

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 22 05 00 - Common Work Results for Plumbing.
- .2 Section 07 84 00 - Firestopping.

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM).
 - .1 ASTM D1785, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - .2 ASTM D2235, Specification for Solvent Cement for Acrylonitrille-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
 - .3 ASTM D2564, Specification for Solvent Cements for Poly(Vinyl-Chloride) (PVC) Plastic Pipe and Fittings.
 - .4 ASTM F439, Standard Specification for Chlorinated Poly(Vinyl-Chloride) (CPVC) Plastic Pipe Fitting, Schedule 80.
 - .5 ASTM F441, Standard Specification for Chlorinated Poly(Vinyl-Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80.
- .2 Canadian Standards Association (CSA International).
 - .1 CSA B137.3, Rigid Polyvinyl Chloride (PVC) Pipe for Pressure Applications.
 - .2 CAN/CSA B181.1, ABS Drain, Waste, and Vent Pipe and Pipe Fittings.
 - .3 CAN/CSA B181.2, PVC Drain, Waste, and Vent Pipe and Pipe Fittings.
 - .4 CAN/CSA B182.1, Plastic Drain and Sewer Pipe and Pipe Fittings.
 - .5 CAN/CSA-B182.2, PVC Sewer Pipe and Fittings (PSM Type).
- .3 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC S102.2, Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies
- .4 National Sanitation Foundation (NSF).
 - .1 NFS/ANSI 14, Plastics Piping System Components and Related Materials.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit product data and maintenance sheets for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Maintenance Sheets:

.1 Maintenance sheets must include the following:

- .1 Description of plumbing specialties and accessories, giving manufacturers name, type, model, year, and capacity;
- .2 Details of operation, servicing, and maintenance;
- .3 Recommended spare parts list.

1.5 HEALTH AND SAFETY

- .1 Take necessary measures to ensure health and safety on construction site in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.6 WASTE MANAGEMENT AND REMOVAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

1.7 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products.

Part 2 Products

2.1 PIPES AND CONNECTIONS

- .1 Subterranean:
 - .1 Sanitary drain pipes, storm drain pipes and vent pipes, DWV type, in accordance with one of the following Standards:
 - .1 CAN/CSA-B181.2 (for PVC DWV pipes, NPS 2 to NPS 24);
 - .2 CAN/CSA-B182.1 (for plastic DWV pipes);
 - .3 CAN/CSA-B182.2 (for PVC DWV pipes, type DR28 for NPS 4 to NPS 6, and type DR35 for NPS 8 to NPS 42).

2.2 JOINTS

- .1 Solvent weld for PVC: to ASTM D2564.
- .2 Acceptable products:
 - .1 IPEX: ABS-DWV, PVC-DWV;

- .2 Replacement materials or products: approved by addendum according to Instructions to bidders.

2.3 FIRESTOP SYSTEM

- .1 Firestop products and units complying with ULC, with a fire rating of 2 hours.
- .2 Acceptable Products:
 - .1 3M Canada;
 - .2 Replacement materials or products: approved by addendum according to Instructions to bidders.

Part 3 Execution

3.1 INSTALLATION

- .1 Unless otherwise indicated, install the piping and elements in accordance with the requirements of the CCQ, Chapter 1, Chapter 3 of National Plumbing Code, and of the local competent authorities.
- .2 Install the piping to be buried on a clean, washed sand bed, of a 150 mm (6 in) thickness, wrought in a way that marries the shape of fittings. Respect the slope, the lines, and the levels indicated. Backfill with washed-out sand.
- .3 Install the above-ground piping parallel to the walls and ceilings and nearby, to reduce as less as possible the effective space of rooms. Respect the slope and levels indicated.
- .4 Apply a primer prior to solvent on male and female pipe joints.
- .5 Install a plastic drain from all condensate pans (coils, ducts, humidifiers, etc.) and fresh air louvres to nearest floor drain.
- .6 Pipes connected with socket joints (below ground NPS 4 and larger).
 - .1 Contractor must install the pipes starting with the low point of the network and continuing up the slope. The female pipe ends should be installed facing upstream. Contractor must ensure that earth or other debris does not get introduced into the pipes during installation. All conduits must be installed in a straight line. Any pipes incorrectly aligned or showing signs of sagging or settling after installation must be removed and replaced on a new seat.
 - .2 The interior pipe diameter must be verified by the Departmental Representative. Any deformation exceeding 7.5% of the interior diameter will lead to the pipe in question being refused and its replacement by the Contractor will be required.

3.2 RESTRICTIONS

- .1 Restrictions of use according to the NPC for incombustible buildings:

Product	General Usage	Air Plenum	Vertical Service Shaft	Below Ground Installion	Within Wall Construction Void	Within Concrete Slab
System 15 DWV	N	N	N	P	N	P

P = Permitted

N = Non permitted

3.3 FIRESTOPPING

- .1 Install fire stops on pipe where it goes through a rated fire separation.
- .2 Pipe must be installed perpendicularly when crossing a fire rated partition.
- .3 Install according to manufacturer's recommendations and in accordance with Section 07 84 00 – Firestopping.

3.4 TESTS

- .1 Proceed with tests in accordance with the requirements of the National Plumbing Code and of the local competent authorities.
- .2 Proceed with pressure testing of pipe before backfilling.
- .3 Perform hydrostatic tests on the pipework to ensure that they are not obstructed and that the slope is appropriate.

3.5 PERFORMANCE VERIFICATION

- .1 Cleanouts:
- .1 Ensure accessibility and that access doors are correctly located.
- .2 Verify that cleanout rods can probe as far as the next cleanout, at least.
- .2 Test to ensure traps are fully and permanently primed.
- .3 Storm Water Drainage:
- .1 Verify domes are secure.
- .2 Ensure weirs are correctly sized and installed correctly.
- .3 Verify provisions for movement of roof system.
- .4 Ensure that fixtures are properly anchored, connected to system, and effectively vented.

END OF SECTION