

**Technical Specification**

**Transport and Main Roads Specifications  
MRTS102 Reclaimed Asphalt Pavement Material**

**November 2025**

(ATS 3135 Supply of Reclaimed Asphalt Pavement Materials, Ed 1.0 November 2023)

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## About this document

The document adopts and modifies Austroads Technical Specification ATS 3135 *Supply of Reclaimed Asphalt Pavement Materials* as part of national harmonisation. It sets out the requirements for reclaimed asphalt pavement (RAP) material that is used in asphalt.

## How to use this document

This document includes the national guidance and Queensland-specific advice while following the structure established in Austroads Technical Specifications.

Queensland-specific advice includes practices which vary from national practice because of local environmental conditions (such as geography, soil types, climate); different funding practices; local research; local legislation requirements; and to expand instruction on particular issues.

This document:

- sets out how the Austroads Technical Specification *Supply of Reclaimed Asphalt Pavement Materials* applies in Queensland
- has precedence over the Austroads Technical Specification *Supply of Reclaimed Asphalt Pavement Materials* when applied in Queensland
- has the same clause numbering and headings as the Austroads Technical Specification *Supply of Reclaimed Asphalt Pavement Materials*.

Transport and Mains Roads provides an ancillary document which outlines adopted national and modified Queensland-specific content with tracked changes. To access a copy click on the below link: [Ancillary documents for harmonised Technical Specifications.](#)

## Terminology

The following general amended definitions apply when reading this document.

Reference to...	Means
Shall	Denotes mandatory requirements
Must	Denotes mandatory requirements
Principal	The State of Queensland acting through the Department of Transport and Main Roads.
Administrator	The Administrator will be responsible for the overall administration of this Contract.

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## 1 Scope

- 1.1 This Technical Specification sets out the requirements for the supply of reclaimed asphalt pavement (RAP) material used in the manufacture of asphalt.
- 1.2 Refer to MRTS30 *Asphalt Pavements* for the requirements covering:
  - a) the class of binder to be added to asphalt containing RAP material
  - b) RAP level permissible in various asphalt products and pavement applications (e.g. heavy duty dense graded asphalt versus light duty dense graded asphalt)
  - c) the binder content tolerance of the production mix with or without RAP material, and
  - d) the inclusion of RAP material in asphalt manufactured using warm mix asphalt technology.
- 1.3 This Technical Specification shall be read in conjunction with MRTS01 *Introduction to Technical Specifications*, MRTS50 *Specific Quality System Requirements* and other Technical Specifications as appropriate.
- 1.4 This Technical Specification forms part of the Transport and Main Roads Specifications Manual.

## 2 Referenced documents

- 2.1 The requirements of the referenced documents listed in Table 2.1 below apply to this Technical Specification. Where there are inconsistencies between this Technical Specification and the referenced documents, the requirements in this Technical Specification shall take precedence.

**Table 2.1 – Reference documents**

Reference	Title
<b>Australian / New Zealand Standards</b>	
AS 1141.3.1	<i>Methods for sampling and testing aggregates – Sampling – Aggregates</i>
AS/NZS 2891.3.1	<i>Methods of sampling and testing asphalt – Binder content and aggregate grading – Reflux method</i>
AS/NZS 2891.10	<i>Moisture Content of Asphalt</i>

Reference	Title
<b>Austrroads</b>	
ATM 192	<i>Characterisation of the viscosity of reclaimed asphalt pavement (RAP) binder using the dynamic shear rheometer (DSR)</i>
<b>Transport and Main Roads Technical Documents</b>	
MRTS01	<i>Introduction to Technical Specifications</i>
MRTS30	<i>Asphalt Pavements</i>
MRTS50	<i>Specific Quality Systems - Requirements</i>
MRTS101	<i>Aggregates for Asphalt</i>

### 3 Definitions

3.1 The terms used in this Technical Specification shall be defined in Clause 2 of MRTS01 *Introduction to Technical Specifications*. Additionally terminology relevant to this Technical Specification is defined in Table 3.1 below.

