

## **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 LEED 2009 REQUIREMENTS**

- .1 LEED Documentation:
  - .1 Submit Material Safety Data Sheets (MSDS) or product data sheets, for all site applied interior paints, coatings, adhesives, sealants, sealant primers, concrete curing compounds, etc. to ensure compliance with LEED Requirements for low emitting materials as per Section 01 35 21.

## **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 and RWU90 XLPE. Use RWU90 for outdoor installations.
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## **2.2 TECK 90 CABLE**

- .1 Cable: in accordance with Section 26 05 00 - Common Work Results for Electrical and to CAN/CSA C22.2 No. 131.
- .2 Conductors:
  - .1 Grounding conductor: copper.
  - .2 Circuit conductors: copper, size as indicated.
- .3 Insulation:
  - .1 Cross-linked polyethylene XLPE.
  - .2 Rating: 1000 V.
- .4 Inner jacket: polyvinyl chloride material.
- .5 Armour: interlocking aluminum.
- .6 Overall covering: thermoplastic polyvinyl chloride, low flame spread/low gas emission (LFS/LGE), fire retardant to CSA C22.2 No. 0.3.
- .7 Fastenings:
  - .1 One hole steel straps to secure surface cables 50 mm and smaller. Two hole steel straps for cables larger than 50 mm.
  - .2 Channel type supports for two or more cables at 1200 mm centers, unless noted otherwise, and as required by local authority having jurisdiction.
  - .3 Threaded rods: 6 mm diameter to support suspended channels.
- .8 Connectors:
  - .1 Watertight, approved for TECK 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: anti short connectors.

## **2.4 CONTROL CABLES**

- .1 Type: 600 V stranded annealed copper conductors, size 14 AWG unless noted otherwise:
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- .1 Insulation: RW90 (x-link).
  - .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.

## **2.5 LEED 2009 REQUIREMENTS**

- .1 All site applied interior paints, coatings, adhesives, sealants, sealant primers, concrete curing compounds, etc. to comply with LEED Requirements for low emitting materials as per Section 01 35 21 - LEED 2009 Requirements.

## **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.
  - .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.
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- .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.

### **3.4 NSTALLATION OF TECK90 CABLE (0 -1000 V)**

- .1 Group cables wherever possible on channels.
- .2 Install cable, securely supported by cable clamps.

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

- .1 Group cables wherever possible on channels.
- .2 Install for short (less than 3 meters) length to lighting luminaires only.

### **3.6 INSTALLATION OF CONTROL CABLES**

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