

SPECIFICATIONS & TECHNICAL STANDARDS 4th EDITION Just released!

The Main Roads Specifications and Technical Standards Roads - Edition 4 manual has been released on the Main Roads website. This is a new edition of the suite of departmental specifications. It supersedes the Standard Specification Roads Edition 3 manual and all new projects are to use the new edition. Hard copies of the manual can be purchased through the Technical Reference Centre.

Major changes

The major change is the separation of the specification into administrative contractual (MRS) and technical (MRTS) sections as well as updates to some specifications.

The specifications will replace the present PSTS (Project Specific Technical Standards) with the new (MRTS) Main Roads Technical Standards. The new specifications and standards have been created by combining the MRS 11.xx and the PSTSxx documents. This has brought about a new suite of documents.

Reason for changes

The driver for the change has been for a consistent approach to specifications. Currently there are two sets of specifications maintained by the department -

PSTS (Project Specific Technical Standards) and MRS (Main Roads Specifications). To maintain a consistent approach it was decided to have one suite of specifications for all contracts. This will allow a simplified upgrade and maintenance of the specifications. It will reduce the seesaw for upgrading in the present system of the two specification suites and allow changes to be completed and broadcast earlier. One of the key changes was the separation of the superintendent's role from the technical requirements. This required that all specifications had to be rewritten and checked for accuracy.

Feedback on TMR Specifications and Technical Standards can be sent by email to mr.techdocs@tmr.qld.gov.au

Specifications and Technical Standards 4th Ed

Presentation and New format

The specifications will have a new format - the MRS plus MRTS plus Annexure. To allow for future expansion of the specifications the '11' has been removed from the name of the specification and the last two numbers retained to minimise confusion.

Depending on delivery type for the project will determine what documents will be needed.

MRSxx + MRTSxx + Annexure

will be required for Road Construction Contract (RCC), Roadworks Performance Contract (RPC) and Minor Works (MW) contracts

MRTSxx + Annexure

will be required for Alliance (AC), Design and Construct (D&C), Early Contractor Involvement (ECI) and Relational Incentive Contract (RIC) contracts.

With the release of the new WMS this will be automatically achieved with the selection of contract type.

A listing of the major changes "*Notes for 4th Edition with major changes*" has been issued with the new specifications on Junction and any enquiries should be addressed to Bruce Hagaman
phone (07) 3834 5993.

Method of Measurement

Method of Measurement only applies to Road Construction Contract (RCC), Roadworks Performance Contract (RPC) and Minor Works Contract (MW). All of these Main Roads "construct only" contracts types are currently tendered on a schedule of rates basis. As such, the method of measurement of work is a critical issue in the tendering process and the certification of payments during the contract.

The measurement methodology has not been altered. As described above, it is included in the MRS set of Specifications.

Specifications Withdrawn

The following bituminous products specifications included in the third edition of the manual have been withdrawn –

MRS11.34 Open Graded Asphalt Surfacing has been deleted and its content has been incorporated into MRTS30. MRTS30 has been renamed *Dense Graded and Open Graded Asphalt*, and

MRS11.36 Fine Gap Graded Asphalt Pavements is under review.

New heavy duty asphalt Specification

For most major infrastructure projects delivered by the Department of Transport and Main Roads since the 1990's, Main Roads Supplementary Specification MRSS.01.003 has been used for heavy duty asphalt pavements.

This supplementary specification has now been converted into a Technical Standard, MRTS31 *Heavy Duty Asphalt*. Several changes to the technical requirements of this specification have also been made to improve the workability and durability of heavy duty asphalt mixes.

Substantially Re-written Specifications

Some Standard Specifications have been in need of serious upgrading for many years. Past contract documents have relied on a large number of supplementary Specifications to support the Standards.

Considerable work has gone into completely re-writing several important Specifications. With additional use of annexures to provide for the specific requirements of individual contracts, the number of supplementary Specifications will diminish considerably.

MRS01 & MRTS01 *Introduction (to Specifications and Technical Standards)* has a clause added to explain the new format.

Main Roads Technical Standards set out the requirements for the standard of work to be carried out for Main Roads under all forms of contract.

Main Roads Specifications set out additional requirements for particular forms of contract. Each Specification includes the associated Technical Standard.

The numbering system for Main Roads Specifications has been changed from 'MRS11.xx' to 'MRSxx' for Specifications and MRTSxx for Technical Standards. Not all associated documents will be updated immediately.

Where a reference to a 'MRS11.xx' document is found, it usually refers to the standard of work and shall be read as a reference to MRTSxx;

MRS02 & MRTS02 *Provision for Traffic at Roadworks* will provide at least the following –

- Controls for both construction under traffic and detouring of traffic;
- Requirements for the preparation and implementation of a traffic management plan;
- The ability to specify, via the annexure, lane and speed restrictions through the site;

- Rules for the use of temporary barriers and anti-gawking screens;
- Provision of modern traffic warning systems, e.g. variable message signs; and
- Provision of temporary lighting.

