

Superseded

Specification (Measurement)

**Transport and Main Roads Specifications
MRS305 Dredging**

October 2016

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1 Introduction

This Specification applies to dredging of navigation channels.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications* and other Specifications as appropriate.

This Specification forms part of the Transport and Main Roads Specifications Manual.

2 Measurement of work

2.1 Standard Work Items

In accordance with the provisions of Clause 2 of MRS01 *Introduction to Specifications*, the Standard Work Items incorporated in this Specification are listed in Table 2.1.

Table 2.1 - Standard Work Items

Standard Work Item No.	Description	Unit of Measurement
Dredging		
4711	Establishment of dredge equipment	lump sum
4712	Disestablishment of dredge equipment	lump sum
4713	Establishment and disestablishment of dredge discharge pipeline	lump sum
4714	Dredging (volume) at [<i>insert dredge area designation</i>]	m ³
4715	Dredging (hourly rates)	hours
4716	Standby	hours
4717	Preparation and implementation of the Works Plan	lump sum

2.2 Work Operations

Item 4711 Establishment of dredge equipment

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) transport to site and preparation of all plant and equipment to dredge insitu material and to deliver spoil to the disposal or nourishment site
- c) establishment of a site compound if required
- d) supply and installation of signage required by approvals and permits, and
- e) demonstrating completion of plant preparation by undertaking at least one hour of productive dredging.

Item 4712 Disestablishment of dredge equipment

Work Operations incorporated in the above item include:

- a) Work operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) removal from site of the compound, temporary set outs, tide boards and signage

- c) removal from site of plant and equipment, and
- d) Repair or reinstatement of damage caused by the Contractor's operations.

Item 4713 Establishment and disestablishment of dredge discharge pipeline

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) transport to site of pipeline and associated plant
- c) installation of pipeline and associated plant
- d) removal from site of pipeline and associated plant, and
- e) repair or reinstatement of damage caused by the Contractor's operations.

Item 4714 Dredging (volume) at [*insert dredge area designation*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) productive dredging
- c) positioning the dredging equipment to and from the berth or relocating between dredge areas
- d) maintenance of dredge logs, and
- e) discharge at the disposal site or nourishment area and profiling as required.

Item 4715 Dredging (hourly rates)

Work Operations incorporated in the above item include:

- a) Work operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) productive dredging
- c) positioning the dredging equipment to and from the berth or relocating between dredge areas
- d) maintenance of dredge logs, and
- e) discharge at the disposal site or nourishment area and profiling as required.

Item 4716 Standby

Work Operations incorporated in the above item include:

- a) Work operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) maintenance of dredge logs.

Item 4717 Preparation and implementation of the works plan

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) preparation of the EMP (C), Safety Plan and Works Program
- c) amendments of the Safety Plan required to be deemed acceptable
- d) amendments of the EMP (C) and Works Program to be approved by the Superintendent

- e) revision of the Works Program to reflect the actual works program, and
- f) monitoring, implementation and revision of the EMP (C) and the Safety Plan during the works.

2.3 Calculation of quantities

2.3.1 Item 4711 - Establishment of dredge equipment

This shall be paid as a single Item when all of the Work Operations have been completed.

2.3.2 Item 4712 - Disestablishment of dredge equipment

This shall be paid as a single Item when all of the Work Operations have been completed.

2.3.3 Item 4713 - Establishment and disestablishment of dredge discharge pipeline

This item shall be paid on meeting the performance criteria defined in the following table:

Table 2.3.3

Amount to be paid for Establishment	Time for Payment
30%	When the requirements for Work Operations (a) and (b) have been fulfilled.
30%	On completion of installation.
40%	When the requirements for Work Operations (d) and (e) have been fulfilled.

2.3.4 Item 4714 Dredging (volume)

Volumes for payment shall be calculated using the TIN Terrain Modelling System to calculate the volume of material between two surfaces.

The volume removed (dredged) shall be calculated as the difference between V_{pre} and V_{post} where:

V_{pre} = Volume between the surveyed surface of the predredge survey and the maximum payable depth surface; and

V_{post} = Volume between the surveyed surface of the postdredge survey and the maximum payable depth surface.

Volumes for payment:

- are compacted in situ volumes
- shall not include infill
- shall not include an allowance for the survey tolerances
- shall not include dredging outside the dredge areas or below the maximum payable dredge depth for the given dredge area
- shall not consider hopper volumes or flow meter volumes.

Progress payments prior to the volume calculation after the post dredge survey shall be considered, subject to:

- a maximum of 75% of the minimum volume based on the tendering pre-dredge survey
- provision of satisfactory evidence through the dredge logs and records that the claimed amount has been dredged.

2.3.5 Item 4715 - Dredging (hourly rates)

Time shall be measured on the basis of the dredge logs, supporting evidence and the inspector's observations and records. Time for dredging shall only apply to productive dredging. Other work operations are deemed to be included in the hourly rates.

2.3.6 Item 4716 - Standby

Time shall be measured on the basis of the dredge logs, supporting evidence and the inspector's observations and records.

2.3.7 Item 4717 - Preparation and implementation of the Works Plan

This item shall be paid on meeting the performance criteria defined in the following table:

Table 2.3.7

Amount to be paid for Preparation and implementation of the Works Plan	Time for Payment
80%	Progress Payment 1 when the requirements for Work Operations (a) to (d) have been fulfilled.
20%	On issue of the Certificate of Practical Completion.

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