

Specification (Measurement)

**Transport and Main Roads Specifications
MRS76 Supply and Erection of Steel Girders**

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1 Introduction

This Specification applies to the supply and erection of steel 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 2.1.3 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
Steel girders and cross bracing		
71901	Steel girders, supply on Site, [<i>section</i>] / ([<i>flange width</i>] mm wide, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
71902	Steel cross bracing, supply on Site	lump sum
71903	Transport of steel girders to the Site, [<i>section</i>] / ([<i>flange width</i>] mm wide, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
71904	Transport of steel cross bracing to the Site, ex works [<i>location</i>]	lump sum
71905	Installation of steel girders, [<i>section</i>] / ([<i>flange width</i>] mm wide, [<i>depth</i>] mm deep, [<i>length</i>] metres long	each
71906	Installation of steel cross bracing	lump sum
Bearings		
71931	Supply and installation of laminated elastomeric bearings, [<i>length</i>] x [<i>breadth</i>] x [<i>depth</i>], AS 5100.4 part number [<i>part number</i>]	each
71932	Supply and installation of pot-type bearings, [<i>rated load capacity</i>], [<i>fixed</i> <i>sliding</i>]	each
Girder restraints		
71961	Installation of girder restraints	lump sum

2.2 Work Operations

Item 71901 Steel girders, supply on Site, [*section*] / ([*flange width*] mm wide, [*depth*] mm deep, [*length*] metres long

Item 71902 Steel cross bracing, supply on Site

These items are used only where steel girders and / or steel cross bracing 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 steel girders and / or steel cross bracing, as applicable
- c) manufacture of girder restraints, fastening bolts, nuts and washers, where applicable

- d) transport to the Site
- e) preparation of the Site storage area
- f) unloading at the Site, and
- g) storage at the Site.

Item 71903 Transport of steel girders to the Site, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long

Item 71904 Transport of steel cross bracing to the Site, ex works [location]

These items are used only where steel girders and / or steel cross bracing 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 (including girder restraints, fastening bolts, nuts and washers, where applicable) and / or cross bracing 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 71905 Installation of steel girders, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) removal of advertising labels, and
- c) installing girders onto headstocks.

Item 71906 Installation of steel cross bracing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) installation of cross bracing.

Item 71931 Supply and installation of 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 71932 Supply and installation of 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
- c) supply of holding-down bolts, sockets, nuts and washers
- d) protective coating of bearings
- e) testing of bearings
- f) preparation of bearing seats, and
- g) installation of bearings.

Item 71961 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 of epoxy paste
- c) temporary installation during erection of girders, and
- d) permanent installation after completion of deck.

2.3 Steel girders and associated steel components supplied by the Principal

2.3.1 Supply of steel girders

Where listed in the Principal Supplied Materials List (Form C7827), steel girders, cross bracing and girder restraints shall be supplied by the Principal. Where not so listed, steel girders, cross bracing and girder restraints shall be supplied by the Contractor.

2.3.2 Supply location

Steel girders, cross bracing and girder restraints supplied by the Principal will be made available at the point of delivery and by the transport mode shown in the Principal Supplied Materials 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, cross bracing and girder restraints at any time after the programmed date and to store the girders at no cost to the Principal.

2.3.4 Acceptance of the girders by the Contractor

The Contractor shall check the girders, cross bracing and girder restraints for quantity and condition upon taking delivery and shall immediately report to the Administrator any defect or deficiency.

Nonconformance

2.3.5 Damage to girders

In the event of any girder, cross bracing and/or girder restraint sustaining damage after the item has been accepted by the Contractor, such as buckling, damage to coating or surface quality, the item shall be set aside until it has been inspected by the Administrator or Principal. **Nonconformance** The cost of repairs to the damaged girders, cross bracing and/or girder restraints and the cost of replacing the rejected girders, cross bracing and/or girder restraints shall be borne by the Contractor or manufacturer.

