

Part 1

GENERAL

1.1 SUMMARY

- .1 Section Includes:
 - .1 Materials and installation for plumbing specialties and accessories.

1.2 RELATED SECTIONS

- .1 Division 01.

1.3 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A126, Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 - .2 ASTM B62, Specification for Composition Bronze or Ounce Metal Castings.
- .2 American Water Works Association (AWWA)
 - .1 AWWA C700, Cold Water Meters-Displacement Type, Bronze Main Case.
 - .2 AWWA C701, Cold Water Meters-Turbine Type for Customer Service.
 - .3 AWWA C702, Cold Water Meters-Compound Type.
- .3 American National Standards Institute (ANSI)
 - .1 ANSI Z358.1 Emergency eyewash and shower equipment.
- .4 Canadian Standards Association (CSA)
 - .1 CSA-B64 Series, Backflow Preventers and Vacuum Breakers.
 - .2 CSA-B356, Water Pressure Reducing Valves for Domestic Water Supply Systems.
- .5 Health Canada/Workplace Hazardous Materials Information Systems (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .6 Plumbing and Drainage Institute (PDI)
 - .1 PDI-G101, Testing and Rating Procedure for Grease Interceptors with Appendix of Installation and Maintenance.
 - .2 PDI-WH201, Water Hammer Arresters Standard.

1.4 SUBMITTALS

- .1 Submittals in accordance with Division 01.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet for fixtures and equipment.

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- .2 Indicate dimensions, construction details and materials for specified items.
- .3 Submit WHMIS MSDS in accordance with Section 02 62 00.01 – Hazardous Materials. Indicate VOC's for adhesive and solvents during application and curing.
- .3 Shop Drawings:
 - .1 Submit shop drawings to indicate materials, finishes, method of anchorage, number of anchors, dimensions, construction and assembly details and accessories.
- .4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .5 Instructions: submit manufacturer's installation instructions.
- .6 Closeout submittals: submit maintenance and engineering data for incorporation into manual specified in Division 01. Include:
 - .1 Description of plumbing specialties and accessories, giving manufacturer's name, type, model, year and capacity.
 - .2 Details of operation, servicing and maintenance.
 - .3 Recommended spare parts list.

1.5 QUALITY ASSURANCE

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations.
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building subtrades.
 - .4 Review manufacturer's installation instructions and warranty requirements.
 - .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Division 01.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Division 01.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard packaging materials in appropriate on-site bins for recycling in accordance with Waste Management Plan.
 - .4 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental's Representative.
 - .5 Fold up metal and plastic banding flatten and place in designated area for recycling.

1.7 WARRANTY

- .1 Provide a written guarantee, signed and issued in the name of the Departmental Representative, against defective materials and workmanship for a period of one (1) year from the date of Substantial Completion.

Part 2 PRODUCTS

2.1 BACK FLOW PREVENTERS

- .1 To CSA-B64 Series.
- .2 Application: domestic water service entrances. See drawings.
 - .1 Domestic water:
 - .1 Reduced pressure principle type consisting of a pressure differential relief valve located between two independently operated spring-loaded centre guided check valves.
 - .2 Ductile iron construction with FDA approved fusion epoxy coat inside and out.
 - .3 Compound check.
 - .4 Single access cover.
 - .5 Maximum temperature range: 0.5°C to 60°C.
 - .6 Maximum pressure: 1205 kPa.
 - .7 CSA certified.
 - .3 Application: install on domestic cold water supply.
 - .1 Internal pressure differential relief valve located in a zone between two positive seating check modules with captured springs and silicone seat discs.
 - .2 Seats and discs replaceable in both check modules and the relief valve.
 - .3 Assembly to include two resilient seated isolation valves, four resilient seated test cocks, protective wye strainer with 20 mesh screen, union end connections and an air gap drain fitting.
 - .4 Reduced pressure zone type backflow preventer.

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 data sheet.

3.2 INSTALLATION

- .1 Install in accordance with Canadian Plumbing Code, and local authority having jurisdiction.

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- .2 Install in accordance with manufacturer's instructions and as specified.

3.3 BACK FLOW PREVENTORS

- .1 Install in accordance with CSA-B64 Series, where indicated and elsewhere as required by code.
 - .1 Reduced pressure type where backflow would constitute a health hazard.
- .2 Pipe discharge to terminate over nearest drain and or service sink.

3.4 HOSE BIBBS AND SEDIMENT FAUCETS

- .1 Install at bottom of risers, at low points to drain systems, and as indicated.

3.5 STRAINERS

- .1 Install with sufficient room to remove basket.

3.6 START-UP AND COMMISSIONING

- .1 General:
 - .1 In accordance with Division 01.
- .2 Timing: Start-up only after:
 - .1 Pressure tests have been completed.
 - .2 Disinfection procedures have been completed.
 - .3 Water treatment systems operational.
- .3 Provide continuous supervision during start-up.

3.7 TESTING AND ADJUSTING

- .1 General:
 - .1 In accordance with Division 01.
- .2 Timing:
 - .1 After start-up deficiencies rectified.
 - .2 After certificate of completion has been issued by authority having jurisdiction.
- .3 Application tolerances:
 - .1 Pressure at fixtures: +/- 70 kPa.
 - .2 Flow rate at fixtures: +/- 20%.
- .4 Adjustments:
 - .1 Verify that flow rate and pressure meet design criteria.

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- .2 Make adjustments while flow rate or withdrawal is (1) maximum and (2) 25% of maximum and while pressure is (1) maximum and (2) minimum.
- .5 Vacuum breakers, backflow preventers, backwater valves:
 - .1 Test tightness, accessibility for O&M of cover and of valve.
 - .2 Simulate reverse flow and back-pressure conditions to test operation of vacuum breakers, backflow preventers.
 - .3 Verify visibility of discharge from open ports.
- .6 Access doors:
 - .1 Verify size and location relative to items to be accessed.
- .7 Cleanouts:
 - .1 Verify covers are gas-tight, secure, yet readily removable.
- .8 Pressure regulators, PRV assemblies:
 - .1 Adjust settings to suit locations, flow rates, pressure conditions.
- .9 Strainers:
 - .1 Clean out repeatedly until clear.
 - .2 Verify accessibility of cleanout plug and basket.
 - .3 Verify that cleanout plug does not leak.
- .10 Hose bibbs, sediment faucets:
 - .1 Verify operation and at all low points.
- .11 Commissioning Reports:
 - .1 In accordance with Division 01.
- .12 Training:
 - .1 In accordance with Division 01.
 - .2 Demonstrate full compliance with Design Criteria.

END OF SECTION