

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 - Common Work Results for Electrical.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CAN/CSA C22.2 No. 48-M90 - Nonmetallic Sheathed Cable
 - .2 CSA C22.2 No. 51 09 - Armoured Cables
 - .3 CSA C22.2 No. 52 96 (R2005) - Underground Service Entrance Cables
 - .4 CSA C22.2 No. 75 08 - Thermoplastic-Insulated Wire and Cables
 - .5 CAN/CSA C22.2 No 131 07 - Type TECK 90 Cable
 - .6 CSA C22.2 No. 0.3-09 - Test Methods for Electrical Wires and Cables
 - .7 CSA C22.2 No. 38-05 - Thermoset-Insulated Wires and Cables
 - .8 CSA C22.2 No. 188-04 - Splicing Wire Connectors
 - .9 CSA C22.2 No. 198.2-05 - Sealed Wire Connector Systems
 - .10 CSA C22.2 No. 38-05 - Thermoset
 - .11 CSA C22.2 No. 188-04 – Splicing
- .2 American National Standards Institute/Insulated Cable Engineers Association (ANSI/ICEA)
 - .1 ICEA S-70-547 - Weather-Resistant Polyolefin-Covered Wire and Cable
 - .2 ANSI/ICEA S-97-682 - Utility Shielded Power Cables Rated 5 through 46 kV
 - .3 ICEA S-19-81 - Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy
 - .4 ANSI/ICEA S-97-682 - Utility Shielded Power Cables Rated 5 Through 46 kV
- .3 American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA)
 - .1 ANSI/NEMA WC 70-2009/ICEA S-95-658-2009 - Power Cables Rated 2000 V or Less for the Distribution of Electrical Energy
 - .2 ANSI/NEMA WC 71-1999/ICEA S-96-659-199 - Standard for Non-Shielded Cables Rated 2001-5000 Volts for Use in the Distribution of Electric Energy

1.3 PRODUCT DATA

- .1 Provide product data in accordance with Section 01 00 01 - General Requirements.

Part 2 Products

2.1 BUILDING WIRES

- .1 Conductors: solid for No. 10 AWG and smaller, stranded for No. 10 AWG and larger. Minimum size: 12 AWG.
- .2 Copper conductors: size as indicated, with 600V insulation of cross-linked thermosetting polyethylene material rated RW90 XLPE.

2.2 TECK 90 CABLE

- .1 Cable: in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Conductors:
 - .1 Grounding conductor: copper.
 - .2 Circuit conductors: copper, size as indicated.
- .3 Insulation:
 - .1 Cross-linked polyethylene XLPE.
 - .2 Rating: 600V.
- .4 Inner jacket: polyvinyl chloride.
- .5 Armour: interlocking galvanized steel.
- .6 Overall covering: thermoplastic polyvinyl chloride, compliant to applicable Building Code classification for this project.
- .7 Fastenings:
 - .1 One hole steel or aluminum 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. Space channel as required by CEC.
 - .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 used only for light fixture drops.
- .3 Armour: interlocking type fabricated from galvanized steel strip.

.4 Type: ACWU90 flame retardant jacket over thermoplastic armour and compliant to applicable Building Code classification for this project.

.5 Connectors: anti short connectors.

2.4 MINERAL INSULATED (MI) CABLES:

.1 Conductors -Solid copper size as indicated.

.2 Insulation -Magnesium oxide.

.3 Configuration -Single, two, three or four conductor as indicated.

.4 Voltage Rating -600V.

.5 Outer Jacket -Copper.

.6 Standard - ULC S139

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 Consultant 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. Wiring from below and horizontal wiring in walls is to be avoided. If wiring from below and/or horizontal wiring in walls it is to be reviewed on site with the consultant for approval prior to installation.

- .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:
 - .1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.
 - .2 In wireways and auxiliary gutters in accordance with Section 26 05 37.

3.4 INSTALLATION OF TECK90 CABLE (0 -1000 V)

- .1 Group cables wherever possible on channels.
- .2 Install cable exposed, securely supported by straps or hangers.
- .3 Provide protection for exposed cables where subject to damage.
- .4 Support horizontal runs on cable tray or channels complete with spacers and clamps.
- .5 Support vertical runs on channels complete with spacers and clamps.
- .6 Support cables minimum one diameter apart. Maintain equal spacing across supports.
- .7 Install single conductor cables in 3 phase circuits as follows.
 - .1 Arrange cables in delta formation supported on hardwood spacer blocks providing one cable diameter space between cables. Install spacers at 900 mm centers around horizontal and vertical runs of cable.
 - .2 Install non magnetic and insulating plates at cable termination points. Fit connectors at supply points with grounding style bushing and No. 6 AWG copper conductor to connect supply end of cable sheath to ground. Ground the cable sheath at supply end only.
 - .3 Install non metallic plate at load end of cable to terminate cable.
 - .4 Provide non magnetic plates, minimum 12 mm fiberboard, securely bolted over openings cut in enclosure.

3.5 INSTALLATION OF ARMoured CABLES

- .1 Group cables wherever possible on channels.

END OF SECTION