**Table 3.1 – Definitions of terms**

Term	Definition
Asphalt Manufacturer	The company that manufactures the asphalt containing the RAP material.
Processed RAP	RAP which has been blended, crushed and screened to a nominal maximum size to meet the requirements of Clause 7.
RAP Approval Level	The level designation which corresponds to the maximum amount of RAP material which can be used in an asphalt mix design.
Reclaimed asphalt pavement (RAP)	Asphalt which has been milled or excavated from existing asphalt pavements, or returned from job sites.

### 4 Quality system requirements

4.1 The Contractor must prepare and implement a RAP Management Plan that includes the documentation in Table 4.1. **Hold Point 1 Record**

**Table 4.1 – Quality Plan**

Clause	Description of Document
6.2	Detailed procedures and inspection and test plans (ITPs) for the excavation, processing and stockpile management of the RAP

Clause	Description of Document
7.2	Inspection and test plans which include details of the sampling and testing methods, as well as the frequency of testing.

HOLD POINT 1	
Process Held	Commencement of the production of RAP material.
Submission Details	The RAP Management Plan must be provided to the Administrator at least 10 working days prior to the commencement of the production of RAP material.

- 4.2 The RAP material must be produced under a Quality Management System which has been certified to AS/NZS ISO 9001 by a JAS-ANZ accredited organisation.
- 4.3 Where the asphalt mix to be produced contains > 15% RAP, the Asphalt Manufacturer must be approved to the appropriate RAP approval level in accordance with MRTS30 *Asphalt Pavements*.

## 5 Constituent materials

### *General*

- 5.1 RAP constituent materials must:
- be sourced totally from asphalt
  - not contain any foreign materials such as road base, concrete, coal tar, plastics, brick, timber and scrap rubber
  - be free from clay, dirt and other deleterious matter, and
  - only include aggregates which are hard, sound and durable.
- 5.2 The particle size distribution and materials finer than 75 µm must be determined on the total fraction after removal of the binder using toluene.
- 5.3 Where > 15% by mass of RAP is included in an asphalt mix and Method 1 (as defined in Clause 7.1.6 of MRTS30 *Asphalt Pavements*) is used to control the binder blend viscosity, the binder content of the RAP material (or weighted average binder content of the RAP fractions if more than one fraction is used) shall be 4.1 ± 0.5%.
- 5.4 RAP material must be sourced in accordance with the regulations, policies and codes of practice issued pursuant to the applicable legislation for the protection or management of the environment.

## 6 Process control

### **General**

- 6.1 The production of RAP material must be subject to process control in accordance with this Clause 6.
- 6.2 The RAP Management Plan must include procedures / details for:
- a) managing the milling and transportation process, including the method of preventing to ensure that the asphalt is not contaminated by granular pavement materials
  - b) ensuring that contaminants are screened / separated from the RAP
  - c) blending feedstock, crushing, screening and managing oversize material
  - d) details of the stockpile management, including the methods to prevent ponding of water in the stockpile and compaction of the RAP
  - e) ensuring that the processed RAP material in each stockpile is homogeneous in terms of its visual appearance and test properties
  - f) managing any absorptive aggregates to ensure that their distribution in the stockpile does not produce variable binder absorption in the asphalt mix
  - g) controlling the moisture content in each stockpile, and
  - h) if the asphalt mix will contain more than 25% RAP material, the methodology to ensure that the processed RAP material within a stockpile is graded and fractionated.
- 6.3 The Asphalt Manufacturer must undertake sufficient regular monitoring and testing to ensure that the consistency and quality of the RAP comply with this Technical Specification at all times. These requirements are auditable at the point of mix design submission and at any time during the production and placement of asphalt mixes containing RAP.

### **Particle size distribution of RAP**

- 6.4 RAP material must be blended, crushed and screened to ensure that:
- a) 100% passes the 26.5 mm AS sieve

- b) it is free flowing with a consistent particle size distribution that complies with the tolerances specified in MRTS101 *Aggregates for Asphalt* and the Contractor's target grading, and
  - c) it has minimal fracture of aggregate particles.
- 6.5 Where the asphalt mix will contain more than 25% RAP material, processed RAP material must be fractionated into more than one size (i.e. coarse and fine) and then metered into the asphalt mixing process.

