

**PART 1 GENERAL**

**1.1 REFERENCES**

- .1 CSA International
  - .1 CSA C22.2 No.40-M1989 (R2009), Cutout, Junction and Pull Boxes.

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit required samples and documents.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for raceway, ducts, and boxes and include product characteristics, performance criteria, physical size, finish and limitations.

**1.3 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with closeout submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for raceway, ducts, and boxes for incorporation into manual.

**1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
  - .1 Store materials off ground indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect raceway, ducts, and boxes from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

## **PART 2 PRODUCTS**

### **2.1 SPLICE BOXES**

- .1 Splice boxes cast iron enclosures 6 mm thick painted with chromate primer and gray enamel to provide mechanical protection and moisture seal for direct buried cable splices rated 5 kV and consisting of:
  - .1 Two halves, split along cable axis, finely ground matching surfaces, fastened with galvanized steel bolts, top half with large filling holes with gasketed plugs for medium hard asphalt base compound, bottom half with screws on inside for bonding armour, and box end openings sealed by:
    - .1 Wrapping cables with anhydrous tape and clamping to make snug fit, for 4 way splices.
    - .2 Fitting boxes with cable entrance fittings suitable for neoprene sheaths, for 4 way splices.

### **2.2 JUNCTION BOXES – SUBWAY LEVEL**

- .1 Welded steel rectangular boxes, painted with chromate primer and gray enamel, steel plate lids, galvanized forged steel C clamps, silicon-bronze screws, oil resistant gaskets, lined and phases partitioned with bakelite, copper strap buses plastic insulation enclosed mounted on porcelain supports, disconnecting links, insulated switch stick operated at no voltage, interchangeable unit cable heads compound filled, equipped with air valve, designed to operate at 14 kPa air pressure, rated 3 phase, 5 kV, 250 A with number of ways and sets of disconnecting links, for mounting in maintenance holes.

### **2.3 JUNCTION BOXES – DISTRIBUTION LEVEL**

- .1 Welded steel rectangular boxes 6 mm thick minimum painted with chromate primer and gray enamel with removable plate on front side, designed for through run of main cable and porcelain enclosed disconnecting branches of 3 conductor cables, standard designed for no voltage disconnecting, and for wall mounting in maintenance holes, branch cables rated 250 A, 5 kV, filled with medium hard asphalt base compound.

### **2.4 JUNCTION BOXES – POWER LEVEL**

- .1 Welded steel rectangular boxes, oil resistant gasketed steel plate lids fastened with silicon-bronze bolts, shot blasted and painted with chromate primer and gray enamel, cable heads medium hard asphalt compound filled, cap nut sealed potheads with stuffing box entrances, disconnecting links insulated switch stick operated at no voltage rated 500 A at 7,500 V, 4 way for wall mounting in maintenance holes.

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**PART 3        EXECUTION**

**3.1            EXAMINATION**

- .1      Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for raceway and boxes installation in accordance with manufacturer's written instructions.
  - .1      Visually inspect substrate in presence of the Departmental Representative.
  - .2      Inform the Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3      Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from the Departmental Representative.

**3.2            INSTALLATION**

- .1      Install splice boxes at cable joint, on floor of trench. Tighten armour clamps and fill with compound.
  - .1      Ground splice boxes as required.
- .2      Install junctions boxes on trench floor around cable splice to CSA C22.2 No. 40. Connect cable terminals to box contacts.
  - .1      Ground junction boxes as required.
  - .2      Fasten lid securely and check for air leaks before trench is backfilled.
- .3      Install subway level steel boxes on wall of maintenance holes. Connect cables to bus, install links, fasten lid, and check for air leaks.
  - .1      Ground steel boxes as required.
- .4      Install distribution level steel boxes on walls of maintenance holes. Splice main cable in box and connect branch feeder. Fasten cover and fill with compound.
  - .1      Ground steel boxes as required.
- .5      Install power level boxes as follows:
  - .1      Cast iron type: on trench floor, connect cable terminals to box contacts, fasten lid and fill with compound before trench is backfilled.
  - .2      Steel type: mount on wall of maintenance holes; connect cables to box terminals; install disconnect links, fasten lid securely, and check for air leaks.
  - .3      Ground power level boxes as required.

**END OF SECTION**