

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 23 05 05 – Installation of Pipework.

1.2 REFERENCE STANDARDS

- .1 American National Standards Institute (ANSI)/American Society of Mechanical Engineers International (ASME)
 - .1 ANSI/ASME B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
 - .2 ANSI/ASME B16.22, Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
- .2 ASTM International Inc.
 - .1 ASTM B88M , Standard Specification for Seamless Copper Water Tube (Metric).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 National Research Council (NRC)
 - .1 National Plumbing Code of Canada 2015 (NPC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and datasheets for insulation and adhesives, and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Closeout Submittals:
 - .1 Provide maintenance data for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Packaging Waste Management: remove for reuse of crates padding pallets packaging materials in accordance with Section 01 00 10 – General Instructions.
- .2 Place materials defined as hazardous or toxic in designated containers.

Part 2 Products

2.1 PIPING

- .1 Domestic hot, cold and recirculation systems, within building.
 - .1 Above ground: copper tube, hard drawn, type L: to ASTM B88M.

2.2 FITTINGS

- .1 Cast copper, solder type: to ANSI/ASME B16.18.
- .2 Wrought copper and copper alloy, solder type: to ANSI/ASME B16.22.

2.3 JOINTS

- .1 Solder: tin-antimony copper silver.
- .2 Teflon tape: for threaded joints.
- .3 Dielectric connections between dissimilar metals: dielectric fitting, complete with thermoplastic liner.

Part 3 Execution

3.1 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install in accordance with all applicable codes.
- .2 Install pipe work in accordance with Section 23 05 05 - Installation of Pipework, supplemented as specified herein.
- .3 Assemble piping using fittings manufactured to ANSI standards.
- .4 Install CWS piping below and away from HWS and HWC and other hot piping so as to maintain temperature of cold water as low as possible.
- .5 Connect to fixtures and equipment in accordance with manufacturer's written instructions unless otherwise indicated.

3.3 PRESSURE TESTS

- .1 Conform to requirements of Section 21 05 01- Common Work Results for Mechanical.
- .2 Test pressure: greater of 1 times maximum system operating pressure or 860 kPa.

3.4 CLEANING

- .1 Clean in accordance with Section 01 00 10 – General Instructions.
- .2 Waste Management: separate waste materials for recycling in accordance with Section 01 00 10 – General Instructions.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 23 05 05 - Installation of Pipework.

1.2 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA International).
 - .1 CSA B67-1972(R1996), Lead Service Pipe, Waste Pipe, Traps, Bends and Accessories.
 - .2 CAN/CSA-B70-06, Cast Iron Soil Pipe, Fittings and Means of Joining.
- .2 National Research Council Canada (NRC)
 - .1 National Plumbing Code of Canada 2015 (NPC).

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and datasheets for adhesives, and include product characteristics, performance criteria, physical size, finish and limitations.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle in accordance with Section 01 61 00- Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Packaging Waste Management: remove for reuse of crates, packaging materials, pallets, padding in accordance with Section 01 00 10 – General Instructions.

Part 2 Products

2.1 CAST IRON PIPING AND FITTINGS

- .1 Above ground storm: to CAN/CSA-B70.
 - .1 Joints:
 - .1 Hub and spigot:
 - .1 Caulking lead: to CSA B67.
 - .2 Mechanical joints:
 - .1 Neoprene or butyl rubber compression gaskets with stainless steel clamps.

Part 3 Execution

3.1 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 In accordance with Section 23 05 05 - Installation of Pipework.
- .2 Install in accordance with all applicable codes.

3.3 TESTING

- .1 Hydraulically test to verify grades and freedom from obstructions.

3.4 PERFORMANCE VERIFICATION

- .1 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.
- .2 Affix applicable label (storm, sanitary, vent, pump discharge etc.) c/w directional arrows every floor or 4.5 m (whichever is less).

3.5 CLEANING

- .1 Clean in accordance with Section 01 00 10 – General Instructions.
- .2 Waste Management: separate waste materials for recycling in accordance with Section 01 00 10 – General Instructions.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 07 52 00 – Modified Bituminous Membrane Roofing.
- .2 Section 07 92 00 – Joint Sealants.
- .3 Section 21 05 01 – Common Work Results for Mechanical.

1.2 REFERENCE STANDARDS

- .1 CSA International
 - .1 CSA B79, Commercial and Residential Drains and Cleanouts.

1.3 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 plumbing products and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings in accordance with Section 01 33 00- Submittal Procedures.
- .4 Instructions: submit manufacturer's installation instructions.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 00 10 – General Instructions.
- .2 Operation and Maintenance Data: submit operation and maintenance data for plumbing specialties and accessories for incorporation into manual.
 - .1 Description of plumbing specialties and accessories, giving manufacturers name, type, model, year and capacity.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .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 and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect plumbing materials from nicks, scratches, and blemishes.

- .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 00 10 – General Instructions.

Part 2 Products

2.1 ROOF DRAINS (RD-1 & RD-2)

- .1 RD-1: CSA B79 approved retrofit drain designed to penetrate the old roof drain body bonding securely to the inside of the drain pipe with vandal-proof cast aluminium screened dome with access hatch and stainless steel hardware.
 - .1 Deck flange: 450 mm.
 - .2 Downpipe diameter to suit existing drain.
 - .3 Cast aluminium clamping ring.
 - .4 Compressible EPDM connectors to ensure waterproof seal with existing drain pipe.
 - .5 Provide acceptable separation between dissimilar metals.
- .2 RD-2: CSA B79 approved retrofit drain designed to penetrate the old roof drain body bonding securely to the inside of the rain pipe with vandal-proof cast aluminium screened dome with access hatch, flow control weir and stainless steel hardware.
 - .1 Deck flange: 450 mm.
 - .2 Downpipe diameter to suit existing drain.
 - .3 Cast aluminium clamping ring.
 - .4 Compressible EPDM connectors to ensure waterproof seal with existing drain pipe.
 - .5 Provide acceptable separation between dissimilar metals.

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 plumbing specialties and accessories 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.

3.2 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.

3.3 INSTALLATION

- .1 Install in accordance with National Plumbing Code of Canada (NPC and local authority having jurisdiction.
- .2 Install in accordance with manufacturer's instructions and as specified.
- .3 Refer to section 07 52 00 – Modified Bituminous Membrane Roofing and section 07 92 00 – Joint Sealants and architectural details for installation in new roofing system.

3.4 TESTING AND ADJUSTING

- .1 Timing:
 - .1 After start-up deficiencies rectified.
- .2 Roof drains:
 - .1 Check location at low points in roof.
 - .2 Check security, removability of dome.
 - .3 Adjust weirs to suit actual roof slopes, meet requirements of design.
 - .4 Clean out sumps.
 - .5 Verify provisions for movement of roof systems.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 00 10 – General Instructions.
 - .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 00 10 – General Instructions.
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 00 10 – General Instructions.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by plumbing specialties and accessories installation.

END OF SECTION