### ***Stockpile management***

- 6.6 RAP must be transported and stored to minimise the impact of moisture and prevent compaction, segregation and contamination from other material sources (including virgin aggregates, other processed RAP lots and unprocessed RAP).
- 6.7 At the processing site, separate stockpiles must be established for processed and unprocessed RAP material.
- 6.8 Processed RAP must be stockpiled in Lots not exceeding 1000 tonnes. Each lot must be clearly identified and marked including its testing status.
- 6.9 Once the processed RAP stockpile has been assessed for compliance, additional RAP must not be added to that stockpile.

### ***Transport of processed material from the processing site to the asphalt plant***

- 6.10 Processed RAP material must be transported from the processing site to the asphalt plant in a manner such that there is:
- a) no segregation or contamination of the processed RAP material, and
  - b) no change in the mix during production.

### ***Stockpiles at the asphalt plant***

- 6.11 At the asphalt plant:
- a) each stockpile of processed RAP material must not exceed 500 tonnes
  - b) stockpiles must be configured to prevent contamination, and
  - c) each stockpile must remain free flowing without agglomeration of the material prior to use.

- 6.12 Incoming RAP must be visually monitoring and assessed for homogeneity and for the presence of foreign and/or deleterious materials. The monitoring must be carried out daily (at a minimum) by a person experienced in the process.
- 6.13 Where RAP material in a stockpile is found to contain lumps or is not free flowing, it must not be used in asphalt production. Such materials may be reprocessed to comply with this Specification.
- 6.14 The distribution of RAP aggregate in each stockpile must be visually homogeneous and meet the requirements for control moisture content in stockpiles.

### ***Traceability of material in asphalt production***

- 6.15 The RAP material used in asphalt production must be traceable to a designated stockpile.

## **7 Conformity**

### ***Material conformance***

- 7.1 In addition to submitting records of process control to the Administrator, the Asphalt Manufacturer must demonstrate that the RAP material complies with this Technical Specification by sampling and testing in accordance with this Clause 7.

### ***Sampling and Testing***

- 7.2 The RAP Management Plan must nominate the sampling locations, method of sampling and the frequency of sampling / testing.
- 7.3 All samples for testing must be taken from stockpiles as described in the Contactor's ITP. Sampling must be undertaken in accordance with AS 1141.3.1. The sampling and testing must be carried out within a 28 day period prior to the incorporation of RAP into the asphalt manufacturing process.
- 7.4 Unless specified otherwise in the Contract documents or directed by the Administrator, the frequency of testing must not be less than the minimum specified in Table 7.4. **Record**

**Table 7.4 – Minimum testing frequencies for RAP**

Material Property	Test Method	Minimum Frequency of Testing
<b>Unprocessed RAP</b>		
Homogeneity and absence of foreign and/or deleterious materials in the incoming RAP	Visual inspection	Each incoming load
<b>Processed RAP</b>		
Binder content and aggregate grading	AS 2891.3.1	1 per 500 tonnes
Recovered binder viscosity of RAP <sup>(1)</sup>	ATM-192	1 per 500 tonnes
Moisture Content	AS/NZS 2891.10	Daily during asphalt production

Note:

<sup>(1)</sup> This testing is only required where:

- the percentage of RAP binder exceeds 15% of the total binder in the mix, and
- method 2, as defined in Clause 7.1.6 or MRTS30 Asphalt Pavements, is used to control the binder blend viscosity of the mix.

## **Nonconformance**

7.5 Unless otherwise approved by the Administrator, a nonconforming Lot must not be used in the production of asphalt.

Grading nonconformances are typically acceptable provided the contractor takes corrective action to address the nonconformance and the properties of the asphalt mix (such as combined grading and air voids) are not compromised by the nonconformance.

## Appendix A: Summary of Hold Points, Witness Points, Milestones and Records

General requirements for Hold Points, Witness Points, Milestones and Records are specified in Clause 5.2 of MRTS01 *Introduction to Technical Specifications*.

The Hold Points, Witness Points, Milestones and Records that the Contractor must submit to the Administrator to demonstrate compliance with this Technical Specification are summarised in Table A. There are no Witness Points or Milestones defined.

**Table A – Hold Points, Witness Points, Milestones and Records**

Clause	Hold Point	Witness Point	Milestone	Record
4.1	1. Manufacture of RAP			RAP Management Plan
7.4				Test results