The Technical Standard describes the project specific requirements for control of all traffic through the Site. However, where this Standard includes lesser requirements than the *Manual of Uniform Traffic Control Devices* and the *Workplace Health and Safety Act 1995*, the requirements of that Manual and that Act shall prevail;

MRS11 & MRTS11 *Sprayed Bituminous Surfaces (excluding Emulsion)* includes the following major changes:

- Changes to Item Numbers and their Work Operations including new item numbers for addition of cutter and adhesion additives;
- Revised reduction in value limits;
- Changes to strengthen seal design through testing of required inputs and seal design report;
- Changes to address cutting and construction requirements for polymer modified binders;
- Accommodates crumb rubber modified binder;
- Option of polymer modified binder testing at point of delivery to site;
- Early trafficking requirements including testing for loose aggregate; and

- Revised spray sheet.

MRTS17 *Bitumen* includes the following major changes:

- Caters for imported bitumen;
- Includes requirements for bitumen used in asphalt manufacture; and
- Changes to the frequency for compliance testing.

MRTS18 *Polymer Modified Binder* includes the following major changes:

- Changes to PMB classes for sealing applications;
- Changes to binder properties, specified limits and testing conditions;
- Includes property requirements for crumb rubber modified binder;
- Changes to the frequency for compliance testing; and
- Introduces a different method to determine reduced value.

MRTS19 *Cutter and Flux Oils* includes the following major changes:

- Relaxation of specified limits to permit acceptance of Jet-A1 aviation fuel as cutter oil.

MRTS20 *Cutback Bitumen* includes the following major changes:

- Inclusion of additional grades;
- Increased testing frequency for flashpoint; and

- Conditional allowance for spraying if the maximum temperature at delivery is exceeded.

MRTS21 Bituminous Emulsion

includes the following major changes:

- Increased lot size for sampling and testing;
- Increased maximum heating temperature;
- Includes conditions for using emulsion which has exceeded its use by date; and
- Includes changes in defects schedule for noncompliance with specified properties.

MRS30 & MRTS30 Dense Graded and Open Graded Asphalt is an amalgamation of and replaces MRS11.30 *Dense Graded Asphalt Pavements* and MRS11.34 *Open Graded Asphalt Surfacing*. Other major changes include

- Changes to improve the durability of open graded asphalts;
- Additional mix design requirements to improve the durability of dense graded asphalts;
- Provision to use Recycled Asphalt Pavement (RAP) in non wearing course asphalt;
- Requirements for the contractor to undertake a production trial to verify the contractor's capability to manufacture the approved mix design; and
- Aggregate testing requirements.

Transitional arrangements for implementation of MRTS30 and MRTS31

Registered asphalt suppliers currently have approximately 900 asphalt mix designs approved to existing TMR standard specifications. TMR and AAPA members have agreed on a 12 month transitional period for registration of existing mix designs to the new technical standards. An existing mix design may be granted an interim laboratory verified mix design certificate, provided the design:

- Complies with the asphalt mix design requirements of Table 10.3.2 of MRTS30; and
- Complies with the grading limits of Table 10.3.1 of MRTS30 (all mixes) but does not fall on or within the grading limits of Table 10.3.4.2 of MRTS30 (dense graded and heavy duty mixes only). Mix designs that fall on or within the grading limits of Table 10.3.4.2 may be approved, subject to the mix complying with the requirements of Clause 10.3.4.2 of MRTS30.

Where the asphalt supplier has sufficient production data that demonstrates compliance with the job limits for grading, bitumen content, maximum density, and air voids in the production mix, an interim production verified mix design certificate may be issued.

Thanks to Task Group leaders and teams!



The revision of the Bituminous Product specifications began in December 2007 with drafts distributed to industry and relatively short time frames for action. To speed up the process, and get good shared outcomes, it was decided to use Task Groups within the Alliance. Teams of subject matter experts were assembled for each of the key areas of binders, seals & aggregates and asphalt and then tasked to update the old “specifications”.

Over the next two years the task groups worked together in the challenging environment of major project activities at fever pitch, additional extra safety requirements for road surfaces and the distraction of the commercial impacts the changes would have on material suppliers. The changes also had to allow for the incorporation of new registration systems for seal contractor & seal designers and providing improved inclusion of the asphalt supplier registration system outputs.

The Alliance Board and Managers acknowledge their contribution and thank the Task Group leaders and the teams from AAPA members, both in and out of Queensland, and the many Transport and Main Roads experts from the Regions, Pavements & Materials, Road & Delivery Performance and Major Infrastructure Projects.

The fruits of your efforts are now published and available. To get the expected improvement in quality, performance and efficiencies it is important that they are implemented with vigour. Any learnings or modifications that can provide further improvements should be reported through emails to: mr.techdocs@tmr.qld.gov.au



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