SECTION 22 10 06

PLUMBING PIPING SPECIALTIES

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| PART 1 | GENERAL |

1. **SECTION INCLUDES**
2. Drains
3. Cleanouts
4. Hose bibs
5. Backflow Preventers
6. Double Check Valve Assemblies
7. Water hammer arrestors
8. Sump and interceptors.
9. Mixing valves.
10. Catch basins and manholes
11. Water Level Indicators - Water Reservoirs
12. Electric Water Heater
13. **RELATED REQUIREMENTS**
14. Section 03 3000 - Cast-in-Place Concrete: Manhole bottoms.
15. Section 03 3000 - Cast-in-Place Concrete: Execution requirements for concrete catch basin and manhole bases.
16. Section 22 1005 - Plumbing Piping and Valves.
17. Section 22 3000 - Plumbing Equipment.
18. Section 22 4000 - Plumbing Fixtures.
19. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.
20. **REFERENCE STANDARDS**
21. ASME A112.6.3 - Floor and Trench Drains; The American Society of Mechanical Engineers; 2001 (R2007).
22. ASME A112.6.4 - Roof, Deck, and Balcony Drains; The American Society of Mechanical Engineers; 2003.
23. ASSE 1011 - Hose Connection Vacuum Breakers; American Society of Sanitary Engineering; 2004 (ANSI/ASSE 1011).
24. ASSE 1012 - Backflow Preventer with Intermediate Atmospheric Vent; American Society of Sanitary Engineering; 2009 (ANSI/ASSE 1012).
25. ASTM C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections [Metric]; 2014.
26. DIN 19580 - Drainage Channels for Vehicular and Pedestrian Areas - Durability, Mass per Unit Area and Evaluation of Conformity; 2010.
27. NSF 61 - Drinking Water System Components - Health Effects; 2014 (Errata 2015).
28. NSF 372 - Drinking Water System Components - Lead Content; 2011.
29. PDI-WH 201 - Water Hammer Arresters; Plumbing and Drainage Institute; 2010.
30. **SUBMITTALS**
31. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
32. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.
33. Certificates: Certify that grease interceptors meet or exceed specified requirements.
34. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
35. Operation Data: Indicate frequency of treatment required for interceptors.
36. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.
37. Project Record Documents: Record actual locations of equipment, cleanouts, backflow

preventers, water hammer arrestors, -----etc.

1. Maintenance Materials: Furnish the following for Employer/Owner's use in maintenance of project.
2. Extra Loose Keys for Outside Hose Bibs: One.
3. Extra Hose End Vacuum Breakers for Hose Bibs: One.
4. **QUALITY ASSURANCE**
5. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than ten years documented experience.
6. **DELIVERY, STORAGE, AND HANDLING**
7. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

1. **GENERAL REQUIREMENTS**
2. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.
3. **DRAINS**
4. Floor Drains types refer to BOQ:
5. Roof Drains:
6. Assembly: ASME A112.6.4.
7. Body: Lacquered cast iron with sump.
8. Strainer: Removable cast iron dome with vandal proof screws.
9. Shower Drain:
10. Factory fabricated grate for tiled showers with built in outlet pipe and trap  
    constructed from stainless steel
11. Floor Sink:
12. Prefabricated Trench Drain: Trench drain system assembled from factory fabricated, polymer concrete castings in standard lengths and variable depths, with integral joint flanges and integral grating support rails; includes joint gaskets and grating.
13. Load Class: DIN 19580, Class C.
14. Grating Material and Style: Galvanized steel bars.
15. Trench Width: as per BOQ.
16. Trench Section Length: as per BOQ.
17. Grating Support Rail: Stainless steel.
18. Accessories:
19. Foul air trap.
20. Vertical outlet strainer.
21. **CLEAN-OUTS**

A. clean outs types refer to BOQ:

1. **HOSE BIBBS**
2. Interior Hose Bibbs:

1. Bronze or brass with integral mounting flange, replaceable hexagonal disc, hose thread spout, chrome plated where exposed with hand-wheel, integral vacuum breaker in conformance with ASSE 1011.

1. **BACKFLOW PREVENTERS**
2. Reduced Pressure Backflow Preventers:

1. ASSE 1013; bronze body with bronze internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve that opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.

1. **DOUBLE CHECK VALVE ASSEMBLIES**
2. Double Check Valve Assemblies:

1. ASSE 1012; Bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent.

1. **WATER HAMMER ARRESTORS**

A. Water Hammer Arrestors:

1. Stainless steel construction, bellows type sized in accordance with [PDI-WH 201](http://www.pdionline.org/), precharged suitable for operation in temperature range minus 73 to 149 degrees C (minus 100 to 300 degrees F) and maximum 1700 kPa (250 psi) working pressure.

1. **SUMP AND INTERCEPTORS**

A. Sumps:

For reinforced concrete sumps and required openings, drainage fittings and lockable air tight epoxy coated 9mm thick checkered steel cover with gasket seal frames.

1. **LOCALIZED ELECTRIC WATER HEATERS**

Refer to BOQ

**PART 3 EXECUTION**

1. **INSTALLATION**
2. Install in accordance with manufacturer's instructions.
3. Extend cleanouts to finished floor or wall surface.
4. Encase exterior cleanouts in concrete flush with grade.
5. Install floor cleanouts at elevation to accommodate finished floor.
6. Install approved portable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
7. Pipe relief from backflow preventer to nearest drain.
8. Install water hammer arrestors complete with accessible isolation valve on hot and cold-water supply piping to washing machine outlets.

**END OF SECTION**