

Superseded

Specification (Measurement)

**Transport and Main Roads Specifications
MRS01 Introduction to Specifications**

July 2021

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Superseded

1 Introduction

This Specification serves as an introduction to Specifications.

This Specification shall be read in conjunction with the other Specifications.

The requirements of this Specification apply to all Specifications including Supplementary Specifications incorporated into the Contract.

Reference to clause numbers shall be taken to mean reference to the clauses of that number within that Specification unless stated otherwise.

This Specification forms part of the Transport and Main Roads Specifications Manual. All Specifications forming the Transport and Main Roads Specifications Manual detail the technical requirements for work related to departmental projects.

Others may use these documents for non-departmental projects at their own risk. In some cases, a particular Technical Specification may be based on the assumption that a standard departmental contract is in place (that is, references to “contract” means a reference to a specific standard contract). A consistency check should be undertaken if the contract is not a departmental standard.

These Specifications do not specifically cover non-technical issues associated with undertaking departmental works, for example Workplace Health and Safety, or environmental. Such issues are generally covered by legislative or other requirements and are generally beyond the scope of these Specifications.

Technical Specifications set out the requirements for the standard of work to be carried out for the department under all forms of contract. Specifications set out additional requirements for particular forms of contract. Each Specification includes the associated Technical Specification. For example, MRS02 consists of MRS02 plus MRTS02.

2 Measurement of work

2.1 *Schedule of Rates contract*

2.1.1 **Standard method of measurement**

The Schedule of Rates contains a set of items with estimated quantities for various elements of work to be carried out under the Contract.

Item numbering and descriptions generally conform to the provisions of the standard work description methodology set out in Clause 2.1.2.

Unless marked provisional in accordance with Clause 2.1.7, the estimated quantities included in the Schedule of Rates have been measured:

- a) where a specific “Calculation of Quantities” clause is included in the relevant Specification, in accordance with that clause, or
- b) in other cases, from the dimensions shown on the drawings.

The estimated quantities have been rounded (up or down as required) to the nearest unit or decimal part of a unit as specified in Table 2.1.1.

Table 2.1.1 – Rounding values for quantities

Unit of Measurement	Rounding Value
cubic metre	0.1
each	1
hour	0.1
kilolitre	0.001
litre	1
metre	1
square metre	1
tonne	0.01

In valuing completed work for the purposes of the Conditions of Contract, the Administrator will measure the completed work in accordance with the method of measurement described in Clause 2.1. In the case of a variation approved or directed by the Administrator under the Conditions of Contract, the Administrator will measure the completed work in accordance with the method of measurement described in the variation, but if no method is so described, then the method of measurement described in Clause 2.1 will be used. Quantities will be rounded (up or down as required) as stated above.

Where the Unit of Measure is square metre, it shall be measured using the surface area unless specified elsewhere in the Work Operations.

2.1.2 Standard work description methodology

The work required to be carried out under a Schedule of Rates contract is described in terms of the Standard Work Items (Clause 2.1.3), Supplementary Work Items (Clause 2.1.4), and/or Non-Standard Work Items (Clause 2.1.8). Standard Work Items, Supplementary Work Items and Non-Standard Work Items are collectively referred to as “Work Items”.

Work Items are defined by an item number, description and unit of measurement. The work represented by a Work Item is described in terms of Work Operations referred to in Clause 2.1.5.

The complete set of Standard Work Items in all Specifications plus any Supplementary or Non-Standard Work Items included in the Schedule of Rates are referred to as the Measurement Set for the Contract and are deemed to fully describe the work under the Contract. Notwithstanding the requirements of the Conditions of Contract, any work under the Contract which is not specifically mentioned in the Work Items in the Measurement Set or in the Work Operations associated with those Work Items shall nevertheless be deemed to be included in the Work Items in the Measurement Set.

However, not all of the Standard Work Items will necessarily be applicable to work under the Contract and will not be shown in the Schedule of Rates.

2.1.3 Standard Work Items

Relevant Standard Work Items are listed in Clause 2 of individual Specifications.

