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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | February 19, 2010 | Modified ‘Related Sections’ |
| 3 | June 3, 2013 | Final Draft – Consolidated Comments Spec Update Project |
| 4 | June 18, 2013 | Incorporation of new Commissioning and Computerized Maintenance Management System Data Requirements Specification cross references (AV). |
| 5 | July 29, 2014 | Changes to reflect renaming of commissioning specification and final review (AV) |
| **6** | **November 17, 2014** | **Updated, Finalized Specification – Reference eDOCS #5630524 v5 (AV)** |
| 7 | February 2, 2015 | Updated standards (C22.2 No. 0.3-09 (R2014)) |
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NOTE:

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**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

#### Section 01300 – Submittals

#### Section 16133 – Conduits, Conduit Boxes and Cables

#### Section 16051 – Installation of Cables in Trenches and Ducts

## References

### Comply with the latest edition of the following statutes, codes, standards, and all amendments thereto:

#### CSA-C22.2 No.0.3-09 (2015), Test Methods for Electrical Wires and Cables.

#### CAN/CSA-C22.2 No.131-14, Type TECK 90 Cable.

### Refer to drawings for wiring type required under different applications.

### For all commissioning activities on systems where components of this Section are integral to functionality, refer to Section 01810 – Equipment Testing and Facility Commissioning.

## Product Data

### Submit Product data in accordance with Section 01300 – Submittals.

## Measurement and Payment

.1 All costs associated with the work of this Section shall be included in the price for Item No. A\_\_- in the Bid Form.

# PRODUCTS

## Building Wires

### Conductors: stranded for all copper conductors.

### Copper conductors: size as indicated in the Contract Documents, with 600 V insulation of chemically cross-linked thermosetting polyethylene material rated T90.

### Insulation: Type NSF-2 flame retardant rated 600 V.

## TECK Cable

### Cable: in accordance with CAN/CSA-C22.2 No.131-14.

### Conductors:

#### Grounding conductor: copper

#### Circuit conductors: copper, size as indicated in the Contract Documents.

### Inner jacket: polyvinyl chloride material.

### Armour: aluminum.

### Insulation: Cross-linked polyethylene XLPE, rating – 600 V.

### Overall covering: polyvinyl chloride material.

### Fastenings:

#### One-hole malleable iron straps to secure surface cables 50 mm and smaller. Two hole steel straps for cables larger than 50 mm in diameter.

#### Channel type supports for two or more cables at 600mm centers.

#### Threaded rods: minimum 10 mm diameter to support suspended channels.

### Connectors:

#### Watertight approved for TECK cable.

## Low Voltage Cable for VFDs

### Conductors: stranded for all copper conductors, designed to reduce high frequency noise interference.

### Three bonding conductors.

### Cross-linked polyethylene RW90 insulation on line conductors, with overall PVC jacket.

### Continuously corrugated, corrosion resistant aluminum sheath with matching connectors if specified as TECK cables.

### With overall PVC jacket rated FT4.

### Cable type to be DriveRx® cable with “D” or “W” connectors

#### Conductor sizes as indicated in the Contract Documents, and conduit sizes to suit the installation.

# EXECUTION

## Installation of Building Wires

### Install wiring as follows:

#### In conduit systems shall be in accordance with Section 16133 – Conduits, Conduit Boxes, and Cabinets.

#### In underground ducts shall be in accordance with Section 16051 – Installation of Cables in Trenches and Ducts.

## Installation of TECK Cable and VFD Cable

### Install cables in compliance with applicable sections of the Ontario Electrical Code.

### Group cables wherever possible on channels.

### Install cable in trenches in accordance with Section 16051 – Installation of Cables in Trenches and Ducts.

## Field Quality Control

### Perform tests in accordance with Section 16031 – Inspection and Testing.

### Perform tests using methods appropriate to Site conditions and to the approval of the Consultant, ESA, and other authorities having jurisdiction over the installation.

### Perform tests before energizing the electrical system and performing commissioning activities.

**END OF SECTION**