

Approved: 2008-12-31

## **Part 1            General**

### **1.1               RELATED REQUIREMENTS**

- .1      Section 01 33 00 – Submittal Procedures
- .2      Section 01 74 21 – Waste Management
- .3      Section 26 05 00 – Electricity, General Requirements
- .4      Section 26 05 22 – Connections
- .5      Section 26 05 34 – Conduits, fixtures and conduit connections

### **1.2               REFERENCES**

- .1      Canadian Standards Association (CSA International)
  - .1      CSA C22.1-12, Canadian Electrical Standards, First part (22<sup>nd</sup> Edition) Security standards regarding electrical installations

### **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 and return by manufacturer of pallets, crates, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **Part 2            Products**

### **2.1               BUILDING WIRES**

- .1      Conductors: stranded; Minimum size: 12 AWG.
- .2      Copper conductors: size as indicated, with thermoplastic insulation type THHN rated at 600 V.
- .3      Cable: in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .4      Conductors:
  - .1      Grounding, copper, color                      green
  - .2      Neutral, copper, color                           white
  - .3      Supply, copper, color – 1 phase                black
  - .4      Supply, copper, color – 2 phase                red / black
  - .5      Supply, copper, color – 3 phase                red / black / blue

- .5 Connectors
- .1 Compression lugs approved and suitable drivers

## **2.2 CABLES FOR LEVEL SENSORS, INTERSTITIAL SENSORS AND LIQUID DETECTION SENSORS**

- .1 Cable: Shielded, 1 twisted pairs, Caliber: 28 AWG
- .2 Conductors: stranded, tinned copper
- .3 Insulation: Polyethylene, rated at 300 V. Color: red / black
- .4 Bare Grounding Conductor: stranded, tinned copper
- .5 Sheath: aluminum and polyester armored tape, 100% covered
- .6 Exterior jacket: polyvinyl fluorinated propylene-ethylene, FT-6 fire resistance, color: red
- .7 Operating Temperature Range: -70°C to +200°C
- .8 BELDEN, Model 88760

## **2.3 COMMUNICATION CABLES FOR GIR CARBURANT MANAGEMENT**

- .1 Cable: Shielded, 2 twisted pairs, Caliber: #18 AWG, low capacitance, appropriate for RS-485 communication
- .2 Conductors: stranded, tinned copper
- .3 Insulation: Polyethylene, or equivalent, rated at 300 V. 1<sup>st</sup> pair:
- .4 Bare Grounding Conductor: stranded, tinned copper, Caliber: 24 AWG
- .5 Sheath: aluminum and polyester armored tape, or equivalent, 100% covered
- .6 Exterior jacket: polyvinyl chloride material, or equivalent.
- .7 Operating Temperature Range: -30°C to +60°C
- .8 Manufacturer and model the same as the existing, or an equivalent

## **Part 3 Execution**

### **3.1 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.

### **3.2 GENERAL CABLE INSTALLATION**

- .1 Terminate cables in accordance with Section 26 05 22 – Connections and Terminations.

- .2 Cable Colour Coding: to Section 26 05 00 - Common Work Results for Electrical.
- .3 Lace or clip groups of feeder cables at distribution centres, pull boxes, and termination points.
- .4 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.
- .5 Provide numbered wire collars for control wiring. Numbers to correspond to control shop drawing legend. Obtain wiring diagram for control wiring.
- .6 It is prohibited to make splices in the cables.

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

- .1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings

### **3.4 INSTALLATION OF CABLES FOR SENSORS, DETECTORS AND COMMUNICATION**

- .1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings
- .2 Ground the metal weave of the cables

**END OF SECTION**