Some Specifications contain no Standard Work Items (e.g. material supply or component manufacturing Specifications). In such a case however, provision for the elements of work described in those Specifications is included in a companion construction or erection Specification.

Work Items in the Schedule of Rates are numbered using the relevant Standard Item Number followed by a two decimal step number. The step number will normally be incremented for each additional Work Item based on that Standard Work Item. As an example, using Standard Work Item 40721, the first instance of this item will be 40721.01, and the second instance will be numbered as 40721.02 (and so on).

Where text in a Specification or the description of a Work Item contains a reference to a Standard Item Number, that reference shall be taken as a reference to all Work Items based on the Standard Work Item with that Standard Item Number.

Descriptions of some Standard Work Items contain parameters as defined in Clause 2.1.6.

The addition to the description of any Work Item of a parameter for the location of the specific work being measured shall not affect the provisions of Clause 2.1.

Where there are a number of tasks to be performed under a Work Item (e.g. sprayed bituminous surfacing) and each of the tasks are different or have different parameters, the requirements of specific Work Items included in the Schedule of Rates are specified in the Annexure to the relevant Specification.

Minor differences between the description of a Work Item in the Schedule of Rates and the description of the Standard Work Item on which that Work Item is based shall not materially affect the provisions of Clause 2.1.

Standard Work Items are grouped as set out in Table 2.1.3 using 5 digits.

Table 2.1.3 – 5 digit Standard Work Item groups effective 1 August 2017

Standard Item Number Group	Description of Work	Standard Item Number Group	Description of Work
10000 – 19999	Principal	50000 – 59999	Road Furniture and Surface Delineation
20000 – 29999	Overarching Specifications	60000 – 69999	Electrical and ITS
30000 – 39999	Earthworks, Drainage, Culverts and Geotechnical	70000 – 79999	Bridges, Marine and Structures
40000 – 49999	Pavements and Surfacing	80000 – 89999	Others (Rail and TransLink)

2.1.4 Supplementary Work Items

From time to time, certain work circumstances demand the Standard Work Items be altered to address change in work operation or technical specification. Such Work Items are referred to as Supplementary Work Items and denoted with suffix "S" against the Work Item number and with amended work item description as required.

In such cases the Supplementary Work Item may be represented by an item number which is based on a Standard Item Number, followed by a suffix "S". The Supplementary Work Item:

- a) will be described by its item description which may be different to the description of the Standard Work Item on which it is based in that the description may contain additional information to fully describe the work required

- b) shall include at least the Work Operations described for the corresponding Standard Work Item, and
- c) usually be described further in a Supplementary Specification or the “Supplementary requirements” section in the relevant Technical Specification Annexure.

Some Supplementary Specifications may not include Supplementary Work Items, in which case the work described by that Supplementary Specification shall be deemed to be included in the Work Items which are included in the Schedule of Rates.

Supplementary Work Items may include parameters as described in Clause 2.1.6.

2.1.5 Work Operations

The Work Operations applicable to a Work Item include those tasks listed below in Clause 2.1.5, those tasks listed in the relevant Specification and / or Supplementary Specification as being directly applicable to the Work Item, and any other tasks which could reasonably be inferred to be applicable to the Work Item having regard to the description of the Work Item, the context in which it is used in the relevant Specification or the Schedule of Rates and the tasks necessary to complete the work in accordance with the Contract.

The listed Work Operations do not necessarily comprise a complete description of the Work Items or the work under the Contract, but provide a guide to the work required and highlight significant operations.

The Work Operations which describe any specific Work Item in the Schedule of Rates shall be those applicable to the Standard Work Item on which the Work Item is based.

