

Road

Master Specification

RD-BP-S4 Supply of Cold Mix Asphalt

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RD-BP-S4 Supply of Cold Mix Asphalt

1 General

- 1.1 This Part specifies the requirements for the supply of Cold Mix Asphalt for Maintenance Patching using fluxed binder for either Dense Graded (DG) or Open Graded (OG), termed Standard Cold Mix Asphalt.
- 1.2 Provision is also made for Cold Mix Asphalt suitable for Maintenance Patching based on propriety products termed "Modified Cold Mix Asphalt".
- 1.3 Standard Cold Mix is to be supplied unless the Modified Cold Mix Asphalt is specifically requested.
- 1.4 The definitions in AS 4283 "Cold Mix Asphalt for Maintenance Patching" apply to this Contract.
- 1.5 Documents referenced in this Part are listed below:
- a) AS 4283 Cold Mix Asphalt for Maintenance Patching.
 - b) AS 2150 Hot Mix Asphalt – A Guide to Good Practice.
 - c) TIPES Transport Infrastructure Product Evaluation Scheme by ARRB.

2 Materials

- 2.1 Materials shall comply with the following:
- a) Binder, Flux and Cutter RD-BP-S1 "Supply of Bituminous Materials"
 - b) Aggregate, Sand and Mineral Filler RD-PV-S1 "Supply of Pavement Materials"

3 Requirements

Standard Cold Mix Asphalt

- 3.1 Cold mix asphalt shall be designed to the requirements of AS 4283 except as varied by this Clause. The mix shall be OG7 or AC7 and shall meet the requirements of Table RD-BP-S4 3-1.

Table RD-BP-S4 3-1 Target Mix Requirements for Standard Cold Mix Asphalt

Mix Type	Open Graded (OG7)	Dense Graded (AC7)
Fluxed Types & Content	Nominate (refer Clause 3.3)	Nominate (refer Clause 3.3)
Residual Bitumen: C170 or C320	5.1% by mass Total Mix	4.7 - 5.0% by mass Total Mix
Design Grading	AS 4283 – Table 1: Open Graded 7	AS 4283 – Table 1: Dense Graded 7

Modified Cold Mix Asphalt

- 3.2 Modified cold mix asphalt shall be superior in performance over the standard cold mix, and shall demonstrate the performance meet the requirements including rut resistance depth of less than 10 mm at standard conditions, and without shoving or delamination within 6 months of trafficking. This judgement is to be made by the reasonable opinion of the Principal or by TIPES certificate.

Nominated Mix

- 3.3 At least 10 working days before commencing production of Standard Cold Mix Asphalt, the Contractor shall submit to the Department's Laboratory, Walkley Heights, details of Standard Cold Mix Asphalt proposed, together with a certificate from a laboratory with appropriate NATA accreditation, stating that the Standard Cold Mix Asphalt and its constituents meet the requirements of this Part.
- 3.4 Submission of the details of nominated mix and Certificate(s) shall constitute a **Hold Point**.

3.5 For a nominated mix, the aggregate grading and binder content and their sources shall be known as the "Nominated Combined Aggregate Grading" and "Nominated Binder Content" respectively. The following details of nominated mixes shall be submitted:

- a) Constituent materials:
 - i) Aggregates – source, geological type;
 - ii) Added Mineral Filler – type, source;
 - iii) Binder – source, class, or grade;
 - iv) Bitumen adhesion Agent – name, type, source; and
 - v) relevant test results verifying material properties for the above materials.
- b) Mix Design:
 - i) nominated combined aggregate grading;
 - ii) nominated binder content;
 - iii) nominated flux content & type including any seasonal adjustment;
 - iv) mixing plant location, description and capacity; and
 - v) test results of the properties in Table RD-BP-S4 3-1 of representative material of nominated mix produced by the mixing plant from which the Cold mix is to be supplied.

4 Manufacture and Delivery of Mixes

- 4.1 Standard Cold Mix Asphalt shall be manufactured to replicate the nominated mix design with grading and binder tolerances to be within requirements of Table 11 of AS 2150 "Hot Mix Asphalt".
- 4.2 Material shall be produced under uniform conditions and be essentially homogeneous with respect to composition and general appearance.
- 4.3 Mix shall be delivered within 3 working days from production.
- 4.4 Modified Cold Mix shall be delivered in propriety packaging in good condition to preserve performance properties.

5 Sampling and Testing

- 5.1 In addition to samples taken for verification testing, the Contractor shall provide samples for product auditing purposes in accordance with Table RD-BP-S4 5-1.
- 5.2 The Contractor shall provide notification when sampling has occurred and deliver samples to the Department's Laboratory at 19 Bridge Road, Walkley Heights. The samples will be stored at the Principal's expense.
- 5.3 The Contractor shall provide documentation to confirm that the samples have been received at the Department's Materials Laboratory.
- 5.4 All samples shall be clearly marked and traceable to the relevant Lot in accordance with PC-QA1 "Quality System Requirements".

Table RD-BP-S4 5-1 Sampling & Testing for Product Auditing

Product	Sampling	Sampling Frequency	Sample Testing
Standard Cold Mix Asphalt	One sample (min. 6 kg/sample)	As per truck or delivery	As requested by the Principal
Residual Bitumen*	1 sample (minimum of 1 litre)	-	

* Samples are not required where a Departmental arrangement exists.

6 Test Procedures

6.1 The Contractor shall use the following test procedures (refer https://www.dpti.sa.gov.au/contractor_documents) to verify conformance with the Specification:

Table RD-BP-S4 6-1 Test Procedures

	Test Procedure
Sampling of Raw Materials:	
Aggregates	TP226
Bitumen & Polymer Modified Binder	AS 2008
Mineral Filler	TP226
Sampling of Asphalt	TP425
Sample Preparation: Splitting and Conditioning of Asphalt in the Laboratory	AS2891.2.1
Binder Content:	
Pressure Filtration Method	AS 2891.3.3
Particle Size Distribution by Dry Sieving	AS 1141.11
Deformation Resistance of Asphalt Mixtures by the Wheel Tracking test	AGPT/T231

7 Hold Points

7.1 The following is a summary of Hold Points referenced in this Part:

Document Ref.	Hold Point	Response Time
3.4	Submission of the details of nominated mixes and Certificate(s)	20 working days

8 Verification Requirements and Records

Test Records

8.1 The Contractor shall undertake the testing specified in this Clause and shall supply written evidence of compliance with the lot package.

Table RD-BP-S4 8-1 Test Records

Document Ref.	Subject	Property	Test Procedure	Test Frequency	Acceptance Limits
3	Residual Bitumen	Viscosity 60°C	TP 652	1 per 6 months of production of part thereof	140 - 200
		Penetration 25°C	AS 2341 - 12	1 per 6 months of production of part thereof	Minimum 62
4	Manufacture of Mixes	Binder Content and Aggregate Grading	AS 2891.3.3	1 per 6 months of production of part thereof	Refer Clause 7 Table 11 AS 2150

Other Records

8.2 The Contractor shall supply the following records:

Table RD-BP-S4 8-2 Other Records

Document Ref.	Subject	Record to be Provided
5	Sampling	Notification that audit sampling has occurred
5	Audit Sampling	Documentation confirming delivery of audit samples