



SPECIFICATIONS

AusSpec Asset Owner Specifications
(Roadworks & Drainage)

AusSpec Development Construction Specifications
(Roadworks & Drainage)

PRSC 100 Roadworks Specifications

PRSC 400 Water Supply Specifications

PRSC 500 Sewerage Specifications



PRSC 100

ROADWORKS SPECIFICATIONS

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| 101 | Manufacture of Asphaltic Concrete |
| 102 | Delivery and Laying of Asphaltic Concrete |
| 103 | Sprayed Bitumen Surfacing |

PRSC 103

SPRAYED BITUMEN SURFACING

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1.0.0 PURPOSE

- 1.1.0** The purpose of this specification is to set down the requirements for the preparation of substrata, the supply and placement of sprayed bitumen surfacing and cover aggregate for road, car park and driveway (access) surfacing works.

2.0.0 SCOPE

- 2.1.0** This specification shall apply to works to be constructed by contract, subcontract or direct labour.
- 2.2.0** This specification shall apply to works being constructed directly by the Pine Rivers Shire Council or other authority or for a principal who will hand over the ownership of the constructed works to the Pine Rivers Shire Council or who will retain ownership.

3.0.0 REFERENCES

- 3.1.0** The following shall apply:-

AS 2124 - 1992	General Conditions of Contract
AS 3900	Quality Management and Quality Assurance Standards
ISO 9000	Quality Management and Quality Assurance Standards

- 3.2.0** The following shall apply when the respective materials have been specified or approved for use. Where the editions listed have been superseded or replaced, then any later copy of the standards shall apply in their place:-

MRS 11.11	DMR Specification for Sprayed Bituminous Surfacing (Excluding Emulsions)
MRS 11.22	DMR Specification for Supply of Cover Aggregate

4.0.0 DEFINITIONS

4.1.0 For the purpose of this specification the following definitions shall apply:-

- ❖ **Premises** - any parcel of land improved or unimproved, for which there is a property description
- ❖ **Director, Assets and Infrastructure Services Division** - the person occupying that position within the Pine Rivers Shire Council, or their nominated representative
- ❖ **Pine Rivers Shire Council engineer** - the engineer employed by the Pine Rivers Shire Council to approve, supervise or inspect the works, or their nominated representative.
- ❖ **Consulting Engineer** - the registered professional engineering company or registered professional engineer engaged by the principal to carry out the investigation and design of the water supply works to be constructed by the principal. When engaged for the construction phase, the company or engineer shall act as superintendent for the purpose of works carried out by contract.
- ❖ **Contract, Contractor, Principal and Superintendent** - as defined in AS 2124

5.0.0 PREPARATION OF THE BASE COURSE SUBSTRATA

5.1.0 PREPARATION OF EXISTING SURFACES

- 5.1.1 The existing surface shall be thoroughly cleaned, by brooming or other approved means. All foreign matter adhering to the surface shall be removed before any prime, tack coating or asphalt spreading is carried out.
- 5.1.2 The prepared surface shall be inspected and approved by a Pine Rivers Shire Council engineer before the application of any prime, tack coating or asphalt spreading is carried out.

5.2.0 PREPARATION OF NEW BASE COURSE

- 5.2.1 A primer or primer seal coat will be required by a Pine Rivers Shire Council engineer before any sprayed bitumen surfacing is carried out unless specified otherwise.
- 5.2.2 The type, rate and temperature of application of the primer shall be determined by the superintendent after consideration of the permeability and absorptive characteristics of the paving material based on the results of tests taken during the paving construction.
- 5.2.3 The primer used shall satisfy the requirements of the Australian Standard AS 2157.
- 5.2.4 Primer shall be applied by a sprayer which complies with the requirements of NAASRA "Specification for Performance Requirements for Mechanical Sprayers of Bituminous Materials".
- 5.2.5 When a primer coat is used, sprayed bitumen surfacing shall not commence until the primer has cured and the superintendent's approval is obtained for the commencement of surfacing. Primer shall be left for a minimum of 48 hours before applying the surfacing unless approved otherwise by the superintendent and a Pine Rivers Shire Council engineer.
- 5.2.6 During this period, traffic shall not be permitted over the surface unless a cover coat of coarse sand or fine screenings has been applied concurrently with the application of the primer and incorporated into the surface by rolling in a manner approved by the superintendent.
- 5.2.7 If the application of bitumen surfacing is delayed or the primed surface contaminated in any way, the superintendent may direct the application of a tack coat to all or part of the area

