

SECTION 22 05 10 - PLUMBING SPECIALTIES

PART 1 - GENERAL

- A. Related Section:
 - 1. 220500 Plumbing Piping.
 - 2. 220640 Plumbing Fixtures.
- B. REFERENCE STANDARDS
 - 1. American Society for Testing and Materials (ASTM):
- C. Submit properly identified manufacturer's literature before starting work.
- D. Submit Shop Drawings/catalog cuts for the following:
 - 1. Drains.
 - 2. Cleanouts.
 - 3. Shock Absorbers.
 - 4. Unions and Flanges.
 - 5. Hangers and Inserts.
 - 6. Trap Resealers.
 - 7. Vacuum Breakers.
 - 8. Gages and Thermometers.
 - 9. Strainers.
 - 10. Firestop Devices.
 - 11. Water Hammer Arrestors.

1.1 COMPONENTS

- 1. Provide products complying with requirements of this section from one of the following manufacturers. Model numbers are listed to establish a level of quality only. Products of other manufacturers may be provided subject to compliance with requirements of this section and Section on Substitutions and Product Options.
 - a. Josam.
 - b. Zurn.
 - c. Wade.
 - d. Smith.
 - e. Central Brass.
 - f. Woodford.
 - g. Chicago.
 - h. Ames.
 - i. Febco.
 - j. Watts Regulator Company.
- 2. Floor Drains.
 - a. Toilet Rooms:

- (1) Manufacturer/Model:
 - (a) Josam, Model 30000-65-50-X.
 - (b) Zurn, Model ZN415-S-6S.
 - (c) Wade, Model 1103G6.
 - (2) Coated cast iron floor drain, 2-piece body, double drainage flange, invertible non-puncturing flashing collar, weepholes, bottom outlet, inside caulk connection, and adjustable satin Nikaloy 6" x 6" super-flo strainer and security screws.
3. Cleanouts.
 - a. Wall:
 - (1) Manufacturer/Model: (Wall Type):
 - (a) Josam, Model 58890-15-20.
 - (b) Zurn, Model Z1469-VP.
 - (c) Wade, Model W-8470-R-179.
 - (2) Round stainless wall access secured cover, center vandal-proof screw and raised head bronze tapped plug.
 - b. Finished Floor:
 - (1) Manufacturer/Model:
 - (a) Josam, Model 58640-15/58490.
 - (b) Zurn, Model ZN1400.
 - (c) Smith, Model S-4730-U/S4450.
 - (2) Cast Nickaloy access square frame, anchor lugs, satin smooth finish, vandal-proof screws/bronze plug in a cast iron clean-out ferrule.
 - c. Unfinished Floor:
 - (1) Manufacturer/Model:
 - (a) Zurn, Model ZN1400.
 - (b) Josam, Model 58460A-6-2-15.
 - (c) Wade, Model W8240-S-2-179.
 - (d) Smith, Model S-4333-S-PB-U.
 - (2) Cast iron floor clean-out, internal bronze plug, scoriated bronze square top with vandal-proof screws.
4. Trap Primer Valves.
 - a. Precision Plumbing Products, Inc., Model Prime-Rite, with distribution unit, up to 4 floor drains.
 - b. Brass body primer, 1/2" connections, distribution unit with copper

reservoir, brass fittings, clear plastic inspection cover, wall mounting brackets furnished.

5. Hose Bibbs.

- a. Interior, Exposed Under Lavatory:
 - (1) Manufacturer/Model:
 - (a) Chicago, Model 293.
 - (b) Woodford, Model 21P-1/2.
 - (c) Central Brass, Model 576-1/2.
 - (2) 1/2" inlet, cast brass body, polished chrome plated, wall flange, tee key, hose thread end.
- b. Provide a ball valve for shut-off control of each hose bibb, mounted directly above the bibb. This valve is not required for hose bibbs in toilet rooms that have shut-off valves on potable cold-water supply.

6. Water Hammer Arrestors.

- a. Manufacturer/Model:
 - (1) Sioux Chief Mfg. 650 and 660 series.
 - (2) Josam 75000.
 - (3) Zurn Industries, Inc., Model Z-1700.
- b. Stainless steel shell, elastomeric bellows, pressurized argon charge, sized per PDI-WH 201 at each branch of cold and hot water.

7. Vacuum Breakers.

- a. Hose Bibb Vacuum Breaker: Watts Regulator Co., Model No. 8A non-removable type.
- b. Atmospheric Type: Watts Regulator Co., Model No. 288A.

1.2 Pipe Hangers and Supports:

- 1. Provide hangers, supports, and supplementary steel as specified for different applications.
- 2. Insert, Hangers, Rods, and Clamps: Figure numbers used refer to Grinnell. Fee and Mason or Elcen Metal Products are also accepted manufacturers.
 - a. Inserts:
 - 1) Universal Concrete Insert: Fig.282.
 - 2) CB Junior Concrete Insert: Fig.279.
 - 3) Wedge Type Concrete Insert: Fig.281.
 - 4) Expansion Case: Fig.117.
 - b. Hangers: Adjustable clevis type.
 - 1) Cast Iron Pipe: Fig.590.

