

**Part 1 General**

**1.1 NOT USED**

- .1 Not used.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Conductors: copper, sized as indicated, with 600 volt insulation rated at 90°C. The conductor shall have PVC insulation with an overall nylon jacket (T90 or THHN), or cross-linked polyethylene insulation (R90 XLPE or RW90 XLPE).
- .2 Conductor shall be stranded for sizes #10 AWG and larger.
- .3 Conductors: to CSA C22.2 38.
- .4 Armoured cable: Copper conductors, interlocking armour fabricated galvanized steel strip.
- .5 Teck cable: copper conductors sized as indicated with 600 volt insulation rated at 90°C. Chemically cross-linked thermosetting polyethylene insulation, inner jacket of polyvinyl chloride material, interlocking aluminium armour, polyvinyl chloride overall coating (FT-4 flame test rated).

**Part 3 Execution**

**3.1 INSTALLATION – GENERAL**

- .1 In conduit systems in accordance with Section 26 05 34.
- .2 #12 AWG shall be the minimum wire size used for branch circuits. All building conductors shall be sized to allow for a maximum of 3% voltage drop.
- .3 Conductor phasing for three phase electrical distribution equipment shall be made phase A, B, C, from left to right when facing equipment. The A, B, C, phasing shall be continuous from the incoming utility supply, throughout the electrical system, including panels, motor control centres, transformers, etc. and shall continue through to all the branch circuitry to the final connection of the outlet or device. Phase colour coding shall be red, black and blue for phases A, B and C respectively (X, Y, Z sequence). Continuous colour coding of insulation is required for conductors sized #2 AWG and smaller. Colour code phase taping for conductors sized #2 AWG and smaller will not be allowed.
- .4 Neutral conductors shall be white, ground conductors green, and isolated ground conductors green with yellow striped identification.
- .5 Conductors drawn into conduit shall not be pulled more than 30 metres nor more than three 90° bends without pullboxes.
- .6 Lubricant for pulling conductors shall be wax base insoluble in water and non-hardening.

- .7 Conductor length for parallel feeders shall be identical.
- .8 Identify all conductors (including neutral) with "Brady" marker to describe circuit number, wherever they are terminated in a junction box or panelboard.
- .9 Neutral conductors shall not be derated.
- .10 When changing the rotation of three phase motors, the change shall be made at the motor splice box.
- .11 Control wiring conductors shall be red in colour (except associated building neutral conductor shall be white in colour).
- .12 Ground conductors shall be green in colour **A separate insulated (green) ground conductor shall be installed in each conduit system.** The conduit system will not constitute an adequate ground.
- .13 Install a separate insulated (green) ground conductor for each motor circuit.
- .14 Install a separate insulated (green ground) conductor for each panelboard feeder.
- .15 Insulation for all conductors installed exterior to the building shall be rated at minus 40 degrees Celsius.
- .16 Circuits sharing a neutral shall be consecutive breakers in the panel (i.e. 1, 3, 5 or 8, 10, 12).
- .17 Panelboard feeders shall be continuous and free of splices between the overcurrent protection device for the panelboards, and the panelboard.
- .18 Refer to Section 26 05 34 regarding installation of armoured cable.
- .19 Branch wiring for emergency power supply branch circuits shall be banded with yellow identification.

**END OF SECTION 26 05 21**