## 1. General Information

### 1.1 Documents/samples to be submitted

.1 Submit the documents and samples required in accordance with the section 01 33 00 - Documents and samples to be submitted.

## 2. Products

### 2.1 Conduits

.1 Rigid metal conduit: in accordance with CSA C22.2 number 45 standard, galvanized steel or aluminum, to be screwed.

.2 Electrical metal tubing (EMT): in accordance with the CSA C22.2 number 83 standard.

.3 Rigid PVC conduits: in accordance with the CSA C22.2 number 211.2 standard.

.4 Flexible metal conduits: in accordance with the standard CSA C22.2 number 56, liquid-tight flexible metal.

### 2.2 Conduit fasteners

.1 1-hole steel flanges for attaching exposed conduits with a nominal diameter of 50 mm or less.

.1 2-hole steel flanges to attach conduits with a nominal diameter greater than 50 mm.

.2 Beam clamps for securing conduits to exposed steelwork.

.3 U clams to support several ducts, place at 1.5 m from center to center.

.4 Threaded rods 6 mm in diameter to retain the suspension brackets.

### 2.3 Conduit connectors

.1 Connectors: in accordance with the CAN/CSA C22.2 number 18 standard, manufactured specifically for the conduits indicated. Coating: same as used for the conduits.

.2 Prefabricated L-fittings, to be installed where 90-degree bends are required on 25 mm and larger conduits.

.3 Watertight compression fittings and couplings for metal electrical tubing (type 'Ring-tight') for the mechanical room.

.4 Conduit terminations using locknuts and insulated sleeves.

### 2.4 Pull wires

.1 Made from polypropylene.

## 3. Execution

### 3.1 Installation

.1 Place exposed conduits so as not to reduce the free height of the room and use as little space as possible.

.2 Conceal conduits as much as possible, except those installed in mechanical and electrical installations.

.3 Unless otherwise specified, use rigid conduits to screw in galvanized steel for above ground exterior installation.

.4 Use EMT metallic electrical tubing when the conduits are embedded in concrete structures where conduits are more than 2.4 m above the ground and are not likely to be damaged.

.5 Use rigid PVC conduits for underground installations.

.6 Use flexible metal conduits for engine connections in dry rooms, incandescent light fixture connections, recessed and without a pre-filtered outlet box for surface-mounted or recessed fluorescent fixture connections.

.7 Use flexible and liquid-tight metal conduits for engine connections or vibrating equipment in damp or wet locations, or in corrosive environments.

.8 Use conduits of at least 19 mm for lighting and power supply circuits.

.9 Bend the cold conduits.

.1 Replace conduits that have decreased more than 1/10 of their original diameter due to crushing or deformation.

.10 Mechanically bend steel conduits larger than 19 mm in diameter.

.11 Rigid pipe threading, performed on site, must be long enough to allow for tight joints.

.12 Install a pull wire in the empty conduits.

.13 From each installed flush panel, raise up to the ceiling void, two 25 mm spare

conduits.

.1 The conduits must end in 152 mm x 152 mm x 102 mm junction boxes located in the ceiling, mounted on the slab.

.14 Remove and replace clogged conduit sections.

.1 It's forbidden to use liquids to unclog the conduits.

.15 Dry the conduits before wiring.

.16 Provide a green wire in each conduit.

**3.2 Visible conduits**

.1 Install the conduits parallel or perpendicular to the building layout lines.

.2 Behind the infrared or gas radiators, install the conduits with a clearance of 1.5 m.

.3 Pass the conduits through the steel frame elements if necessary.

.4 Where possible, group conduits in U-shaped brackets.

.5 Unless otherwise specified, conduits must not go through frame elements.

3.3 Where conduits are placed parallel to the steam or hot water pipes, provide a lateral clearance of at least 75 mm; also provide a clearance of at least 25 mm in the case of junctions.

3.4 Concealed conduits

.1 Install the conduits parallel or perpendicular to the building layout lines.

.2 It's prohibited to install horizontal conduits in masonry walls.

.3 It's forbidden to cover conduits in terrazzo structures or in concrete coverings.

**3.5 Conduits covered in cast-in-place concrete structures**

.1 Take into account the arrangement of the concrete reinforcing steel bars.

.1 Install the conduit in the central third of the slabs.

.2 Protect the conduits at their point of exit from a concrete structure.

.3 Install sleeves where the conduits pass through a slab or wall.

.4 Before covering a concrete structure with a waterproof membrane, install oversized sleeves where the conduits must pass through.

.1 Apply sealant (cold) between sleeves and conduits.

.5 The thickness of the slabs in which conduits are embedded must correspond to at least four times the diameter of the latter.

.6 Completely cover the conduits under a layer of concrete at least 25 mm thick.

.7 Arrange the conduits in the slabs so that there's as little crossover as possible.

**3.6 Conduits embedded in slabs on the floor in cast-in-place concrete**

.1 Pass the conduits 25 mm and over, under the slabs and cover them in a concrete casing 75 mm thick.

.1 Place a layer of 50 mm thick sand on the concrete shaft under the floor slab.

**3.7 Underground conduits**

.1 Install conduits on an incline to ensure water drains.

.2 Waterproof seals (except PVC pipe joints) with a thick coat of bituminous paint.

**3.8 Cleaning**

.1 Perform cleaning in accordance with section 01 74 11 - Cleaning.

.2 Once the installation and performance monitoring work is complete, remove excess materials and equipment, waste, tools and equipment from the construction site.

**END OF SECTION**