

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 DPTI 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 DPTI 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 DPTI 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 DPTI 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 |