

Specification (Measurement)

**Transport and Main Roads Specifications
MRS75 Supply and Erection of Prestressed Concrete
Girders**

November 2018

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1 Introduction

This Specification applies to the supply and erection of prestressed concrete I-Girders and prestressed concrete Super T-Girders for bridge superstructures.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications*, MRS50 *Specific Quality System Requirements* 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 covered by this Specification are listed in Table 2.1.

Table 2.1 – Standard Work Items

Standard Item No.	Description	Unit of Measurement
Prestressed concrete girders		
71801	Prestressed concrete I-Girders, supply on Site, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
71804	Prestressed concrete Super T-Girders, supply on Site, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
Transport of prestressed concrete girders (girders supplied by the Principal)		
71824	Transport of prestressed concrete I-Girders to the Site, [<i>depth</i>] mm deep, [<i>length</i>] metres long, ex works [<i>location</i>]	each
71825	Transport of prestressed concrete Super T-Girders to the Site, [<i>depth</i>] mm deep, [<i>length</i>] metres long, ex works [<i>location</i>]	each
Erection of prestressed concrete girders		
71831	Erection of prestressed concrete I-Girders, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
71832	Erection of prestressed concrete Super T-Girders, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
Bearings		
71841	Laminated elastomeric bearings, [<i>length</i>] x [<i>breadth</i>] x [<i>depth</i>], AS 5100.4 part number [<i>part number</i>]	each
71842	Pot-type bearings, [<i>rated load capacity</i>], [<i>fixed</i> <i>sliding</i>]	each
Steelwork		
71861	Supply and installation of girder restraints	each
71862	Supply and installation of bearing restraint plates	each

2.2 Work Operations

Item 71801 Prestressed concrete I-Girders, supply on Site, [depth] mm deep, [length] metres long

Item 71804 Prestressed concrete Super T-Girders, supply on Site, [depth] mm deep, [length] metres long

These items are used only where prestressed concrete girders are supplied by the Contractor. Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) manufacture of prestressed concrete girders
- c) transport to the Site
- d) preparation of the Site storage area
- e) unloading at the Site, and
- f) storage at the Site.

Item 71824 Transport of prestressed concrete I-Girders to the Site, [depth] mm deep, [length] metres long, ex works [location]

Item 71825 Transport of prestressed concrete Super T-Girders to the Site, [depth] mm deep, [length] metres long, ex works [location]

These items are used only where prestressed concrete girders are supplied by the Principal for collection by the Contractor at the place of manufacture. Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) taking delivery of girders at the location and by the mode nominated in the Contract
- c) transport to the Site
- d) unloading at the Site, and
- e) storage at the Site.

Item 71831 Erection of prestressed concrete I-Girders, [depth] mm deep, [length] metres long

Item 71832 Erection of prestressed concrete Super T-Girders, [depth] mm deep, [length] metres long

Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) provision of temporary support including packers
- c) installation of girders onto headstocks, and
- d) cutting of lifting loops.

Item 71841 Laminated elastomeric bearings, [*length*] x [*breadth*] x [*depth*], AS 5100.4 part number [*part number*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply of bearings
- c) supply of epoxy paste
- d) preparation of bearing seats, and
- e) installation of bearings.

Item 71842 Pot-type bearings, [*rated load capacity*], [*fixed* | *sliding*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply and fabrication of bearings including compensator plates where required
- c) supply of holding-down bolts, sockets, nuts and washers
- d) protective coating of bearings
- e) testing of bearings
- f) supply of epoxy paste
- g) preparation of bearing seats, and
- h) installation of bearings.

Item 71861 Supply and installation of girder restraints

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply and fabrication of girder restraints, girder restraint wedges and bolts, nuts and washers
- c) supply of epoxy paste
- d) temporary installation during erection of girders, and
- e) permanent installation after completion of deck.

Item 71862 Supply and installation of bearing restraint plates

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply and fabrication of bearing restraint plates and screws, and
- c) installation of bearing restraint plates.

2.3 Prestressed concrete girders supplied by the Principal

2.3.1 Supply of prestressed concrete girders

Where listed in the *Principal Supplied Material List* (Form C7827), girders shall be supplied by the Principal. Where not so listed, girders shall be supplied by the Contractor.

2.3.2 Supply location

Girders 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 C7827).

2.3.3 Time of delivery

The time of delivery shall generally conform to the construction program supplied by the Contractor with its tender.

Should on-site construction be delayed, the Contractor may be required to accept delivery of the girders at any time after the programmed date and to store the girders at no cost to the Principal.

2.3.4 Acceptance of prestressed concrete girders by the Contractor

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

2.3.5 Damage to prestressed concrete girders

In the event of any girder sustaining damage after the girder has been accepted by the Contractor or Principal, such as cracking, spalling, deformation of projecting reinforcement or bolts or damage to cast-in sockets and formwork cones etc, the girder shall be set aside until it has been inspected by the Administrator or Principal. **Nonconformance** The cost of repairs to the damaged girders and the cost of replacing the rejected girders shall be borne by the Contractor or manufacturer.

