

## **PART 1 - GENERAL**

### **1.1 RELATED REQUIREMENTS**

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

### **1.2 REFERENCE STANDARDS**

- .1 CSA C 22.2 No. 0.3 Test Methods for Electrical Wires and Cables..

### **1.3 PRODUCT DATA**

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

## **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 600 V insulation of cross-linked thermosetting polyethylene material rated RW90 XLPE or RWU90 XLPE.
- .3 Copper conductors: size as indicated, with thermoplastic insulation type TWH rated at 600 V.

### **2.2 MINERAL-INSULATED CABLES**

- .1 Conductors: solid bare soft-annealed copper, size as indicated.
- .2 Insulation: compressed powdered magnesium oxide or silicon dioxide to form compact homogeneous mass throughout entire length of cable.
- .3 Outer covering: annealed seamless copper sheath, Type M1 rated 600 V, 250 degrees C.
- .4 Overall jacket: PVC applied over the sheath and compliant to applicable Building Code classification for this project.
- .5 Two hour fire rating.
- .6 Connectors: watertight, field installed approved for MI cable.
- .7 Termination kits: field installed approved for MI cable

### **2.3 ARMoured CABLES**

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

### **2.4 CONTROL CABLES**

- .1 Type: LVT: 2 soft annealed copper conductors, sized as indicated:
  - .1 Insulation: thermoplastic.
  - .2 Sheath: thermoplastic jacket.
- .2 Type: low energy 300 V control cable: stranded annealed copper conductors sized as indicated  
LVT: 2 soft annealed copper conductors, sized as indicated:
  - .1 Insulation: PVC TW 40 degrees C polyethylene.
  - .2 Shielding: tape coated with paramagnetic material wire braid over each conductor.
  - .3 Overall covering: PVC jackets.

### **2.5 NON-METALLIC SHEATHED CABLE**

- .1 Non-metallic sheathed copper cable type: NMD90 nylon, size as indicated.

## **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 Departmental Representative and local authority having jurisdiction over installation.
- .3 Perform tests before energizing electrical system.

### **3.2 GENERAL CABLE INSTALLATION**

- .1 Terminate cables in accordance with Section 26 05 20 - Wire and Box Connectors - (0-1000 V).
- .2 Cable Colour Coding: to Section 26 05 00 - Common Work Results for Electrical.
- .3 Conductor length for parallel feeders to be identical.
- .4 Lace or clip groups of feeder cables at distribution centres, pull boxes, and termination points.
- .5 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.
- .6 Branch circuit wiring for surge suppression receptacles and permanently wired computer and electronic equipment to be 2-wire circuits only, i.e. common neutrals not permitted.
- .7 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:
- .2 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
- .3 In surface and lighting fixture raceways in accordance with Section 26 50 00..

### **3.4 INSTALLATION OF MINERAL-INSULATED CABLES**

- .1 Install cable exposed, securely supported by straps.
- .2 Support 2 hour fire rated cables at 1 m intervals.
- .3 Make cable terminations by using factory-made kits.
- .4 Cable terminations: use thermoplastic sleeving over bare conductors.
- .5 Where cables are buried in cast concrete or masonry, sleeve for entry and exit of cables.
- .6 Do not splice cables unless indicated.

### **3.5 INSTALLATION OF ARMOURED CABLES**

- .1 Group cables wherever possible on channels.
- .2 Use only permitted in moveable partitions and vertical power supply drops for lighting.

**3.6 INSTALLATION OF ALUMINUM SHEATHED CABLE**

- .1 Group cables wherever possible on channels.

**3.7 INSTALLATION OF CONTROL CABLES**

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

**3.8 INSTALLATION OF NON-METALLIC SHEATHED CABLE**

- .1 Install cables.
- .2 Install straps and box connectors to cables as required.
- .3 Use permitted in wood stud construction only.

**END OF SECTION**