

PART 1 - GENERAL

- 1.1 REFERENCES .1 Canadian Standards Association (CSA International)
- .1 CAN/CSA C22.2 No. 18-98(R2003), Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware, A National Standard of Canada.
  - .2 CSA C22.2 No. 45-M1981(R2003), Rigid Metal Conduit.
  - .3 CSA C22.2 No. 56-04, Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
  - .4 CSA C22.2 No. 83-M1985(R2003), Electrical Metallic Tubing.
  - .5 CSA C22.2 No. 211.2-M1984(R2003), Rigid PVC (Unplasticized) Conduit.
- 1.2 WASTE MANAGEMENT AND DISPOSAL .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
  - .3 Ensure emptied containers are sealed and stored safely for disposal away from children.

PART 2 - PRODUCTS

- 2.1 CONDUITS .1 Rigid metal conduit: to CSA C22.2 No. 45, galvanized steel threaded.
- .2 Electrical metallic tubing (EMT): to CSA C22.2 No. 83, with couplings.
  - .3 Rigid pvc conduit: to CSA C22.2 No. 211.2.
  - .4 Flexible metal conduit: to CSA C22.2 No. 56, liquid-tight flexible metal.

- 2.2 CONDUIT FASTENINGS
- .1 One hole steel straps to secure surface conduits 53 mm and smaller.
    - .1 Two hole steel straps for conduits larger than 53 mm.
  - .2 Beam clamps to secure conduits to exposed steel work.
  - .3 Channel type supports for two or more conduits at 1.5 m on centre.
  - .4 Threaded rods, 6 mm diameter, to support suspended channels.
- 2.3 CONDUIT FITTINGS
- .1 Fittings: to CAN/CSA C22.2 No. 18, manufactured for use with conduit specified. Coating: same as conduit.
  - .2 Ensure factory "ells" where 90 degrees bends for 27 mm and larger conduits.
  - .3 Set-screw steel connectors and couplings for EMT.
- 2.4 FISH CORD
- .1 Polypropylene.
- PART 3 - EXECUTION
- 3.1 MANUFACTURER'S INSTRUCTIONS
- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 3.2 INSTALLATION
- .1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

3.2 INSTALLATION  
(Cont'd)

- .2 Conceal conduits except in mechanical and electrical service rooms, areas with exposed ceilings, or otherwise as noted.
- .3 Use rigid galvanized steel threaded conduit where exposed to mechanical injury and as noted.
- .4 Use electrical metallic tubing (EMT) except in cast concrete and not subject to mechanical injury.
- .5 Use rigid pvc conduit underground.
- .6 Use flexible metal conduit for connection to motors in dry areas.
- .7 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.
- .8 Minimum conduit size for lighting and power circuits: 21 mm.
- .9 Install EMT conduit from branch circuit panel to junction box in sub-floor immediately below operations room.
  - .1 Run flexible conduit from junction box to receptacle outlet boxes in sub-floor.
- .10 Bend conduit cold:
  - .1 Replace conduit if kinked or flattened more than 1/10th of its original diameter.
- .11 Mechanically bend steel conduit over 21 mm diameter.
- .12 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
- .13 Install fish cord in empty conduits.
- .14 Run 2 27 mm spare conduits up to ceiling space and from each flush panel.
  - .1 Terminate these conduits in 152 x 152 x 102 mm junction boxes in ceiling space.
- .15 Remove and replace blocked conduit sections.
  - .1 Do not use liquids to clean out conduits.

- 3.2 INSTALLATION  
(Cont'd) .16 Dry conduits out before installing wire.
- 3.3 SURFACE  
CONDUITS .1 Run parallel or perpendicular to building lines.
- .2 Run conduits in flanged portion of structural steel.
- .3 Group conduits wherever possible on suspended or surface channels.
- .4 Do not pass conduits through structural members except as indicated.
- .5 Do not locate conduits less than 75 mm parallel to hot water lines with minimum of 25 mm at crossovers.
- 3.4 CONCEALED  
CONDUITS .1 Run parallel or perpendicular to building lines.
- .2 Do not install conduits in terrazzo or concrete toppings.
- 3.5 CONDUITS IN  
CAST-IN-PLACE  
CONCRETE .1 Locate to suit reinforcing steel.  
.1 Install in centre one third of slab.
- .2 Protect conduits from damage where they stub out of concrete.
- .3 Install sleeves where conduits pass through slab or wall.
- .4 Provide oversized sleeve for conduits passing through waterproof membrane, before membrane is installed.  
.1 Use cold mastic between sleeve and conduit.
- .5 Conduits in slabs: minimum slab thickness 4 times conduit diameter.
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