The following Work Operations are common to all Work Items and are deemed to be included in the Work Items shown in the Schedule of Rates:

- a) establishment and disestablishment including cleaning up and making good, except to the extent that establishment and disestablishment are the subject of a separate specific Work Item in the Schedule of Rates
- b) provision of all site facilities, except to the extent that the provision of any site facilities is the subject of a separate specific Work Item in the Schedule of Rates
- c) provision of all labour, plant and equipment
- d) supply, delivery, handling and storage of all materials except for materials supplied by the Principal and except to the extent that supply, delivery, handling and storage of any materials is the subject of a separate specific Work Item in the Schedule of Rates
- e) provision of all supervisory and support staff
- f) all costs associated with the operation of the Contractor’s Workplace Health and Safety obligations, Quality System, environmental management obligations, traffic management obligations, community liaison obligations, Public Utility Plant obligations, works programming, road maintenance obligations and all other supervisory and coordination functions, except to the extent that such obligations and functions are the subject of separate specific Work Items in the Schedule of Rates
- g) all costs incurred by the Contractor in complying with Commonwealth and State legislation and Local Government By-laws

- h) all testing, except to the extent that testing is the subject of a separate specific Work Item in the Schedule of Rates
- i) all costs associated with the work with respect to security, interest, fees, charges, taxes, royalties, insurance and compensation
- j) all costs associated with the provision of workshop drawings, bar bending schedules and materials lists
- k) any design for work required to be designed by the Contractor, except to the extent that such design is the subject of a separate specific Work Item in the Schedule of Rates
- l) all overheads and profit, and
- m) all other expenses associated with the work not specifically listed above.

2.1.6 Parameters in work item descriptions

Where they occur in descriptions of Work Items, parameters are place markers for additional information (dimensions, location, material type, application rates, etc.). When Work Items with parameters appear in the Schedule of Rates, the parameters are replaced with the additional specific information.

Parameters are shown in the item description in italics and in square brackets [diameter].

2.1.7 Provisional quantities and provisional items

Where a Work Item Number contains a suffix "P," that Work Item shall be deemed to be Provisional and it shall be treated as specified below.

At the time of tendering, the Principal was unable to determine an estimated quantity for such items in the manner mentioned in Clause 2.1.1.

In practice, any Work Item can be shown in the Schedule of Rates as Provisional (by the addition of a suffix "P" to the Work Item Number) whether or not that Work Item is so designated in the Specifications or Supplementary Specifications.

Where a Work Item Number contains a suffix "P" and the words "Provisional Quantity" appear in the description of the item, the Contractor shall be entitled to be paid for that work with the applicable limits of accuracy for the quantities of plus 50% minus 50%.

Where a Work Item Number contains a suffix "P" and the words "Provisional Quantity, as directed" appear in the description of the item, the Contractor shall be entitled to be paid for that work with the applicable limits of accuracy for the quantities of plus 50% minus 50%. The Administrator will direct or mark out the extent of the work. The Contractor shall not proceed until the extent of the work is agreed. Quantities outside the limits of accuracy shall be assessed under the relevant conditions of contract.

Where a Work Item Number contains a suffix "P" and the words "Provisional Quantity, if ordered" appear in the description of the item, the Contractor shall only be entitled to be paid for that work if the Administrator has directed the Contractor in writing to undertake that work. The applicable limits of accuracy for the quantities for an item marked as "Provisional Quantity, if ordered" shall be plus 100% minus 100%.

Where a Work Item Number contains a suffix “P” and the words “Provisional Item, if ordered” appear in the description of the item, the Contractor shall only be entitled to be paid for that work if the Administrator has directed the Contractor in writing to undertake that work. It shall be understood that the work represented by that Work Item may not be required under the Contract. Limits of accuracy do not apply to these Work Items.

2.1.8 Provisional Sum

Provisional Sum means a sum (if any) which is specified in the Contract as a Provisional Sum, for the execution of any part of the Works or for the supply of Plant, Materials or services. A Provisional Sum is an allowance, estimated by the principal, that is entered in the tender documents (tender schedule) for a specific element of the works.

If the Contract includes a Provisional Sum, the Contractor must not carry out the work to which a provisional sum relates unless directed to do so by the Administrator. The Contractor acknowledges that the Administrator has no obligation to direct any work to be carried out in relation to a Provisional Sum.

