Specification (Measurement)

Transport and Main Roads Specifications
MRS228 Electrical Switchboards

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1 Introduction

This Specification applies to the supply and installation of switchboards for the supply of electrical power to electrical installations, including traffic signal installations and Rate-2 and Rate-3 road lighting installations.

This Specification shall be read in conjunction with MRS01 Introduction to Specifications, MRTS95 Provision of Switchboards and other Specifications as appropriate.

This Specification forms part of the Transport and Main Roads Specifications Manual.

The title of MRS95 had been changed from Switchboards and Cables to Switchboards. All references to electrical cables had been moved to new specification MRTS256 and MRS256.

2 Measurement of Works

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

<table>
<thead>
<tr>
<th>Standard Item No.</th>
<th>Description</th>
<th>Unit of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6802</td>
<td>Supply of pole-mounted switchboard and ancillary components.</td>
<td>each</td>
</tr>
<tr>
<td>6803</td>
<td>Supply and construction of a concrete pad for the erection of switchboard pole</td>
<td>lump sum</td>
</tr>
<tr>
<td>6804</td>
<td>Installation of pole-mounted switchboard and ancillary components.</td>
<td>each</td>
</tr>
<tr>
<td>6637</td>
<td>Supply and installation of joint use traffic signal and road lighting pole, [length] metres long.</td>
<td>each</td>
</tr>
</tbody>
</table>

Mains Connection

| 6831              | Supply of mains connection equipment, including the supply of mains connection cable, [length], [usage], [conductor size], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]. | each                |
| 6832              | Installation of mains connection including mains connection cable.          | each                |

2.2 Work Operations

Item 6802 Supply of pole-mounted switchboard and ancillary components

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 switchboard post as per Standard Drawing 1628
c) supply of pole-mounted switchboard enclosure
d) supply of electrical components, including din rail, mains isolation switch, circuit breakers, change over switch and contactors

e) supply of photoelectric control switch and socket

f) supply of earth stake and cabling, and

g) supply of Type 4 electrical pit and 50 mm PVC conduit to switchboard.

Item 6803  Construction of a concrete pad for the erection of switchboard pole

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 construction of a 150 mm thick, N25/20 concrete pad for the erection of the switchboard pole as per Standard Drawing 1627.

Item 6804  Installation of pole-mounted switchboard and ancillary components

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) installation of switchboard post

c) installation of switchboard on post

d) installation of pit and conduit

e) installation and mounting of switchboard electrical components

f) installation of photoelectric control switch and cabling to switchboard

g) installation and cabling of earth stake

h) connection of mains connection cabling and road lighting cabling to switchboard

i) testing of installation, and

j) installation of switchboard cover.

Item 6637  Supply and installation of joint use traffic signal and road lighting pole, [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) supply, fabrication and installation of pole

c) mortar grouting of base plate

d) supply and installation of traffic signal terminal panel and road lighting terminal panel

e) supply and installation of road lighting cable from pit to luminaire and supply and installation of road lighting junction box in pit

f) supply of all fixing bolts, nuts and washers, and

g) testing of road lighting installation.
**Item 6831  Supply of mains connection equipment, including the supply of mains connection cable, [length], [usage], [conductor size], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]**

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 mains connection equipment

c) supply of mains connection cable from pole to switchboard (for Rate-3) or road lighting pole/cable joint (for Rate-2), and

d) supply of UV-stabilised 50 mm PVC conduit and fittings.

**Item 6832  Installation of mains connection including mains connection cable**

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) installation of mains connection equipment on pole

c) installation of conduit on pole and to pit

d) installation of conduit from pit to switchboard (for Rate-3) or road lighting pole/cable joint (for Rate-2)

e) installation of cable from pit to switchboard (for Rate-3) or road lighting pole/cable joint (for Rate-2), and

f) testing of installation.