

# Main Roads Specification

## **MRS75**

### **Supply and Erection of Prestressed Concrete Girders**

**October 10**

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# Supply and Erection of Prestressed Concrete Girders

## 1 INTRODUCTION

This Specification applies to the supply and/or erection of prestressed concrete I girders and prestressed concrete T 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
<b>Prestressed Concrete I Girders</b>		
8201	Prestressed concrete I girders, supply on Site, [ <i>depth</i> ] mm deep, [ <i>length</i> ] metres long.	each
8202	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
8203	Erection of prestressed concrete I girders, [ <i>depth</i> ] mm deep, [ <i>length</i> ] metres long.	each
<b>Prestressed Concrete T Girders</b>		
8211	Prestressed concrete T girders, supply on Site, [ <i>girder type</i> ], [ <i>depth</i> ] mm deep, [ <i>length</i> ] metres long.	each
8212	Transport of prestressed concrete T girders to the Site, [ <i>girder type</i> ], [ <i>depth</i> ] mm deep, [ <i>length</i> ] metres long, ex works [ <i>location</i> ].	each
8213	Erection of prestressed concrete T girders, [ <i>girder type</i> ], [ <i>depth</i> ] mm deep, [ <i>length</i> ] metres long.	each
<b>Bearings</b>		
8221	Laminated elastomeric bearings, [ <i>length</i> ] x [ <i>breadth</i> ] x [ <i>depth</i> ].	each
8222	Pot-type bearings, [ <i>rated load capacity</i> ], [ <i>fixed / sliding</i> ].	each
<b>Girder Restraints</b>		
8231	Girder restraints.	each

### 2.2 Work Operations

**Item 8201** Prestressed concrete I girders, supply on Site, [*depth*] mm deep, [*length*] metres long.

**Item 8211** Prestressed concrete T girders, supply on Site, [*girder type*], [*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 8202 Transport of prestressed concrete I girders to the Site, [*depth*] mm deep, [*length*] metres long, ex works [*location*].**

**Item 8212 Transport of prestressed concrete T girders to the Site, [*girder type*], [*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 schedules;
- c) Transport to the Site;
- d) Unloading at the Site; and
- e) Storage at the Site.

**Item 8203 Erection of prestressed concrete I girders, [*depth*] mm deep, [*length*] metres long.**

**Item 8213 Erection of prestressed concrete T girders, [*girder type*], [*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) Removal of advertising labels; and
- c) Installing girders on substructure.

**Item 8221 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 8222 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 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 8231 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 Prestressed Concrete Girders Supplied by the Principal**

**2.3.1 Supply of Girders**

Where listed in the Principal Supplied Materials List (Form C6827), prestressed concrete girders shall be supplied by the Principal. Where not so listed, prestressed concrete 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 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 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 sustaining damage after the girder has been accepted by the Contractor, such as cracking and spalling or deformation of projecting reinforcement or bolts or damage to cast-in sockets and formwork cones, the girder shall be set aside until it has been inspected by the Superintendent. **Nonconformance** The cost of repairs to damaged girders and the cost of replacing rejected girders shall be borne by the Contractor.