Provisional Sum Item may include below works:

- a) Works that cannot be quantified at all or no clear scope
- b) Subcontractor work
- c) Nominated subcontract work

The Contractor is entitled to payment for profit and overheads for work carried out in respect of a Provisional Sum.

Refer to conditions of contract for more information related to Provisional Sum.

2.1.9 Non-Standard Work Items (90000 Series Items)

From time to time, users are required to capture discrete and project specific work elements in a contract schedule to address an issue that is unique to the circumstances of a project. Such work elements are not covered by any other Standard Work Item description or Technical Specification. This category of work elements is known as Non-Standard Work Items for which the end-users are required to develop Specifications and define a unit of measure to how it should be delivered.

Non-Standard Work Items are organised into pre-defined ranges, with each range allocated a specific unit of measure. For example, the Non-Standard Work Item Number range 90101 to 90499 is allocated for any user defined work element with unit of measure as “Lump Sum”.

Table 2.1.9 below provides the complete set of Non-Standard Work Items:

Table 2.1.9 - Non-Standard Work Item Numbers and Units of Measurement

Non-Standard Work Item Number Series	Unit of Measurement	Range
90100	lump sum	90101 to 90499
90500	each	90501 to 90999
91000	m	91001 to 91499
91500	km	91501 to 91999
92000	m ²	92001 to 92499
92500	m ³	92501 to 92999

Non-Standard Work Item Number Series	Unit of Measurement	Range
93000	kg	93001 to 93499
93500	tonne	93501 to 93999
94000	litre	94001 to 94199
94200	kilolitre	94201 to 94399
94400	dollars	94401 to 94599
94600	hr	94601 to 94799
94800	day	94801 to 94999
95000	week	95001 to 95199
95200	month	95201 to 95399
95400	year	95401 to 95599
95600	per set	95601 to 95799
95800	fixed fee	95801 to 95999
96000	fixed rate	96001 to 96199
96200	Ha	96201 to 96399
96400	loose m ³	96401 to 96599
96600	Provisional Sum (Dollars)	96601 to 96899

2.2 Lump Sum Contracts

In general, quantities will not be measured by the Principal nor provided to the Contractor under a Lump Sum Contract.

Any Clause titled "Measurement of Work" in a Specification (generally Clause 2), shall not apply to a Lump Sum Contract.

Items included in a Schedule of Prices have been allocated specifically for the Contract without reference to any standard methodology. Under no circumstances shall items included in a Schedule of Prices be interpreted as being described by the method of measurement for Schedule of Rates contracts specified in Clause 2.1.

Where there is a high probability that the work required might differ from that shown on the Drawings (e.g. length of piles or rock quantities), items may be included in a Schedule of Rates for Variations. If such a change actually occurs during the Contract, reimbursement shall be made for the quantities actually carried out at the rates included in the Schedule of Rates for Variations in the Contractor's tender.

2.3 Measurement of quantities

The Conformance Report for each lot shall include measured quantities for all scheduled items associated with the lot.

3 Definition of terms

3.1 Standard definitions

The terms used in Specifications shall be as defined in Clause 2 of MRTS01 *Introduction to Technical Specifications*.

Additional terms used in Specifications shall be as defined in Table 3.1.

