

## PART 1 - GENERAL

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| <u>1.1 LOCATION OF CONDUIT</u> | .1 | Drawings do not show all conduits. Those shown are in diagrammatic form only.                    |
| <u>1.2 RELATED WORK</u>        | .1 | Fastenings and Supports: Section 26 05 29                                                        |
|                                | .2 | Outlet Boxes, Conduit Boxes and Fittings: Section 26 05 32                                       |
|                                | .3 | Direct Buried Underground Cable Ducts: Section 33 65 76                                          |
| <u>1.3 REFERENCES</u>          | .1 | CAN/CSA C22.2 No. 18-04, Outlet Boxes, Conduit Boxes and Fittings and Associated Hardware.       |
|                                | .2 | CSA C22.2 No.41.2-2008, Electrical Rigid Metal Conduit, Aluminum, Red Brass and Stainless Steel. |
|                                | .3 | CSA C22.2 No. 56-04, Flexible Metal Conduit and Liquid Tight Flexible Metal Conduit.             |
|                                | .4 | CSA C22.2 No. 83-M1985(R2013), Electrical Metallic Tubing.                                       |
|                                | .5 | CSA C22.2 No. 211.2-06(R2011), Rigid PVC (Unplasticized) Conduit.                                |

## PART 2 - PRODUCTS

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| <u>2.1 CONDUITS</u> | .1 | Rigid PVC conduit for power, control, instrumentation and general service wiring in slab or under slab. Conduit stub ups shall be rigid aluminum conduit, with heat shrink sleeve. ENT is not permitted. Do not allow any part of aluminium conduit to be exposed to concrete. |
|                     | .2 | EMT to be used throughout interior spaces                                                                                                                                                                                                                                      |
|                     | .3 | Unless otherwise noted, RPVC for exterior installations.                                                                                                                                                                                                                       |
|                     | .4 | Rigid PVC conduit for all direct buried underground services. Refer to Section 33 65 76.                                                                                                                                                                                       |
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| 2.1 CONDUITS<br>(Cont'd)                       | .5 | Liquid tight, flexible metallic conduit for connection to vibrating equipment (motors, valves, generators, transformers) and all instruments.                                                                                                                                                                                         |
|                                                | .6 | Minimum conduit size for all areas: 21mm.                                                                                                                                                                                                                                                                                             |
| 2.2 CONDUIT<br>FASTENINGS                      | .1 | One hole conduit straps to secure surface conduits 50 mm and smaller. Two hole conduit straps for conduits larger than 50 mm.                                                                                                                                                                                                         |
|                                                | .2 | Pipe clamps to secure conduits to support channels.                                                                                                                                                                                                                                                                                   |
|                                                | .3 | Refer to specification Section 26 05 29 for suspended and surface support systems for conduits.                                                                                                                                                                                                                                       |
|                                                | .4 | Finishes for conduit fastenings as specified for conduit.<br>.1 In areas where PVC conduit is specified, use PVC coated steel conduit straps.<br>.2 In areas where EMT is permitted, use zinc plated steel materials.<br>.3 In areas where rigid aluminum conduit is specified, use PVC coated steel or cast aluminum conduit straps. |
|                                                | .5 | Provide isolators between dis-similar metals as required.                                                                                                                                                                                                                                                                             |
| 2.3 CONDUIT<br>FITTINGS                        | .1 | Fittings: manufactured for use with conduit specified. Coating: same as conduit.                                                                                                                                                                                                                                                      |
|                                                | .2 | Factory "ells" where 90° bends are required for 25 mm and larger conduits.                                                                                                                                                                                                                                                            |
|                                                | .3 | Connectors and couplings for EMT: steel set-screws.                                                                                                                                                                                                                                                                                   |
| 2.4 EXPANSION<br>FITTINGS FOR RIGID<br>CONDUIT | .1 | Weatherproof expansion fittings with internal bonding assembly suitable for linear expansion as required.                                                                                                                                                                                                                             |
|                                                | .2 | Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.                                                                                                                                                                                                      |
|                                                | .3 | Weatherproof expansion fittings for linear expansion at entry to building as required.                                                                                                                                                                                                                                                |
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- 2.4 EXPANSION FITTINGS FOR RIGID CONDUIT  
(Cont'd)
- .4 Provide expansion fittings at exit point (above-ground) of all underground services, and where indicated on the drawings.
  - .5 Where rigid PVC conduit is used indoors or above ground, provide expansion fittings spaced in accordance with manufacturers' instructions and the Canadian Electrical Code.

- 2.5 FISH CORD
- .1 Polypropylene.

### PART 3 - EXECUTION

- 3.1 CONDUIT INSTALLATION
- .1 General:
    - .1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
    - .2 Unless otherwise indicated, conduits shall be surface mounted. In finished areas, conduits shall be concealed. Refer to specification Section 26 05 32 for areas where recessed outlet boxes are required.
    - .3 Use liquid tight flexible metal conduit for connection to vibrating equipment and all instruments, unless TECK cable is used.
    - .4 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
    - .5 Mechanically bend steel conduit over 19 mm dia.
    - .6 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
    - .7 Install polypropylene fish cord in all empty conduits.
    - .8 Where conduits become blocked, remove and replace blocked section. Do not use liquids to clean out conduits.
    - .9 Dry conduits out before installing wire.
    - .10 Minimum conduit size: 21 mm diameter.
    - .11 Provide minimum 300 mm spacing between instrumentation/control conduits and 600V power conduits. Where possible, instrumentation control conduits to cross at right angles to 600V power conduits.
  - .2 Surface conduits:
    - .1 Run parallel or perpendicular to building lines.
    - .2 Group conduits wherever possible on suspended or surface channels.
    - .3 Do not pass conduits through structural members except as indicated.
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- 3.1 CONDUIT  
INSTALLATION  
(Cont'd)
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- .2 Surface conduits:(Cont'd)
- .4 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum 25 mm at crossovers.
- .5 Fasten to flutes of metal roof deck when practical.
- .6 Do not run conduits where they might obstruct lifting devices such as monorails.
- .3 Concealed conduits:
- .1 Do not install horizontal runs in masonry walls.
- .2 Do not install conduits in concrete toppings.
- .3 Run parallel or perpendicular to building lines.
- .4 Conduits underground: slope conduits to provide drainage.
- .5 Supply and install pull string in each spare conduit. Cap and seal conduit at each end.