix (no levels specified)

Item 9506S Heavy duty dense graded asphalt over existing pavement, AC [nominal size] mix (levels specified)

Item 9701S Open graded asphalt in surfacing course, AC [nominal size] mix

Item 9702S Open graded asphalt over existing pavement, AC [nominal size] mix (no levels specified)

Item 9703S Open graded asphalt over existing pavement, AC [nominal size] mix (levels specified)

Item 9801S Stone mastic asphalt in surfacing course, AC [nominal size] mix

Item 9802S Stone mastic asphalt over existing pavement, AC [nominal size] mix (no levels specified)

Item 9803S Stone mastic asphalt over existing pavement, AC [nominal size] mix (levels specified)

Item 9901SP Medium duty dense graded asphalt in corrector course, AC [nominal size] mix (Provisional Quantity)

Item 9902S Medium duty dense graded asphalt in base course, AC [nominal size] mix

Item 9903S Medium duty dense graded asphalt in intermediate course, AC [nominal size] mix

Item 9904S Medium duty dense graded asphalt in surfacing course, AC [nominal size] mix

Item 9905S Medium duty dense graded asphalt over existing pavement, AC [nominal size] mix (no levels specified)

Item 9906S Medium duty dense graded asphalt over existing pavement, AC [nominal size] mix (levels specified)

Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) being a registered asphalt supplier or engaging a subcontractor who is a registered asphalt supplier
- c) having a registered mix design or obtaining a registered mix design under the *Asphalt Supplier Registration System*
- d) manufacture of asphalt in accordance with the registered mix design(s)
- e) delivery of asphalt to the Works
- f) laying, compacting and finishing the asphalt
- g) providing an allowance for asphalt used in temporary ramps and asphalt lost from cut-offs from joints
- h) provision of laboratory and compliance testing facilities
- i) sampling, testing and quality assurance requirements
- j) delivery of the results for all tests and inspections to the Administrator by the nominated time and
- k) removal and disposal of any nonconforming material or product, or any material or product not utilised for a reduced level of service, and replacement with conforming material or product.

Where paving open graded and stone mastic asphalt over an existing pavement with levels specified, a dense graded asphalt layer should be placed first.

Item 9804S Supply and application of grit to the surface of stone mastic asphalt (Provisional Quantity, if ordered)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) Winning and processing of the material and
- c) Loading, delivery, stockpiling, hauling, spreading and rolling of the grit.

Item 9601SP Deformation resistance testing of asphalt, AC [nominal size] mix (Provisional Quantity, if ordered)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications* and
- b) supplying material, sampling, compacting and testing specimens for deformation resistance in duplicate and reporting the results to the Administrator.

2.3 Calculation of quantities

2.3.1 Preparation of the existing surface

The preparation of the existing surface shall be measured as the area over which the asphalt is laid.

2.3.2 Tack coat

The quantity of the tack coat, as residual bitumen at 15°C, shall be determined from the area on which the tack coat is placed and the nominated application rate of residual bitumen.

2.3.3 Asphalt

The quantity of asphalt in place in the final work must be mutually agreed using the tally of the weighbridge docket of delivered asphalt less:

- a) the quantity of asphalt which does not remain in the Works (such as asphalt in temporary ramps, cut-off joints and spillages or that remaining on or in construction plant) and
- b) any amount of asphalt which exceeds the upper vertical and horizontal geometric tolerances but is accepted to remain in the Works by the Administrator.

Weighbridge dockets must be issued at a certified weighbridge and collected at the point of delivery.

3 Utilisation of a rejected lot for a reduced level of service

3.1 General

If a nonconformity is not accepted in accordance with Clause 3.2, the nonconforming material must be replaced with conforming material.

The cost of rectifying nonconformities, including any restoration work to any underlying or adjacent surface or structure, which becomes necessary as a result of such replacement or correction, shall be borne by the Contractor. Materials removed from the site by the Contractor must be replaced with conforming material.

3.2 Acceptance of nonconformities

The Contractor may propose in writing to the Administrator that pre-determined dispositions be applied to nonconformities for the following properties:

- a) particle size distribution and binder content in asphalt
- b) in situ air voids and
- c) ride quality.

Deductions apply to the scheduled rate for the quantity of asphalt represented by the test sample.

