

**Specification (Measurement)**

**Transport and Main Roads Specifications  
MRS66 Driven Steel Piles**

**July 2017**

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## 1 Introduction

This Specification applies to the supply and / or installation of driven steel piles.

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 2.1.3 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 Item No.	Description	Unit of Measurement
<b>Driven Steel Piles</b>		
70801	Steel piles, supply on Site	m
70802	Handling and pitching of steel piles	each
70803P	Driving steel piles (Provisional Quantity)	m
70807	Setting up for pre-boring for steel piles	lump sum
70808	Pre-boring for steel piles	m
70813P	Splicing steel piles (Provisional Quantity, as directed)	each
70817	Trimming of steel pile heads including welding of bond bars	each
70818P	Setting up for re-driving of steel piles (Provisional Quantity, as directed)	each
70822	Monitoring the last 10 blows of the pile drive using a PM	each
70823	Supply of As constructed records	item

### 2.2 Work Operations

#### Item 70801 Steel piles, supply on Site

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) manufacture of steel piles
- c) transport to Site
- d) unloading at Site, and
- e) storage at Site.

#### Item 70802 Handling and pitching of steel piles

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

- b) transferring pile from onsite storage to its aligned position in the driving rig
- c) provision and use of the driving rig, and
- d) retention of pile on line for driving.

**Item 70803P Driving steel piles (Provisional Quantity)**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) driving the pile
- c) provision and use of the pile driving hammer, and
- d) setting up for and re-driving piles which have lifted as a result of other driving operations.

**Item 70807 Setting up for pre-boring for steel piles**

This item is only used where pre-boring is shown in the Standard Drawings or directed by the Superintendent. Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) provision and establishment on site of plant and equipment required for pre-boring.

**Item 70808 Pre-boring for steel piles**

This item is only used where pre-boring is shown in the Standard Drawings or directed by the Superintendent. Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) boring the hole, and
- c) disposal of the excavated material.

**Item 70813P Splicing steel piles (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*
- b) preparation of pile ends
- c) welding of spliced joint, and
- d) application of protective coating on joint.

**Item 70817 Trimming of steel pile heads including welding of bond bars**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) cutting off piles
- c) welding of bond bars to pile heads, and
- d) disposing of offcuts.

**Item 70818P Setting up for re-driving of steel piles (Provisional Quantity, as directed)**

This item is used where the Superintendent directs that a pile requires re-driving after the original driving operation has been completed. This item shall not be used for re-driving piles which have lifted as a result of other driving operations. Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) repositioning of driving equipment over pile, and
- c) removal of driving equipment on completion.

**Item 70822 Monitoring the last 10 blows of pile driving using a PM**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply on site and set up of the PM equipment
- c) monitoring the last 10 blows of the pile drive
- d) analysis of the data, and
- e) supply of the data and analysis in both digital and paper format to the Administrator.

**Item 70823 Supply of As constructed records**

Work Operations incorporated in the above item include:

- a) preparation and supply of As constructed records

**3 Calculation of quantities**

**3.1 Natural ground surface level**

The natural ground surface level shall be taken as the level determined from the contours shown in the Standard Drawings unless agreed otherwise, in writing, by the Contractor and the Administrator, prior to commencing driving.

**3.2 Pile driving**

Pile driving shall be measured on the basis of the driven length of pile, which length shall be taken to be the axial length from the toe of the pile to the underside of the headstock or pile cap or to the natural ground surface level, whichever is the lower.

Ground material forced up between the piles during the driving operation shall be removed by the Contractor at no cost to the Principal.

Piles which lift as a result of other pile driving operations nearby shall be re-driven to their correct levels at no cost to the Principal.

**3.3 Pre-boring**

Pre-boring shall be measured as the length along the hole axis from the level at the bottom of the hole, as shown in the Standard Drawings unless otherwise directed by the Superintendent, to the level of the underside of the pile cap or to natural ground surface level, whichever is the lower.

## **4 Administration requirements**

### **4.1 Steel piles**

#### **4.1.1 Supply of steel piles**

Where listed in the Principal Supplied Materials List (Form C6827), steel piles will be supplied by the Principal. Where not so listed, steel piles shall be supplied by the Contractor.

#### **4.1.2 Steel piles supplied by the Principal**

##### **4.1.2.1 Supply location**

Steel piles supplied by the Principal will be made available at the point of delivery and by the transport mode shown in the Principal Supplied Material List (Form C6827).

##### **4.1.2.2 Acceptance of piles by Contractor**

The Contractor shall check the steel piles for quantity and condition upon taking delivery and shall immediately report to the Administrator any defect or deficiency.

##### **4.1.2.3 Damage to piles**

In the event of any steel pile sustaining damage after having been accepted by the Contractor, the pile shall be set aside until it has been inspected by the Administrator, who will decide whether it will be rejected, or repaired by the Contractor. The cost of repairs to damaged piles and the cost of replacing rejected piles shall be borne by the Contractor.

##### **4.1.2.4 Pile Monitoring (PM)**

In the event that a pile has been driven to design level or some other level and PM monitoring is undertaken and this indicates set has not been achieved, the pile will then be driven to the required set or some level as determined by the Administrator, at that time a full PM item is required and the data reported to the Administrator. Intermediate PM data need not be formally supplied to the Administrator.

### **4.2 No additional payment for compliance with MRTS66**

No additional payment shall be made for compliance with the requirements of MRTS66, including but not limited to the following:

- a) Removal of ground material forced up between the piles during the driving operation (Clause 7.1 of MRTS66)
- b) Remedial measures required to accommodate out-of tolerance piles (Clause 7.4 of MRTS66)
- c) Dynamic testing of piles driven using an alternative hammer (Clause 7.5.3 of MRTS 66)
- d) Rectification of the damage or replacement of the pile where damage to piles is attributable to the Contractor's method for handling or driving (Clause 7.7 of MRTS66).
- e) Monitoring of the set of the pile when the set has not as yet been achieved and further driving is required. Only the final PM is required. Any intermediate monitoring is not required

