

Main Roads Specification

MRS76

Supply and Erection of Steel Girders

TRADEMARKS ACKNOWLEDGEMENT

Terms mentioned in this document that are known or understood to be trademarks, whether registered or not, have been identified. Where trademarks have been confirmed as registered in Australia, this has been indicated by the addition of the ® symbol, otherwise the ™ symbol is used. While all care has been taken to identify trademarks, users should rely on their own inquiries to determine trademark ownership. Use of a term in this document as a trademark should not be regarded as affecting the validity of any trademark.

IMPORTANT INFORMATION

The requirements of this document represent Technical Policy of the department and contain Technical Standards. Compliance with the department's Technical Standards is mandatory for all applications for the design, construction, maintenance and operation of road transport infrastructure in Queensland by or on behalf of the State of Queensland.

This document will be reviewed from time to time as the need arises and in response to improvement suggestions by users. Please send your comments and suggestions to the feedback email given below.

FEEDBACK

Your feedback is welcomed. Please send to mr.techdocs@tmr.qld.gov.au.

DISCLAIMER

This publication has been created for use in the design, construction, maintenance and operation of road transport infrastructure in Queensland by or on behalf of the State of Queensland.

Where the publication is used in other than the department's infrastructure projects, the State of Queensland and the department gives no warranties as to the completeness, accuracy or adequacy of the publication or any parts of it and accepts no responsibility or liability upon any basis whatever for anything contained in or omitted from the publication or for the consequences of the use or misuse of the publication or any parts of it.

If the publication or any part of it forms part of a written contract between the State of Queensland and a contractor, this disclaimer applies subject to the express terms of that contract.

COPYRIGHT

Copyright protects this publication. Except for the purposes permitted by and subject to the conditions prescribed under the Copyright Act, reproduction by any means (including electronic, mechanical, photocopying, microcopying or otherwise) is prohibited without the prior written permission of the department. Enquiries regarding such permission should be directed to the Pavements, Materials, Geotechnical and Standards Division, Queensland Department of Transport and Main Roads.

© State of Queensland (Department of Transport and Main Roads) 2010



<http://creativecommons.org/licences/by-nc-nd/2.5/au>

Table of Contents

	Page
1 INTRODUCTION.....	1
2 MEASUREMENT OF WORK.....	1
2.1 Standard Work Items.....	1
2.2 Work Operations.....	1
2.3 Steel Girders Supplied by the Principal.....	3
2.3.1 Supply of Girders	3
2.3.2 Supply Location	3
2.3.3 Time of Delivery	3
2.3.4 Acceptance of the Girders by the Contractor	3
2.3.5 Damage to Girders	3

Supply and Erection of Steel Girders

1 INTRODUCTION

This Specification applies to the supply and/or erection of steel girders for a bridge superstructure.

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

This Specification forms part of the Main Roads Specifications and Technical Standards 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 Work Item No.	Description	Unit of Measurement
Steel Girders		
8251	Steel girders, supply on Site, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long.	each
8252	Steel cross bracing, supply on Site.	lump sum
8253	Transport of steel girders to the Site, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long.	each
8254	Transport of steel cross bracing to the Site, ex works [location].	lump sum
8255	Erection of steel girders, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long.	each
8256	Erection of steel cross bracing.	lump sum
8257	Installation of bearings for rolled steel girders.	each
Bearings		
8261	Supply and installation of laminated elastomeric bearings, [length] x [breadth] x [depth].	each
8262	Supply and installation of pot-type bearings, [rated load capacity], [fixed / sliding].	each
Girder Restraints		
8271	Supply and installation of girder restraints.	each

2.2 Work Operations

Item 8251 Steel girders, supply on Site, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long.

Item 8252 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 stainless steel/PTFE expansion bearings, 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 8253 Transport of steel girders to the Site, [section] / ([flange width] mm wide, [depth]) mm deep, [length] metres long.

Item 8254 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 expansion bearings, where applicable) and/or cross bracing at the location and by the mode nominated in the schedules;
- c) Transport to the Site;
- d) Unloading at the Site; and
- e) Storage at the Site.

Item 8255 Erection 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 on substructure.

Item 8256 Erection 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*;
- b) Erection of cross bracing; and
- c) Welding of cross bracing to girders.

Item 8257 Installation of bearings for rolled steel girders.

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 cement mortar; and
- c) Installation of bearing.

Item 8261 Supply and installation of laminated elastomeric bearings, [length] x [breadth] x [depth].

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 putty;
- d) Preparation of bearing seat; and
- e) Installation of bearing.

Item 8262 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 and sockets;
- d) Protective coating of bearings;
- e) Testing of bearings;
- f) Supply of epoxy putty;
- g) Preparation of bearing seat; and
- h) Installation of bearing.

Item 8271 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 restraint angles and fastening bolts, nuts and washers;
- c) Supply of epoxy putty;
- d) Temporary installation during erection of girders; and
- e) Permanent installation after completion of deck.

2.3 Steel Girders Supplied by the Principal

2.3.1 Supply of Girders

Where listed in the Principal Supplied Materials List (Form C6827), steel girders, cross girders and/or expansion bearings shall be supplied by the Principal. Where not so listed, steel girders, cross bracing and/or expansion bearings shall be supplied by the Contractor.

2.3.2 Supply Location

Steel girders, cross bracing and or expansion bearings 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 C6827).

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 the Girders by the Contractor

The Contractor shall check the girders, cross bracing and/or expansion bearings for quantity and condition upon taking delivery and shall immediately report to the Superintendent any defect or deficiency.

Nonconformance

2.3.5 Damage to Girders

In the event of a girder, any cross bracing or expansion bearing sustaining damage after the item has been accepted by the Contractor, such as damage to coatings or surface quality, the item shall be set aside until it has been inspected by the Superintendent **Nonconformance**. The cost of repairs to damaged girders, cross bracing and/or expansion bearings and the cost of replacing rejected girders, cross bracing and/or expansion bearings shall be borne by the Contractor.