

Superseded

Specification (Measurement)

**Transport and Main Roads Specification
MRS141 Microtunnelling and Pipe Jacking**

January 2017

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1 Introduction

This Specification applies to the installation of pipelines and other public utilities and plant underground structures using microtunnelling or pipe jacking methods.

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 Specification 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 covered by this Specification are listed in Table 2.1.

Table 2.1 – Standard Work Items

Standard Item No.	Description	Unit of Measurement
Microtunnelling and Pipe Jacking		
3921	Design of microtunnel / pipe jacking installation system	lump sum
3922	Supply and installation of sleeving and carrier pipe	m
3923	Microtunnelling / pipe jacking, all materials	m
3924P	Microtunnelling / pipe jacking in hard ground, rate additional to rates for Work Item 3923 (Provisional Quantity)	m
3925	Removal of spoil material from microtunnel / pipe jack	m ³
3926P	Addition of lime to spoil material in Acid Sulphate Soil area, (Provisional Quantity as directed)	m ³
3927	Grouting outer annuls and space between the casing and carrier pipe	m ³
3928	Sand fill the space between the casing and carrier pipe	m ³
3929	Operation of microtunnelling / pipe jacking machinery	lump sum
3930	Designer's inspection and certification	lump sum

2.2 Work Operations

Any other Standard Work Items other than given in Table 2.1 shall be in accordance with relevant MRS, e.g., Provision for Traffic in accordance with MRS02 and Provision for General Earthworks is in accordance with MRS04.

2.2.1 Microtunnel / pipe jacking construction

Item 3921 Design of microtunnel / pipe jacking installation system

Work Operations incorporated in the above item include:

- Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- design of microtunnel / pipe jacking system in accordance with this Specification, and
- submission of design for approval to use in accordance with the Conditions of Contract.

Item 3922 Supply and installation of sleeving and carrier pipe

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply and installation of sleeving and carrier pipe.

Item 3923 Microtunnelling / pipe jacking, all materials

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) boring through all materials.

Item 3924P Microtunnelling / pipe jacking, hard ground, rate additional to rates for Work Item 3923 (Provisional Quantity)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) boring associated with hard ground in addition to that required for, in all materials.

Item 3925 Removal of spoil material from microtunnel / pipe jack

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) removing all spoils from pits
- c) stockpiling of material considered suitable for re-use, and
- d) hauling and disposing of unsuitable material.

Item 3926P Addition of lime to spoil material in Acid Sulphate Soil area, (Provisional Quantity as directed)

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) mixing of lime into spoil material at the rate required to neutralise potential acid production (excluding supply of lime).

Item 3927 Grouting outer annulus and space between the casing and carrier pipe

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply cementitious grouting and other associated materials and grouting the annulus and any void between casing and carrier pipe.

Item 3928 Sand fill the space between the casing and carrier pipe

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply sand and filling the space between casing and carrier pipe.

Item 3929 Operation of microtunnelling / pipe jacking machinery

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) mobilizing and demobilizing microtunnelling / pipe jacking machinery
- c) provide access road / working platform as necessary
- d) provide surveyors for checking the alignment
- e) supply, install and monitoring of instrumentation throughout the operations, and
- f) install of all sundry items and other components necessary to complete the work.

Item 3930 Designer's inspection and certification

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) provision of design certification in accordance with the Conditions of Contract, and
- c) Addressing review comments and revising design.

2.3 Measurement

2.3.1 Measurement of provision of traffic

The provision of traffic shall be measured in accordance with MRS02 *Provision for Traffic*.

2.3.2 Measurement of General Earthworks

The measurement of excavation and backfilling shall be measured in accordance with MRS04 *General Earthworks*.

2.4 Calculation of quantities

Quantities shall be calculated in accordance with the provisions of Clause 2.1.1 of MRS01 *Introduction to Specifications*.

3 Measurement and payment

3.1 Traffic management

The measurement and payment shall be in accordance with MRS02 *Provision for Traffic*.

3.2 General earthworks

The measurement and payment shall be in accordance with MRS04 *General Earthworks*.

3.3 All lump sums amounts

The lump sum amounts tendered by the Contractor and accepted by the Administrator under Standard Work Items shall be deemed to be full.

3.3.1 Times for payments for lump sums

Notwithstanding the requirements of the Conditions of Contract:

- a) the Contractor may claim payment under Standard Work Item 3921 only after permission to use the Contractor's Design has been approved by the Administrator under the Conditions of Contract or after such permission is deemed to have been given under the Conditions of Contract
- b) the Contractor may claim payment under Standard Work Items 3922, 3923, 3924P, 3925, 3926P, 3927, 3928 and 3929 in accordance
- c) with the requirements of the Conditions of Contract, and
- d) the Contractor may claim payment under Standard Work Item 3930 only after delivery to the Administrator of the documents listed in the Conditions of Contract.

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