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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | February 19, 2010 | Modified ‘Related Sections’ |
| 3 | March 15, 2011 | Minor changes from Legal |
| 4 | June 3, 2013 | Final Draft – Consolidated Comments Spec Update Project |
| 5 | June 18, 2013 | Incorporation of new Commissioning and Computerized Maintenance Management System Data Requirements Specification cross references. |
| 6 | July 29, 2014 | Changes to reflect renaming of commissioning specification and final review (AV) |
| **7** | **November 17, 2014** | **Updated, Finalized Specification – Reference eDOCS #5630488 v5 (AV)** |
| 8 | February 2, 2015 | Updated standards (C22.1-12) |
| 9 | February 10, 2017 | Removed the acceptable manufacturers section. (CPD PMO, OMM) Updated Reference Standards (C22.1-15, CSA-C22.2 No. 18.4-15 (AV & AAM) |

NOTE:

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# GEneral

## Related Sections

### Section 01250 – Substitutions

### Section 01810 – Equipment Testing and Facility Commissioning

### Division 13 – SCADA and Instrumentation

### Section 16010 – Electrical General Requirements

## Measurement and Payment

### All costs associated with the work of this Section shall be included in the price(s) for Item No(s). \_\_\_ in the Bid Form.

## References

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

#### Ontario Electrical Safety Code (OESC), 28th Edition, 2021.

#### Canadian Standards Association (CSA),

##### CSA C22.2 No. 45.1-07 (R2012), Electrical Rigid Metal Conduit - Steel (Tri-National standard, with UL 6 and NMX-J-534-ANCE-2007).

##### CSA C22.1-15, Canadian Electrical Code, Part 1.

##### CSA C22.2 No. 18.3-12, Conduit, tubing, and cable fittings (Tri-national standard, with ANCE NMX-J-017 and UL 514B).

##### CSA-C22.2 No. 18.4-15 Hardware for the Support of Conduit, Tubing, and Cable (Bi-National standard, with UL 2239).

# PRODUCTS

## Outlet and Conduit Boxes General

### Size boxes in accordance with the code requirements of the Ontario Electrical Safety Code, 28th Edition.

### All materials shall be CSA approved.

### 102 mm square or larger outlet boxes as required for special devices.

### Gang boxes where wiring devices are grouped.

### Blank cover plates for boxes without wiring devices.

### 347 V outlet boxes for 347 V switching devices.

### Combination boxes with barriers where outlets for more than one system are grouped.

### All boxes used with exposed conduits shall be rigid PVC.

### Each light, switch, receptacle and/or outlet shall be provided with a suitable outlet box, each approved for the particular area in which it is to be installed.

### One outlet box shall be installed per switch, receptacle, light, etc.

## Sheet Steel Outlet Boxes

### Electro-galvanized steel single and multi gang flush device boxes for flush installation, minimum size 76 mm x 50 mm x 38 mm or as otherwise indicated in the Contract Documents. Use 102 mm square outlet boxes when more than one conduit enters one side with extension and plaster rings as required in the Contract Documents.

### Electro-galvanized steel utility boxes for outlets connected to surface-mounted EMT conduit, minimum size 102 mm x 54 mm x 48 mm

### 102 mm square or octagonal outlet boxes for lighting fixture outlets.

### 102 mm square outlet boxes with extension and plaster rings for flush mounting devices in finished walls.

## Masonry Boxes

### Electro-galvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.

## Concrete Boxes

### Electro-galvanized sheet steel concrete type boxes for flush mounting in concrete with matching extension and plaster rings as required.

## Conduit Boxes

### Cast FS boxes with factory-threaded hubs and mounting feet for surface wiring of switches and receptacles.

## Outlet Boxes for Non-metallic Sheathed Cable

### Electro-galvanized, sectional, screw ganging steel boxes, with a minimum size of [76 mm x 50 mm x 63 mm] with two double clamps to take non-metallic sheathed cables

## Fittings- General

### Bushing and connectors with nylon insulated throats.

### Knock-out fillers to prevent entry of debris.

### Conduit outlet bodies for conduit up to 32 m and pull boxes for larger conduits.

### Double locknuts and insulated bushings on sheet metal boxes.

## Service Fittings

### 'High tension' receptacle fitting made of two-piece stainless steel housing finish for single receptacle(s). Bottom plate with two knockouts for centered or offset installation. The extension piece shall be 12 mm x 102 mm as indicated in the Contract Documents.

# EXECUTION

## Installation

### Installations shall be in accordance with C22.2 No. 18.3-12, Conduit, tubing, and cable fittings.

### Installations shall be in accordance with C22.2 No. 45.1-07 (R2012), Electrical Rigid Metal Conduit - Steel (Tri-National standard, with UL 6 and NMX-J-534-ANCE-2007).

### Installations shall be in accordance with CAN/CSA-C22.2 No. 18.4-15, Hardware for the Support of Conduit, Tubing, and Cable (Bi-National standard, with UL 2239).

### Support boxes independently of connecting conduits.

### Fill boxes with paper, sponges or foam or similar approved material to prevent the entry of debris during construction. Remove upon the completion of the Work.

### For flush installations, mount outlets flush with the finished wall using plaster rings to permit the wall finish to come within 6 mm of the opening.

### Provide the correct size of openings in boxes for conduit armoured cable connections. Reducing washers shall not be allowed.

### Vacuum clean interior of outlet boxes before the installation of wiring devices.

### Identify systems for outlet boxes as required.

## Commissioning

### For all commissioning activities on systems where components of this Specification are integral to functionality, refer to Section 01810 – Equipment Testing and Facility Commissioning. All inspection and testing activities shall be completed in accordance with the documentation required as part of the commissioning plan that shall be provided to the Consultant and get approved prior to start of commissioning activities.

**END OF SECTION**