Part 1 General

1.1 REFERENCES

.1 CSA C22.2 No .0.3, Test Methods for Electrical Wires and Cables.

.2 CSA C22.2 No. 38 Thermoset Insulated Wires and Cables.

.3 CSA C22.2 No. 51 Armoured Cables.

Part 2 Products

2.1 BUILDING WIRES

.1 Wires and cables manufactured to CSA 22.2 No. 38.

.2 Conductors: stranded for 10 AWG and larger. Size as indicated. Minimum size: 12 AWG.

.3 Copper conductors: size as indicated, with minimum 600 V insulation of cross-linked polyethylene (XLPE) material, rated RW90. For burial installations use RWU90.

2.2 AC90 (BX, COPPER)

.1 Cable to C22.22 No.51

.2 Conductors: Solid copper #12 AWG, stranded copper #10 AWG and larger, minimum size #12 AWG.

.3 Insulation: 60V, cross-linked polyethylene (XLPE), 90°C.

.4 Configuration: Multi-conductor, complete with a separate bare copper conductor.

.5 Armor: Bare interlocked aluminum.

2.3 CONTROL CABLES

.1 Type LVT: soft annealed copper conductors, sized as indicated, with thermoplastic insulation, outer covering of thermoplastic jacket, and armour of closely wound aluminum wire.

Part 3 Execution

3.1 GENERAL

.1 To Minimize Voltage Drop

.1 All branch circuit wiring and conduit shall be installed to minimize voltage drop. Install additional conduit runs as required to take the most direct and shortest route to outlets, light fixtures, etc.

3.2 INSTALLATION OF BUILDING WIRES

.1 Install wiring as follows:

.1 In conduit systems.

3.3 INSTALLATION OF ARMOURED CABLES

.1 Type AC90 armoured cable (BX) shall be used for connections from conduit systems to recessed luminaires in accessible ceilings. Cable to be of sufficient length to allow the lighting fixture to be relocated to any location within a 6' (1.8M) radius. Cable shall be clamped before entering the lighting fixture and shall be clipped before entering the conduit system junction box.

.2 Type AC90 armoured cable (BX) shall be used for connections from conduit systems to wiring devices in steel stud partitions and for interconnection of wiring devices within steel stud partitions, cable to be clipped before entering junction or outlet boxes. Cable to be clamped within partitioning with steel galvanized tie-wire.

3.4 INSTALLATION OF CONTROL CABLES

.1 Install control cables in conduit.

.2 Ground control cable shield.

3.5 INSTALLATION OF FIRE ALARM CABLES

.1 Do not install cables that are part of the fire alarm system in PVC conduit. This includes but not limited to the following: wiring to fire alarm devices, annunciators, communications wiring, power supply wiring, etc.

3.6 TERMINATIONS

.1 Terminate wires and cables with appropriate connectors in an approved manner.

.2 Compression adapters intended to terminate larger feeders on small lugs are not acceptable. All lugs, including breaker lugs, are to be sized to accommodate the cable being terminated.

3.7 IDENTIFICATION

.1 Wire in conduit #2 AWG and smaller shall have solid coloured insulation, colour coded as listed below.

.2 Wire in conduit 1/0 AWG and larger and single conductor cables for normal power feeders shall be identified at each outlet box and termination with a 150 mm band of coloured vinyl tape of the appropriate colour. Emergency power feeders shall be provided with an additional 75 mm band of red vinyl tape installed adjacent to the 150 mm band of the coloured phase identification tape, as listed below. Neutral and ground conductors shall be identified. Paint or other means of colouring the insulation shall not be used.

.3 Colour code wire in conduit and single conductor cables as follows:

Phase A - red
Phase B - black
Phase C - blue
Neutral - white
Ground - green

.4 Maintain phase sequence and colour coding throughout project.

.5 Use colour coded wires in communication cables, matched throughout system.

.6 Identify control conductors in motor control equipment, contactors, fire alarm panels, etc. with mylar/cloth wire markers.

END OF SECTION