

# Roads

## Master Specification

### RD-EL-C5 Consumer Mains Electrical Power Distribution

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## RD-EL-C5 Consumers Mains Electrical Power Distribution

### 1 General

- 1.1 This Part specifies the requirements for the supply and installation of a consumer mains electrical distribution system.
- 1.2 The Contractor shall undertake the scope for the work as shown on the drawings and specified by the Principal (if applicable). It may include:
  - a) a high voltage (11 kV) transmission main;
  - b) a low voltage (415 V) main connecting service pits at property boundaries;
  - c) consumer connections between private buildings and service pits; and
  - d) changeover of supply to the new system and the decommissioning of the existing overhead system.
- 1.3 The power distribution system may be underground.
- 1.4 All electrical installations shall be carried out by an electrical worker who is licensed to perform any electrical works and shall comply with AS 3000, the Electrical Legislation, and the Service Rules and Conditions of Supply of SA Power Networks (SAPN). Undergrounding and decommissioning of the mains shall be carried out by a subcontractor acceptable to SAPN for carrying out this class of work.

### 2 Conduits

- 2.1 Conduits shall be supplied and installed in accordance with RD-EL-C3 "Supply and Installation of Conduits and Pits", with the following additional requirements:
  - a) conduits shall be the diameter shown on the SAPN Drawing and laid in accordance with the Drawings; and
  - b) prior to placing conduits, 100 mm of Sa-C Type C Sand shall be placed on the trench floor.
- 2.2 Conduits are to be cleaned of any material that may result in damage to the cables when drawing and shall be cleanly and squarely cut at ends and glued at each joint. Low voltage conduits shall be terminated in low voltage service pillars as shown on the Drawings and the following SAPN Drawings:
  - a) E1921 - UD LV Service or Junction Pit, Looped, Footpath Use.
  - b) E1922 - UD Low Voltage - Service Pillar – Looped.
- 2.3 The Contractor shall contact SAPN Utilities to obtain copies of these drawings.
- 2.4 Conduits shall be covered by at least 300 mm of Sa-C Type C Sand, with plastic tape marked "Electrical Cable" laid 300 mm above the conduit along the full length of all electrical conduit trenches, unless otherwise specified. More than one tape shall be laid in trenches wider than 500 mm prior to backfill. Backfill shall comply with the requirements of RD-EL-C1 "Installation of Lighting for Roads and Public Spaces", Clause 4.1 "Backfill".

### 3 Wiring

- 3.1 The Contractor shall supply and install all components necessary for the works to meet the requirements of SAPN. The Contractor shall be responsible for obtaining SAPN's current requirements for this type of work. The Contractor shall change over supply from the overhead services to the underground services, and liaise with SAPN to determine their requirements for the changeover.

## 4 Consumer Electrical Services

- 4.1 The Contractor shall supply and install an electrical service from the new service main (located in low voltage service pillars near property boundaries) to each dwelling, and change over the above ground service to the new underground supply.
- 4.2 At least 1 week prior to the installation of the service, the Contractor shall meet with the occupier of each property. The impact of the work shall be explained and a mutually convenient time arranged for installation of the new service and changeover to the new service. In the event of any dispute or unresolved complaint from the occupier, a written report outlining the matter shall be provided within 24 hours.
- 4.3 The Contractor shall provide onsite during the installation of these services, a competent Supervisor who is:
  - a) fluent in the English language;
  - b) sensitive to the property owners requirements; and
  - c) has authority to action instructions given by the Superintendent.
- 4.4 The Contractor shall comply with the requirements and regulations of the local Council and any other relevant Australian Standard for each property. Prior approval of any proposed variations from the Principal or Drawings shall be sought prior to the commencement of the installation.
- 4.5 The Contractor shall carry out all civil, structural and building work required for access, construction, installation, operation and maintenance of the installation. The Contractor shall ensure that the strength and rigidity of materials and fasteners are adequate to prevent failure, significant movement, or deflection under reasonable operating conditions. The Contractor shall form all necessary openings and recesses, and make good and perform any other incidental work required for the installation of the services. All penetrations shall be sealed to maintain the integrity of fire, sound and weather barriers as appropriate.
- 4.6 Before disconnecting the supply to any consumer, the phase rotation of the supply at the load terminals of the existing service fuses, the phase sequence, and the active conductors shall be identified, checked and recorded in a log book.
- 4.7 After disconnecting the consumer mains from the existing service fuses, the phase sequence of the new SAPN supply shall be tested at the load terminals of the new service fuses to ensure that the phase rotation of the new supply is identical to that of the previous supply.
- 4.8 The Contractor shall be responsible for rectifying any incorrect connection and shall assume responsibility for all costs to repair damages caused to consumer equipment by the reversal of the existing sequence.

## 5 Decommissioning Of Existing Services

- 5.1 At the completion of changeover to the new supply, the Contractor shall remove and dispose of all redundant poles and wires in accordance with any applicable environmental legislation.

## 6 Hold Points

- 6.1 There are no Hold Points referenced in this Part.
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