

Part 1 General

1.1 REFERENCES

- .1 American National Standards Institute/American Water Works Association (ANSI/AWWA)
 - .1 ANSI/AWWA C104/A21.4, Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
 - .2 ANSI/AWWA C110/A21.1, American National Standard for Ductile Iron and Gray Iron Fittings for Water.
 - .3 ANSI/AWWA C111/A21.11, American National Standard for Rubber Gasket-Joints for Ductile-Iron Pressure Pipe and Fittings.
 - .4 ANSI/AWWA C151/A21.5, AWWA Standard for Ductile-Iron Pipe, Centrifugally Cast.
 - .5 ANSI/AWWA C901, AWWA Standard for Polyethylene (PE) Pressure Pipe and Tubing, 1 Inch (13 mm) through 3 Inch (76 mm), for Water Service.
- .2 ASTM International
 - .1 ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .3 Manufacturer's Standardization Society of the Valve and Fittings Industry
 - .1 MSS-SP-70, Gray Iron Gate Valves, Flanged and Threaded Ends.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for valves, couplings and mechanical joints and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for materials for incorporation into manual.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect piping materials from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 PIPE

- .1 Service water pipe: ductile iron cement mortar lined or polyethylene (PE) from 1 m outside of building as indicated.
 - .1 Ductile iron: ANSI/AWWA C151/A21.51.
 - .2 Cement mortar lining for ductile iron pipe: ANSI/AWWA C104/A21.4.
 - .3 Polyethylene (PE) pipe: ANSI/AWWA C901.

2.2 CATHODIC PROTECTION

- .1 Cathodic Protection: to Section 26 42 00 - Telethermics: Cathodic Protection.

2.3 FITTINGS

- .1 NPS 3 and larger mechanical joints or flanged: to ANSI/AWWA C110/A21.10.

2.4 JOINTS

- .1 Rubber gaskets for mechanical joints or flanges: to ANSI/AWWA C111/A21.11.
- .2 Bolts, nuts, hex head with washers: to ASTM A307, heavy series.

2.5 GATE VALVES

- .1 Rising stem: to MSS SP-70, class 125, 860 kPa, flat flange faces, cast-iron body, bronze trim, bolted bonnet.

2.6 PROTECTIVE COATING

- .1 100% Solids epoxy coating.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for distribution piping installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Install in accordance with Canadian Plumbing Code, Provincial Plumbing Code and local authority having jurisdiction.
- .2 Piping cut square, reamed, free of cuttings and foreign material.
- .3 Minimum depth of bury: as indicated.
- .4 Lay buried piping in compacted washed sand in accordance with AWWA Class "B" bedding, where existing ground below bedding is unstable, install pipe on continuous concrete support.
- .5 Where piping enters building, provide support, and seal with modular link type seal with sleeve against ingress of moisture; to approval of authority having jurisdiction.
- .6 Assemble piping using fittings manufactured to ANSI standards and in accordance with manufacturer's instructions.
- .7 Apply [1] layer of protective coating to buried piping.

3.3 PRESSURE TESTING

- .1 Conform to Section 21 05 01 - Common Work Results for Mechanical.

3.4 DISINFECTION

- .1 Co-ordinate with Section 22 11 16 - Domestic Water Piping.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION