

1. GENERAL

1.1 Work Included

- .1 Provide a complete system of conduit and fittings for installation of wiring.

2. PRODUCTS

2.1 Rigid Steel Conduit

- .1 Galvanized with threaded joints and connections.
- .2 Connections in dry locations: steel or malleable iron locknuts inside and outside enclosures. Insulated bushings Thomas & Betts Series 222 or approved alternate.
- .3 Connectors subjected to moisture interior and exterior: liquid and dust tight with insulated throat, Thomas & Betts "Bullet Hub" 370 Series or approved alternate.
- .4 Fittings: cast metal "Condulet" as manufactured by Crouse-Hinds Canada Ltd. including gasketted covers in damp locations.
- .5 Expansion joints: cast metal Crouse-Hinds type XJ or approved alternate.

2.2 Flexible Conduit

- .1 Connectors: slip-proof, insulated throat or non-metallic bushings, steel, Thomas & Betts Ltd. "Tite-Bite", Series 300.

2.3 Liquid-Tight Flexible Conduit

- .1 Conduit: flexible metal conduit with liquid-tight PVC jacket. Industrial Wire & Cable "Liquiseal".
- .2 Connectors: captive sealing jacket and ground cone insulated throat, steel (Thomas & Betts Ltd. "Super-Tight", Series 6000).

3. EXECUTION

3.1 Rigid Steel Conduit

- .1 Use as raceways for following applications:
 - .1 In all areas exposed to weather.
 - .2 In all areas where Teck cable is not used.
 - .3 For all fire alarm circuits and related wiring.

.4 For all lighting and receptacle power distribution.

.5 For all computer communication wiring.

3.2 Flexible Conduit

.1 Use as raceways for following applications:

.1 Connections to f.h.p. motors in dry locations.

.2 Flexible connections to luminaires.

.2 Provide a separate insulated ground wire in all flexible conduits.

3.3 Liquid-Tight Flexible Conduit

.1 Use as raceways for following applications:

.1 At all motors, pipe mounted control devices, and other devices subject to movement or water.

.2 At all motors provide a short length before connecting to the motor terminal box. Minimum length shall be 450 mm plus 4 times the conduit diameter.

.3 Provide a separate ground wire within flexible conduit, bonded to motor frames and system ground.

3.4 Workmanship

.1 Install all conduit and wiring concealed, unless otherwise shown on the drawings. Do not recess conduit in columns, except as noted, without permission.

.2 Where conduit is run exposed, run parallel to building lines. Where conduits are grouped (two or more), space evenly, make bends concentric and mount on Unistrut racks.

.3 Lay out conduit to avoid interference with other work. Maintain a minimum clearance of 150 mm from steam or hot water piping, vents, etc.

.4 Organize conduit in slabs to minimize crossovers.

.5 Where conduits or ducts enter or exit concrete structures below grade provide 16 mm x 1500 mm steel reinforcing dowels to prevent shearing. Extend dowel 1000 mm beyond concrete and band conduit to dowel. The first 3 meter length of conduit extending from the structure to be Polykin wrapped rigid steel.

.6 Where steel conduit is required to be bent, do not heat, and do not bend conduit in such a way as to reduce pipe cross section area at any point. Radii of bends shall be as per Canadian Electrical Code.

- .7 For all runs of conduits, do not include more than equivalent of 4 - quarter bends. Provide conduit fittings, pullboxes and junction boxes where necessary. Pulling elbows shall not be used except by special permission.
- .8 Where possible, install conduits so that they are not trapped, cap turned up conduits to prevent the entrance of dirt or moisture during construction. Swab out conduit and thoroughly clean internally before wires and cables are pulled.
- .9 Take extreme care in reaming ends of all conduit to ensure a smooth interior finish that will not damage the insulation of the wires.
- .10 Use insulated non-metallic bushings on all conduit terminations.
- .11 Ensure electrical continuity in all conduit systems.
- .12 All conduit shown exposed in finished areas is to be free of unnecessary labels and trade marks.
- .13 Install a 90 lb. test line in all conduits left empty by this contractor including those which others will pull cables, wires, etc.
- .14 Conduits and ducts crossing building expansion joints shall have conduit expansion fittings to suit the type of conduit used, and shall be Crouse-Hinds, Sceptre, or approved fitting.
- .15 Seal conduits with duct seal where conduits are run between heated and unheated areas. Where conduits, cables, or cable trays pierce fire separations, seal openings with Dow Corning 3-6548 sealant or approved equal.
- .16 Where conduits pass through walls, they shall be grouped and installed through openings. After all conduits shown on the drawings are installed, wall openings shall be closed with material compatible with the wall construction. Review size and quantity of conduit sleeves with the Contract Administrator.
- .17 Where drawings show conduit designations, these conduits shall be identified at each point of termination with Thomas & Betts "Ty-Rap" No. TY532M labels.
- .18 Where conduit finish is damaged, repair or replace.
- .19 Use "Condulet" fittings for power and telephone type conduit terminations in lieu of boxes where support is not provided.
- .20 All branch circuit wiring, home-runs, communication and data to be minimum 20 mm diameter unless otherwise stated.
- .21 Provide necessary flashing and pitch pockets, making watertight joints where conduits pass through roof or watertight membranes.
- .22 Where panelboard branch circuit conduits are amalgamated, size shall not exceed 25 mm diameter.

END OF SECTION