The requirements of Clause 1.2 of PSTS30 still apply to asphalt accepted for utilisation at a reduced level of service under this Clause.

TMR may accept asphalt for utilisation at a reduced level of service based on the requirements of Clause 3.2 being satisfied. However, it may not be appropriate to apply these pre-determined dispositions for specific high risk / high profile projects. Where it is determined that application of these pre-determined dispositions is not appropriate, the Contractor should be advised as such during the tendering phase for the project.

3.2.1 Combined particle size distribution and binder content

Deductions in accordance with Table 3.2.1 will be applied to accepted nonconformities in combined particle size distribution and binder content provided that:

- a) for any individual sieve size and the binder content, nonconformities greater than twice the production tolerance specified in Table 7.4.3.2 of PSTS30 will not be accepted and
- b) deductions are cumulative and nonconformities will not be accepted if combined deductions exceed 20%.

Additionally for stone mastic asphalt, acceptance of non-conformances on the 4.75 mm sieve for SM14 and 2.36 mm sieve for SM10 is subject to the mix volume ratio being ≤ 1.04 .

Table 3.2.1 – Deduction for combined particle size distribution and binder content

Combined Particle Size Distribution Element	% by which nonconformity exceeds production tolerance (Clause 7.4.3.2 of PSTS30)	Deductions (in percent of schedule rate)
	(% by mass of total aggregate)	
Passing 37.5 mm	Each 2 or part thereof	1
Passing 26.5 mm	Each 2 or part thereof	1
Passing 19.0 mm	Each 2 or part thereof	1
Passing 13.2 mm	Each 2 or part thereof	1
Passing 9.50 mm	Each 2 or part thereof	1
Passing 6.70 mm	Each 2 or part thereof	1
Passing 4.75 mm	Each 2 or part thereof	1
Passing 2.36 mm	Each 1 or part thereof	1
Passing 1.18 mm	Each 1 or part thereof	1
Passing 0.600 mm	Each 1 or part thereof	1
Passing 0.300 mm	Each 1 or part thereof	2
Passing 0.150 mm	Each 0.5 or part thereof	2
Passing 0.075 mm	Each 0.5 or part thereof	2
Binder Content	(% by mass of total asphalt mix)	
20 mm asphalt or smaller	Each 0.1 or part thereof	3

3.2.2 In situ air voids

Deductions in accordance with Table 3.2.2 will be applied to accepted nonconformities in excess of the upper limit of the characteristic value of in situ air voids (V_u), provided the nonconformity does not exceed the limit specified in Table 9.2.1 of PSTS30 by more than 1.5%.

Table 3.2.2 – Deductions for nonconforming in situ air voids

Insitu Air Voids in Excess of Specified Limit V_U by (%)	Deduction (in Percent of Value of Lot)
≤ 0.5	5 (2.5)
0.6 – 1.0	15 (7.5)
1.1 – 1.5	30 (15)

Deductions shown in brackets apply prior to 30 June 2015.

3.2.3 Ride quality

Deductions in accordance with Table 3.2.3 must be applied to accepted nonconformities in ride quality provided that the nonconformities will not be accepted when the ride quality exceeds the specified limit by more than 20 counts per kilometre.

Table 3.2.3 – Deductions for ride quality

Ride Quality in Excess of Specified Limit by (counts/km)	Deduction (in Percent of value of Lot)
≤ 5	2
6 – 10	4
11 – 15	8
16 – 20	16

4 Incentives

Pre-determined asphalt surface course ride quality incentives shall be applied in accordance with Table 4, provided that:

- a) the Lot conforms to all requirements of PSTS30 and
- b) for all three adjacent Lots in all directions, the ride quality is conforming.

TMR typically pays an incentive for achieving a higher standard of ride quality provided the requirements of Clause 4 are satisfied. However, it may not be appropriate to apply these pre-determined incentives for specific projects. Where it is determined that application of these pre-determined incentives is not appropriate, it will be stated elsewhere in the Contract that the requirements of Clause 4 do not apply.

Table 4 – Incentives for ride quality

Ride Quality below the Specified Limit by (counts/km)	Incentive (in Percent of Value of Lot)
≤ 10	0
11 – 15	1
16 - 20	2
> 20	3

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