5.3.0 INSPECTION OF SUBSTRATA

- 5.3.1 Sprayed bitumen surfacing shall not be commenced until the superintendent and a Pine Rivers Shire Council engineer have inspected the substrata either as a base course or existing surface and certified that it is suitable for the application of the surfacing.
- 5.3.2 The superintendent and a Pine Rivers Shire Council engineer will consider the quality of the finished levels, compaction and texture finish before such certification.

6.0.0 SPRAYED BITUMEN SURFACING TYPES

6.1.0 Sprayed bitumen surfacing types shall be defined as follows:-

- Type 1 - Single coat (nominal 7 mm aggregate) sprayed bitumen surfacing
- Type 2 - Single coat (nominal 10 mm aggregate) sprayed bitumen surfacing
- Type 3 - Double coat (nominal 10/16 mm aggregate) sprayed bitumen surfacing
- Type 4 - Single coat (nominal 10 mm aggregate) sprayed polymer modified bitumen surfacing
- Type 5 - Double coat (nominal 7/10 mm aggregate) sprayed polymer modified bitumen surfacing

6.2.0 Type 3 surfacing is to be used on all new work where sprayed bitumen is called up, unless specified or approved otherwise by a Pine Rivers Shire Council engineer.

6.3.0 All sprayed bitumen surfacing shall be constructed in accordance with the requirements specified in the Queensland Transport Standard Specification "Sprayed Bituminous Surfacing" (Excluding Emulsion) MRS 11.11 and the additional requirements specified below.

7.0.0 BITUMEN

- 7.1.0** Bitumen used for sprayed bitumen surfacing shall be Class 170 Bitumen.
- 7.2.0** The bitumen used for Type 1, Type 2 and Type 3 surfaces shall have the additive, Lilamin H.B.G. pellets or approved equivalent, incorporated on site at the rate of 0.5% by weight.
- 7.3.0** The bitumen used for Type 4 and Type 5 surfaces shall be modified with by the addition of S.B.S. (Styrene-Butadiene-Styrene) rubber. The rubber additive shall be factory mixed to produce a final mix with a residual S.B.S rubber content of 4%.
- 7.4.0** Cutter quantity is to be determined on site in accordance with Figure 1 - Bitumen Cutting Chart of MRS 11.11.
- 7.5.0** Cutter shall not be added to bitumen used for Type 4 and Type 5 surfacing without prior approval from the superintendent and a Pine Rivers Shire Council engineer. The contractor shall provide details of the proposed type and quantity of cutter to be used, together with certification from the bitumen supplier that the cutter is compatible with the polymer modified bitumen.

8.0.0 COVER AGGREGATE

- 8.1.0** Cover aggregate used in this work shall comply with the requirements specified in the Department of Main Roads Standard Specification "Supply of Cover Aggregate" MRS 11.22 and the additional requirements specified below.
- 8.2.0** Aggregate used for Type 1, Type 2 and Type 3 surfacing shall be precoated with Amine Plus at the rate of 10 litres per cubic metre.
- 8.3.0** Aggregate used for Type 4 and Type 5 surfacing shall be precoated with a product recommended by the bitumen supplier. The contractor shall provide the superintendent with details of the proposed precoating agent complete with details of the proposed application rate and certification that the precoating agent is compatible with the polymer modified bitumen and the aggregate.

9.0.0 APPLICATION RATES

9.1.0 Bitumen spray rates and cover aggregate application rates will vary between sites because of traffic and surface conditions and shall be a function of the average least dimension (ALD) of the supplied aggregate. The actual rates to be used shall be agreed with the superintendent prior to surfacing commencing.

