

Main Roads Specification

MRS89

Post-tensioned Concrete

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Post-Tensioned Concrete

1 INTRODUCTION

This specification sets out the requirements for the supply, installation, stressing, grouting and corrosion protection of post-tensioned, internal prestressing tendons and their anchorages and other components for construction of post-tensioned concrete.

This specification does not fully specify post-tensioning systems comprising ungrouted internal tendons or stay cables.

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 incorporated in this specification are listed in Table 2.1.

Table 2.1 - Standard Work Items

Standard Item No	Description	Unit of Measurement
8391	Concrete Class [<i>compressive strength</i>] MPa/20 in slab deck/superstructure.	m ³
8392	Anchorage Type [<i>type</i>].	each
8393	Ducts, [<i>diameter</i>] mm diameter.	m
8394	Strand tendons, [<i>number</i>], [<i>size</i>] mm diameter.	tonne
8395	Post-tensioned stressing bar units, [<i>size</i>] mm diameter.	each
8396	Stressing bars/tendons Type [<i>type</i>].	each
8397	Grouting duct, [<i>diameter</i>] mm diameter.	m
8398	Capping anchorage recesses and anchorage.	each

2.2 Work Operations

Item 8391 Concrete Class [*compressive strength*] MPa/20 in slab deck/superstructure.

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- b) Supply of concrete;
- c) Transport of concrete;
- d) Construction of formwork and falsework, including formwork for voids, block outs, junction boxes and recesses;
- e) Placing and compacting concrete;
- f) Finishing and curing concrete;
- g) Removal of formwork and falsework;
- h) Dressing of concrete;
- i) Fillers and sealants, unless measured separately; and
- j) Embedded and attached items, unless measured separately.

Item 8392 Anchorages Type [*type*].

Item 8393 Ducts, [*diameter*] mm diameter.

Item 8394 Strand tendons, [Number], [Size] mm diameter.

Item 8398 Capping anchorage recesses and anchorage.

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- b) Supply of materials;
- c) Transport to site; and
- d) Installation of all materials.

Item 8395 Post-tensioned stressing bar units, [Size] mm diameter.

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- b) Manufacture of stressing units;
- c) Transport to site;
- d) Installation of stressing bar units;
- e) Provision of stressing jack; and
- f) Stressing operations.

Items 8396 Stressing bars/tendons Type [type].

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- b) Supply and installation of all materials;
- c) Provision of stressing jacks; and
- d) Carrying out all stressing operations.

Items 8397 Grouting duct, [diameter] mm diameter.

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- b) Supply and installation of all materials;
- c) Provision of grouting equipment; and
- d) Carrying out all grouting operations.

2.3 Calculation of Quantities

2.3.1 Concrete

The quantity of concrete shall be calculated in accordance with Clause 2.3 of MRS70 *Concrete*.

2.3.2 Anchorages

Anchorages shall be measured as the number of each type shown in the Drawings.

2.3.3 Ducts

Ducts shall be measured as the length of duct required as measured from the Drawings.

2.3.4 Strand Tendons

Strand tendons shall be measured in tonnes of strand used to make up the tendons as shown in the Drawings. The length of tendon considered in determining the mass shall be the length from face to face of anchorage plates plus 200 mm.

2.3.5 Stressing Bar Units

Stressing bar units shall be measured as the number of each size shown in the Drawings.

2.3.6 Stressing Operations

Stressing bars and tendons shall be measured as the number stressed as specified.

2.3.7 Grouting

Grouting shall be measured in metres of ducts grouted.

2.3.8 Capping Anchorage Recesses

Capping anchorage recesses and anchorages shall be measured as the number shown in the Drawings.