

## Quarry Registration System

# QRS5: Preparing a Recycled Material Assessment Report (RMAR) for Recycled Material Sites

October 2024



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## 1 Introduction

QRS5 is part of the Transport and Main Roads [Quarry Registration System \(QRS\) suite of documents](#). It describes the content required in a Recycled Material Assessment Report (RMAR) for a recycled material site. It is recommended that specifically the QRS1 document is reviewed prior to completion of a RMAR document.

The RMAR must be supplied by the Applicant to enable the assessor to determine the suitability of the recycled material processed at the Applicant's site to be registered under the QRS. Registration under the QRS is a prerequisite for a recycled material producer to supply materials to the department in accordance with the relevant Transport and Main Roads [Technical Specification MRTS05 Unbound Pavements](#).

The requirement for recycled material sites to be registered was introduced into MRTS05 *Unbound Pavement* in July 2020.

Additional uses of recycled materials may be added to this document if the requirement is implemented in other Transport and Main Roads Technical Specifications.

As Technical Specifications are progressively updated, it is expected that registration of recyclers will progressively be extended to other relevant Transport and Main Roads Technical Specifications.

Where a Technical Specification does not specifically require registration of the recycled material products, these materials may still be used in accordance with the requirements of the Technical Specifications; for example, Reclaimed Asphalt Pavement (RAP) is a recycled material and can be incorporated into asphalt in accordance with MRTS30 *Asphalt Pavements* without the materials being registered under the QRS.

A recycled material site is considered to be a 'Quarry' within the definition of the QRS and in Transport and Main Roads Technical Specifications, once it has been registered within the QRS

Where a company operates multiple sites, a separate application is required for each site and, where successful, a separate registration certificate will be issued for each site.

Information on the Transport and Main Roads QRS, including QRS documents, can be accessed through the Transport and Main Roads link following.

<https://www.tmr.qld.gov.au/business-industry/Business-with-us/Approved-products-and-suppliers/Pavements-materials-and-geotechnical>

The process of registration of recycled material site has been introduced in July 2020 to align with changes to MRTS05 *Unbound Pavements*, which requires recycled material producer to be registered.

Initially it is proposed to provide recycled material producers interim registration for a period of twelve months while the process is bedded down.

As the nominated products from recycled materials are progressively registered and the requirements clarified (if necessary), it is expected that this document will be amended accordingly.

## 2 Definition of terms

In addition to the definitions detailed in QRS1 documents, Table 2 following also lists additional definitions used in QR1, QR2, QRS3, QRS4, QRS5, QRS6 and the *Quarry Registration Application Form*.

**Table 2 – Definition of terms**

Term	Definition
Employee	Any Queensland public service agency employee whether permanent, temporary, full-time, part-time or casual, and any volunteer, student, contractor, consultant or anyone who works in any other capacity for a Queensland public service agency (this includes third party service providers) Source: <i>Code of Conduct for Queensland Public Servants</i> .
Test reports	Reports presenting the results of one or more specific tests or a summary of number of tests, whether NATA-certified or not –includes petrographic reports

## 3 Confidentiality of the Recycled Material Assessment Report

All documents submitted to Transport and Main Roads for any purposes, including QRS purposes, are covered by the requirements of the department's document management policies and guidelines, and all relevant state and federal laws.

In the first instance, all documentation submitted to Transport and Main Roads for quarry registration purposes, shall be treated as commercial-in-confidence. Only in regard to test reports submitted to Transport and Main Roads for any purpose (including QRS purposes), these may be used by the department for research purposes by employees. Where such tests reports are embedded in Quarry Assessment Reports (QAR) or RMAR or similar documents, these may be extracted from those documents and used in the same manner as individual test reports; such extractions may only be done by employees. Test reports may be made available and used by third-party organisations, contracted to Transport and Main Roads for specific research projects and where the contract provisions of such contracts include relevant confidentiality provisions. The reports resulting from any research work, whether conducted by employees or third-party organisations, shall not include the identity of any specific quarry unless such identification is specifically authorised by the relevant quarries management.

Note: A monthly upload list of all currently registered suppliers (quarries), which includes the quarry details and a summary of registered products is produced by Transport and Main Roads quarry staff and is published monthly for the use of both employees and the general public.

## 4 Recycled material assessment report

### 4.1 General

The RMAR shall be prepared by a suitably qualified person, who is familiar with the fundamentals of the recycling processes and policies in relation to the production of materials. This must be a materials engineer or materials technologist with a minimum of five years' experience in road construction materials. This person (the author) must be employed outside the Applicant's business to ensure an objective evaluation.

The document's author shall detail his/her qualifications, affiliations and experience in relation to recycling operations and the supply of road construction materials with copies of his/her qualifications.

The RMAR for site shall contain information pertaining to the following basic elements:

- the site name and location (which uniquely identify the site)
- details of key personnel
- confirmation that the Applicant holds all relevant and required licences / permits / approvals to operate as a recycled material producer on the site (under federal, state and local government legislation).

Note: Copies of such documents may be requested.

- the source(s) and nature of the material which the producer uses to produce the nominated products
- how the producer identifies and separates various source materials and manages contamination (both during production and in the final product)
- details of operation and production practices
- production results which demonstrate the producer's ability to produce the nominated products, and
- the producer's quality management processes.

The degree of detail needed will depend on the size of the site, the stage of development and the products that the Applicant intends to provide.