Table 3.1 – Definition of terms

Term	Definition
corrective action request	A written communication from the Administrator to the Contractor identifying a nonconformance and includes a direction for the Contractor to issue a nonconformance report
CQR	Abbreviation for Contractor's Quality Representative who is the Contractor's employee responsible for the Contractor's quality system for the Contract
defect	Any single nonconformance of the product or process with the relevant standards and requirements of the Contract
measurement set	The set of Work Items containing all Standard Work Items in all Specifications plus any Supplementary Work Items included in the Schedule of Rates
Provisional Sum	Includes monetary sum, contingency sum and prime cost item, but does not include any amounts in a Schedule of Rates for items described or marked 'provisional', 'provisional quantity' or 'if ordered, provisional quantity' (or similar) or any amounts for numbered items in a Schedule of Rates which include the suffix 'P' or 'PS'
Standard Work Item Number	A unique number assigned to a Standard Work Item as shown in a Specification
Specification	Any document published by the department as a Specification forming part of the Transport and Main Roads Specifications Manual
Standard Work Items	A unique description of a discrete element of work specified in a Specification used for measurement and payment purposes in a Schedule of Rates contract
Supplementary Work Item Number	A unique number assigned to a Supplementary Work Item as shown in a Supplementary Specification or Technical Specification Annexure (refer Clause 2.1.4)
Supplementary Specification	Any Specification included in the Contract which is not a Standard Specification
Supplementary Work Items	Similar to Standard Work Items, but represented by a suffix "S" in a Supplementary Specification or Technical Specification Annexure, used for measurement and payment purposes in a Schedule of Rates contract
Non-Standard Work Item Number	A unique number assigned to a Non-Standard Work Item as shown in a Supplementary Specification (90000 series)
Non-Standard Work Items	A unique and discrete element of work not specified or covered under the Standard Work Items. Is specified in a Supplementary Specification used for measurement and payment in a Schedule of Rates contract
Technical Specification	Any document published by the department as a Technical Specification forming part of the Transport and Main Roads Specifications Manual
utilisation of a rejected lot for a reduced level of service	Concession, as defined by ISO AS/NZS 9000
Work Operation	One of a set of tasks which together generally describe the work represented by a Work Item

Term	Definition
Work Item	A Standard Work Item or a Supplementary Work Item
Work Item Number	A Standard Item Number or a Supplementary Item Number. The meanings of suffixes attached to the Work Item Number, are as described within the Specification to which the Work Item Number relates

3.2 Definitions in other documents

Further relevant definitions are contained in the following documents:

- a) a particular Supplementary Specification
- b) a particular Specification, and
- c) as stated in MRTS01 *Introduction to Technical Specifications*.

3.3 Priority of definitions

In the event of conflict in definition, priority shall be assigned in the order that the documents are listed below:

- a) the relevant Supplementary Specification
- b) the relevant Specification, and
- c) as stated in MRTS01 *Introduction to Technical Specifications*.

4 Referenced documents

Requirements for referenced documents are given in MRTS01 *Introduction to Technical Specifications*.

Table 4 lists documents referenced in this Specification.

Table 4 – Referenced documents

Reference	Title
AS/NZS ISO 9000	<i>Quality management systems – Fundamentals and vocabulary</i>

5 Application of concession provisions for below standard work

A rejected lot may be considered by the Administrator for use for a reduced level of service provided that a specific *Utilisation of a Rejected Lot for a Reduced level of Service* Clause is included in the relevant Technical Specification.

The Administrator may consider the lot for a reduced level of service based on the Administrator's assessment of the consequences of the deficiencies on the performance of the work and provided that the Contractor takes the necessary action to prevent recurrence of the non-compliance and states, on the nonconformance report, what action is to be taken.

If the Administrator does not reject the lot but allows its use for a reduced level of service, payment will be made at the reduced value as calculated from the specific *Utilisation of a Rejected Lot for a Reduced Level of Service* Clause. Where there is no specific clause, the reduction in value will be determined by the Administrator.

The non-rejection of and payment for a lot utilised for a reduced level of service shall be on the basis of the minimisation of losses to both the Principal and the Contractor due to the failure by the Contractor to present the minimum standard of work required by the Contract.

6 Application of bonus provisions for above standard work

A lot may be considered by the Administrator for bonus payment for above standard work provided that:

- a) a specific *Additional Payment for A Higher Standard of Product* clause is included in the relevant Technical Specification, and
- b) the inclusion of the provisions of that clause in the Contract is indicated in the Annexure to that Technical Specification.

The bonus payment as detailed in the contract is based on the Principal's assessment of the additional benefit to the Principal.

Payment will be made at the increased value as calculated from the specific *Additional Payment for A Higher Standard of Product* clause.

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