9.2.0 For the purpose of pricing the contract the contractor shall allow for the application rates shown in Table 9.0.

Table 9.0

SURFACING TYPE	BITUMEN SPRAYING DATA	COVER AGGREGATE SPREAD RATE
Type 1 – First Coat	0.8 litres / square metre	1 cubic metre per 170 square metres
Type 2 – First Coat	1.1 litres / square metre	1 cubic metre per 140 square metres
Type 3		
First Coat	1.2 litres / square metre	1 cubic metre per 80 square metres
Second Coat	0.9 litres / square metre	1 cubic metre per 120 square metres
Type 4 – First Coat	0.8 litres / square metre	1 cubic metre per 170 square metres
Type 5		
First Coat	0.9 litres / square metre	1 cubic metre per 140 square metres
Second Coat	0.7 litres per square metre	1 cubic metre per 170 square metres

9.3.0 The superintendent or a Pine Rivers Shire Council engineer may seek job specific spread and spray rates where resurfacing works are to be undertaken on roads with a speed limit equal to or greater than 80 km/h. Any such job specific rates are to be designed and supplied by the contractor, with any testing costs borne by the principal.

10.0.0 SPRAY TEMPERATURE

- 10.1.0** Sprayed bitumen surfacing shall only be applied to pavement surfaces when the surface temperature is in excess of 25°C.
- 10.2.0** Bitumen for Type 1, Type 2 and Type 3 surfacing shall be sprayed at a temperature between 160°C and 190°C.
- 10.3.0** Bitumen for Type 4 and Type 5 surfacing shall be sprayed at a temperature between 190°C and 200°C.

11.0.0 ROLLING AND FINISHING

11.1.0 ROLLING

- 11.1.1 After spreading, the cover aggregate shall be rolled with multi-tyred rollers having rubber tyres. Steel-wheeled rollers shall not be used without approval from the superintendent.
- 11.1.2 Rolling shall be carried out at the rate of six passes over every point of the surface within one hour of spraying.

11.2.0 REMOVAL OF EXCESS COVER AGGREGATE

- 11.2.1 Excess cover aggregate shall be lightly swept from the road surface before opening the road to traffic. Where the work is being carried out under traffic, traffic speed is to be controlled to the satisfaction of the superintendent and a Pine Rivers Shire Council engineer until the work can be swept.
- 11.2.2 A second sweep to remove excess cover aggregate from the roadway shall be carried out between seven and fourteen days after being opened to traffic unless approved otherwise by a Pine Rivers Shire Council engineer.

12.0.0 QUALITY ASSURANCE

12.1.0 GENERAL

- 12.1.1 The surfacing shall be finished true to grade and profile with a neat consistent finish including around manholes and other road surface fittings, all to the satisfaction of the superintendent and a Pine Rivers Shire Council engineer.

12.2.0 TOLERANCES AND FINISHED LEVELS

Where finished levels are shown on drawings, the final surfacing shall not deviate from these levels by more than the tolerances shown in Table 12.0. Due allowance may be made for the effect of geometric acceptance in the design where relevant.

Table 12.0

Criteria	Test	Tolerance above prescribed amount (+)	Tolerance below prescribed amount (-)
Match to lip level of concrete channel		6 mm	0 mm
Asphalt thickness	Each individual test	10 mm	0 mm
	Average	8 mm	0 mm
Crossfall	Any location	0.50 %	0.20 %
	Average	0.20 %	0.20 %
Local imperfections	Deviation from level over a 3 m long straight edge parallel to profile	5 mm	5 mm
Horizontal alignment		50 mm	50 mm
Width	Un-kerbed	150 mm	0 mm
	Kerbed	No gap at lip of channel	

13.0.0 PROVISION FOR TRAFFIC

- 13.1.0** All necessary signs, barriers etc., required for the control and protection of traffic shall be provided and erected to the satisfaction of the superintendent. Special care shall be taken to ensure that vehicles and pedestrians are not sprayed with primer or tack coat material and entry to areas treated with uncovered primer tack coat or hot paving mixture is prevented. Areas that have been tack coated are not to be opened to traffic unless approval is given by the superintendent.

14.0.0 STOPPAGE OF WORK

- 14.1.0** The superintendent shall suspend all work if he considers the performance of the work is not in accordance with the specification.