#### **4.2 Site and administration details**

The following information shall be provided as a minimum:

- site name
- location and access (provide maps and layout plans)
- formal site / land ownership and tenure details
- site real property description (Parish, County, Registered Property Numbers)
- local government authority (Council or Shire)
- site manager name and contact details
- other key management personnel and contact details
- confirmation that the Applicant holds all relevant and required licences / permits / approvals to operate as a recycled material producer on the site (under federal, state and local government legislation), and
- site plans and labelled / titled photographs clearly showing stockpiling pads for recycled sources and final products, operation and production plants, where appropriate.

Where required, this information shall also be included in the *Quarry Registration Application Form*.

### **4.3 Source material details**

The following information shall be provided as a minimum:

- the types of materials, which will be recycled / processed at the facility – for example, construction and demolition (C&D) waste, concrete washout and similar materials
- where the source material is obtained from, and what proportion each is of the total – for example, residential demolition, commercial demolition, concrete batch plants, infrastructure works and similar sites
- the process for identification, sorting and stockpiling of source materials on site (provide plans, maps or images to help explain this)
- the process in place to ensure unsuitable materials are not included in the source material – for example (but not limited to), asbestos and general waste
- the process used to ensure that excessive foreign materials are not included in or are sorted from the source material – for example, timber, organics, metal, excess soil
- other considerations relevant to the source material – for example, long-term contracts to receive source material, and
- the quantity of each source material type that is expected be accepted annually at the site – broken down into concrete, brick, glass, RAP and other materials (provide details of other materials).

### **4.4 Operation and production**

The following information shall be provided as a minimum:

- a brief description of the current or proposed processes (and equipment) used to manufacture the source material into a Technical Specification-compliant product
- a brief summary of site development (provide plans, maps, images and photographs to help explain this)
- production circuit diagrams, including all fixed and/or mobile equipment for crushing, processing, screening, blending and conveying (provide details of the type, make and model of each piece of equipment)
- stockpile construction, management and identification procedures – for example, naming conventions and the process used to build, maintain, and use stockpiles to ensure a homogeneous material is supplied
- the nominated products proposed to be produced
- procedures for producing nominated products, including:
  - selection of source materials
  - handling, crushing and processing procedures
  - blending procedures (including where natural, quarried or supplement materials are incorporated)
  - moisture control and conditioning, and
  - procedures for identification and removal of foreign materials / contaminants

- the expected quantity of each nominated product to be produced annually

The possible list of nominated products that could be produced in accordance with MRTS05 are:

- Subtype 2.1
- Subtype 2.2
- Subtype 2.3
- Subtype 2.4, and
- Subtype 2.5.

- techniques and/or methods of disposal of unsuitable and foreign materials and their temporary storages / locations within the operation.

#### **4.5 Production results**

The Applicant shall provide test results from past production which demonstrate the producer's ability to produce each nominated product in accordance with either:

- MRTS35 *Recycled Material Blends for Pavements* – November 2018, or
- MRTS05 *Unbound Pavements* – Current version (July 2020 or later)

Test results shall be provided for all source and product test properties given in Appendix A for the relevant nominated product. Test results shall be no older than two years.

For every registration or re-registration, a minimum of five test results shall be submitted for each source and product test property of each nominated product.

Test reports shall be NATA-endorsed and carried out by laboratories registered under the Transport and Main Roads [Construction Materials Testing \(CMT\) Supplier Registration System](#).

#### **4.6 Quality management processes**

Should the Applicant have a 'Third Party Certified' Quality Management System which complies with International and Australian Standard AS/NZS ISO 9001, then evidence of such certification should be attached as an Appendix to the RMAR.

Any quality system procedural documentation relevant to achievement and maintenance of product quality shall also be included as appendices to the RMAR.

Producers who do not have a 'Third Party Certified' Quality Management System shall provide details of the type of Quality Management System in operation and how it is certified; for example, the system may be based on relevant elements of AS/NZS 9001 only.

If the system is independently certified (by a registered auditor) or 'Second Party Certified', the written evidence of this shall be attached as an Appendix to the QAR as well as the quality system procedural documentation relevant to the achievement and maintenance of product quality.

For those quarries that may only have a rudimentary Quality Management System in place, the written procedures or instructions used to achieve and maintain product quality shall be attached as an Appendix to the QAR, including a statement on whether the system is audited.



#### **4.7 Source rock testing frequency levels**

Due to the inherent variability and difficulty controlling recycled source materials, the requirements of QRS4 are not applicable to recycled material products.

All recycled materials shall be tested in accordance with the 'default' minimum testing frequencies specified in the QRS4 Appendices.

This requirement may be reviewed after initial implementation.

## Appendix A

### Source and product compliance tests for:

#### **MRTS05 Unbound Pavements**

Note that MRTS05 material is also specified in:

**MRTS07B Insitu Stabilised Pavements using Cement or Cementitious Blends**

**MRTS07C Insitu Stabilised Pavements using Foamed Bitumen**

**MRTS08 Plant-Mixed Heavily Bound (Cemented) Pavements**

**MRTS09 Plant-Mixed Pavement Layers Stabilised using Foamed Bitumen**

**MRTS10 Plant-Mixed Lightly Bound Pavements**

**Table A1 – Source Tests**

Source Test Property	Test Method
Wet Strength	AS 1141.22
Wet/Dry Strength Variation	AS 1141.22

**Table A2 – Product Tests**

Product Test Property	Test Method
Flakiness Index	Q201
Grading	Q103A
California Bearing Ratio (CBR) <sup>1</sup>	Q113A
Liquid Limit	Q104A
Linear Shrinkage	Q106
UCS	Q115
Foreign Material	Q477
pH	AS 1289.4.3.1

Notes:

1. Not required when 100% modified compaction is specified. Refer MRTS05 for requirements

