Specification (Measurement)

Transport and Main Roads Specification
MRS234 Communications Cables

July 2015
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1 Introduction

This Specification applies to the requirements for the supply of materials and equipment, installation, testing, commissioning and maintenance handover documentation of the Provision of telecommunications cable.

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

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

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>
<thead>
<tr>
<th>Standard Item No.</th>
<th>Description</th>
<th>Unit of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6981</td>
<td>Supply of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]</td>
<td>metre</td>
</tr>
<tr>
<td>6982</td>
<td>Installation of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]</td>
<td>metre</td>
</tr>
<tr>
<td>6983</td>
<td>Supply and Installation of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]</td>
<td>metre</td>
</tr>
<tr>
<td>6984</td>
<td>Supply of Single-Mode Optical Fibre (SMOF) cable of [type] type and [number of cores] cores</td>
<td>metre</td>
</tr>
<tr>
<td>6985</td>
<td>Installation of Single-Mode Optical Fibre (SMOF) of [cable type] and [number of cores] cores</td>
<td>metre</td>
</tr>
<tr>
<td>6986</td>
<td>Supply and Installation of Single-Mode Optical Fibre (SMOF) cable of [type] type and [number of cores] cores</td>
<td>metre</td>
</tr>
<tr>
<td>6987</td>
<td>Supply of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type</td>
<td>each</td>
</tr>
<tr>
<td>6988</td>
<td>Installation of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type</td>
<td>each</td>
</tr>
<tr>
<td>6989</td>
<td>Supply and Installation of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type</td>
<td>each</td>
</tr>
<tr>
<td>6991</td>
<td>Supply of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [Simplex</td>
<td>Duplex] cores</td>
</tr>
<tr>
<td>6992</td>
<td>Installation of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [number of cores] cores</td>
<td>each</td>
</tr>
<tr>
<td>Standard Item No.</td>
<td>Description</td>
<td>Unit of Measurement</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>6993</td>
<td>Supply and Installation of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [Simplex</td>
<td>Duplex] cores</td>
</tr>
<tr>
<td></td>
<td>Fibre optic break out terminal (FOBOT)</td>
<td></td>
</tr>
<tr>
<td>6836</td>
<td>Supply of Fibre Optic Break Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails</td>
<td>sockets] pigtails / sockets</td>
</tr>
<tr>
<td>6837</td>
<td>Installation of Fibre Optic Break Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails</td>
<td>sockets] pigtails / sockets</td>
</tr>
<tr>
<td>6838</td>
<td>Supply and Installation of Fibre Optic Break Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails</td>
<td>sockets] pigtails / sockets</td>
</tr>
<tr>
<td></td>
<td>Fibre optic splicing closure (FOSC)</td>
<td></td>
</tr>
<tr>
<td>6994</td>
<td>Supply of underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments</td>
<td>each</td>
</tr>
<tr>
<td>6995</td>
<td>Installation of underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments</td>
<td>each</td>
</tr>
<tr>
<td>6996</td>
<td>Supply and Installation of underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments</td>
<td>each</td>
</tr>
<tr>
<td>6997</td>
<td>Disconnection and removal of an existing [rack units] rack unit FOBOT with [number of pigtails] pigtails from a cabinet</td>
<td>each</td>
</tr>
<tr>
<td></td>
<td>Removal of existing cable, equipment and components</td>
<td></td>
</tr>
<tr>
<td>6998</td>
<td>Removal of telecommunications cable, equipment or other ancillary components from for disposal</td>
<td>each</td>
</tr>
</tbody>
</table>

2.2 Work Operations

Item 6981 Supply of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]

Item 6984 Supply of Single-Mode Optical Fibre (SMOF) cable of [type] type and [number of cores] cores

Item 6987 Supply of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type

Item 6991 Supply of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [Simplex | Duplex] cores

Item 6836 Supply of Fibre Optic Break-Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails | sockets] pigtails / sockets

Item 6994 Supply of Underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications
b) supply all materials to site.

**Item 6982** Installation of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]

**Item 6985** Installation of Single-Mode Optical Fibre (SMOF) of [cable type] and [number of cores] cores

**Item 6988** Installation of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type

**Item 6992** Installation of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [number of cores] cores

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 cables through ducting, trays, patch cable management as appropriate

c) replacement of draw ropes in ducting (where applicable)

d) connection and termination of cables, and

e) testing of cabling.

**Item 6983** Supply and Installation of Telecommunications [cable type], [number of cores] cores, [core insulation], [sheath insulation], [conductor material]

**Item 6986** Supply and Installation of Single-Mode Optical Fibre (SMOF) cable of [type] type and [number of cores] cores

**Item 6989** Supply and Installation of copper patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type

**Item 6993** Supply and Installation of Single-Mode Optical Fibre (SMOF) patch lead, [length of cable] metres, [end connector type 1] type, [end connector type 2] type and [Simplex | Duplex] cores

Work Operations incorporated in the above item include:

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

b) supply all materials to site

c) installation of cables through ducting, trays, patch cable management as appropriate

d) replacement of draw ropes in ducting (where applicable)

e) connection and termination of cables, and

f) testing of cabling.
Item 6837  Installation of Fibre Optic Break-Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails | sockets] pigtails / sockets

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications
b) install FOBOT within cabinet
c) terminate cables to FOBOT, and
d) labelling and testing of cabling.

Item 6838  Supply and Installation of Fibre Optic Break-Out Terminal (FOBOT), [rack units] units, [type] and [number of cable pigtails | sockets] pigtails / sockets

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications
b) supply all materials to site
c) install FOBOT within cabinet
d) terminate cables to FOBOT, and
e) labelling and testing of cabling.

Item 6995  Installation of Underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments

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 cables through ducting
c) replacement of draw ropes in ducting (where applicable)
d) preparation and splicing of cables within FOSC, and
e) testing of cabling.

Item 6996  Supply and Installation of Underground rated Fibre Optic Splicing Closure (FOSC) for the fusion splicing of [number of cores] fibre optic cable segments

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications
b) supply all materials to site
c) installation of cables through ducting
d) replacement of draw ropes in ducting (where applicable)
e) preparation and splicing of cables within FOSC, and
f) Testing of cabling.
**Item 6998  Removal of telecommunications cable, equipment or other ancillary components from for disposal**

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
b) disconnection of telecommunications cable, equipment or other ancillary components
c) removal of telecommunications cable, and
d) transport and disposal of all removed cabling.

**Item 6997  Disconnection and removal of an existing [rack units] rack unit FOBOT with [number of pigtails] pigtails from a cabinet**

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
b) disconnection of cables from FOBOT
c) disconnection of FOBOT from cabinet, and
d) transport and disposal of FOBOT.

### 2.3 Method of measurement of provision of telecommunications cable

This specification provides Standard Work Items for:

a) supply only
b) installation only, and
c) supply and installation

of Provision of Telecommunications Cable.

Any combination of Standard Work Items relating to these methods of measurement may be used in the Schedule of Rates. However, where a Standard Work Item for supply and installation of a particular component or group of components is included in the Schedule of Rates, no supply only nor installation only Standard Work Item shall also apply to that component or group of components, as applicable.

### 2.4 Supply of materials

Any materials to be supplied by the Principal will be as stated in the Principal Supplied Material List, Form C6827. All other material shall be supplied by the Contractor.

The responsibility for transport to the Site of materials supplied by the Principal shall be as stated in the Principal Supplied Material List, Form C6827. Transport to the Site of all other materials shall be the responsibility of the Contractor.