

## **PART 1 - GENERAL**

### **1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 20 - Wire and Box Connectors (0-1000 V).

### **1.2 REFERENCES**

- .1 Canadian Standards Association (CSA International).
  - .1 CSA C22.2 No. 0.3-09, Test Methods For Electrical Wires and Cables.
  - .2 CAN/CSA C22.2 No. 131-07(R2012), Type TECK 90 Cable.

### **1.3 PRODUCT DATA**

- .1 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Packaging Waste Management: remove for reuse packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **1.5 MEASUREMENT FOR PAYMENT**

- .1 No separate measurement for payment shall be made for items under this section. Include costs incidental in the Lump Sum Amount of work on the Combined Price Form.

## **PART 2 - PRODUCTS**

### **2.1 BUILDING WIRES**

- .1 Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG.
- .2 Copper conductors: size as indicated, with 300 V insulation of cross-linked thermosetting polyethylene material rated RW90 XLPE.

### **2.2 NMD-90 CABLE**

- .1 Conductors: Insulated, annealed copper with 90° cross linked polyethelene (XLPE) insulation, size as indicated.
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- .2 Bare bonding wire.
  - .1 Moisture resistant PVC jacket with FT-1 rating.
  - .2 Rated 300 V.

### **2.3 ARMoured CABLES**

- .1 Conductors: insulated, copper, size as indicated.
- .2 Type: AC90.
- .3 Armour: interlocking type fabricated from aluminum strip.
- .4 Connectors: anti short connectors.

### **2.4 CONTROL CABLES**

- .1 Type: 300 V stranded annealed copper conductors, size 14 AWG unless noted otherwise:
  - .1 Insulation: RW90 (XLPE).
  - .2 Shielding: metallized tapes over conductors.
  - .3 Overall covering: thermoplastic jacket.
- .2 300 V stranded annealed tinned copper conductors with thermoplastic insulation and PVC outer covering, size 14 AWG unless noted otherwise. Refer to drawings for quantity of pairs.

## **PART 3 - EXECUTION**

### **3.1 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Perform tests using method appropriate to site conditions and to approval of Department Representative and local authority having jurisdiction over installation.
- .3 Perform tests before energizing electrical system.

### **3.2 GENERAL CABLE INSTALLATION**

- .1 Install cable in ducts in accordance with Section 26 05 43.01 - Installation of Cables in Trenches and in Ducts.
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- .2 Install cable in conduits in accordance with Section 26 05 34 – Conduits, Conduit Fastenings and Conduit Fittings.
- .3 Terminate cables in accordance with Section 26 05 20 - Wire and Box Connectors - (0-1000 V).
- .4 Cable Colour Coding: to Section 26 05 00 - Common Work Results for Electrical.
- .5 Conductor length for parallel feeders to be identical.
- .6 Lace or clip groups of feeder cables at distribution centres, pull boxes, and termination points.
- .7 Wiring in walls: typically drop or loop vertically from above to better facilitate future renovations. Generally wiring from below and horizontal wiring in walls to be avoided unless indicated.
- .8 Provide numbered wire collars for control wiring. Numbers to correspond to control shop drawing legend. Obtain wiring diagram for control wiring.

### **3.3 INSTALLATION OF BUILDING WIRES**

- .1 Install wiring as follows:
  - .1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
  - .2 In underground ducts in accordance with Section 26 05 43.01 - Installation of Cables in Trenches and in Ducts.
  - .3 Provide dedicated neutral for each branch circuit.
  - .4 NMD-90 wiring inside building is not required to be installed in conduit.

### **3.4 INSTALLATION OF ARMoured CABLES**

- .1 Group cables wherever possible on channels.

### **3.5 INSTALLATION OF CONTROL CABLES**

- .1 Install control cables in conduit.
- .2 Ground control cable shield.