- 2) Copper Tubing: Fig.CT-65.
- 3) Insulated Steel Pipe: Fig.300.
- 4) Uninsulated Steel Pipe: Fig.146.

c. Clamps:

- 1) V.F.S. beam clamp with weldless eyenut, Fig.292, clamp size 1, rod size 3/4".
- 2) C-clamp with retaining clip, Fig.87.
- 3) I-beam clamp, Fig.131.
- 4) Universal side I beam clamp, Fig.225.
- 5) C-clamp, copper finish, Fig.CT88.

d. Rods: Galvanized with continuous thread, Fig.146.

e. Riser Clamps:

- 1) Black Steel, Fig.261.
- 2) Plastic coated, Fig.261C
- 3) Copper finish, Fig.CT121.

3. Horizontal Steel:

<u>Pipe Size</u>	<u>Rod Diameter</u>	<u>Clamp or Hanger Maximum Spacing</u>
Up to 1-1/4"	3/8"	8 feet
1-1/2 and 2 inches	3/8"	10 feet
2-1/2 and 3 inches	1/2"	12 feet
4 and 5 inches	5/8"	12 feet
6 inches	3/4"	15 feet
8 inches & larger	1 inch	15 feet

4. Horizontal Copper Piping:

<u>Pipe</u>	<u>Rod Diameter</u>	<u>Clamp or Hanger Maximum Spacing</u>
Up to 1-inch	3/8"	6 feet
1-1/4 and 1-1/2"	3/8"	6 feet
2 inches	3/8"	8 feet
2-1/2"	1/2"	8 feet
3 and 4 inches	1/2"	8 feet

5. Horizontal Cast Iron Piping:

<u>Pipe Size</u>	<u>Rod Diameter</u>	<u>Maximum Spacing</u>
Up to 4 inches	1/2"	5 feet
4 inches	5/8"	5 feet
6 inches and larger	3/4"	5 feet

6. Wall Support:

- a. U-clamps as accepted.
 - b. Unistrut supports.
- 7. Vertical Support: Steel riser clamps.
- 8. Unions and Flanges.
 - a. Copper Pipe 2-1/2" and Smaller: Bronze unions.
 - b. Copper Pipe 3" and Larger: Bronze flanged connections Class 150 PSIG.
 - c. Dielectric Unions or Flanges:
 - (1) Meet dimensional requirements and tensile strength of pipe unions or flanges according to Federal Specification WW-U-531D.
 - (2) Suitable for required operating pressures and temperature conditions.
 - (3) Provide metal connections on both ends. Ends shall be threaded or soldered to match adjacent piping.
 - (4) Separate metal parts at union to prevent current flow between dissimilar metals.
- 9. Escutcheons.
 - a. Provide escutcheons securely in place on exposed pipes where they pass through walls, partitions, floors and ceiling of finished areas.
 - b. Interior Walls, Partitions, and Ceilings: Solid or stamped chrome plated brass or stainless steel, one piece or split pattern.
 - c. Floors and Exterior: Solid cast brass, rough chrome plated or cast nickel bronze alloy, one piece or split pattern.

2.0 EXECUTION

2.1 INSTALLATION

- A. Provide drains and cleanouts as scheduled on drawings.
- B. Cleanouts:
 - 1. Place pipe cleanouts at the foot of each soil and waste stack in sanitary system and place pipe cleanouts in horizontal runs not to exceed 50 foot spacing.
 - 2. Install access covers as specified.
- C. Interior Flush Cleanouts:
 - 1. Flush cleanouts with recessed sockets (without access covers) may be used in non-finished areas such as equipment rooms, storage rooms, and the like, if top of hub is installed in level position and top of clean out plug is flush with the concrete floor.

D. Inserts:

1. Use inserts for suspending hangers from reinforced concrete slabs or beams when possible.
2. Provide flush inserts at concrete to be a finished surface.

E. Sleeves:

1. Seal space between pipe or duct and surrounding floor, wall, or ceiling construction with noncombustible insulation and tight-fitting metal caps on both sides with caulking.
 - a. Pipe Through Floors: Form from 18 gage galvanized sheet metal.
 - b. Pipes Through Beams, Walls, Fireproofing, Footings, and Potentially Wet Floors:
 - c. Form from steel plate or 18 gage galvanized sheet metal.
2. Size sleeves to allow movement caused by expansion.
3. Seal and fireproof penetrations.

F. Pipe Hangers and Supports:

1. Provide adjustable hangers, inserts, brackets, rolls, clamps, and supplementary steel as required for proper support of pipelines.
 - a. Design hangers to allow for expansion and contraction of pipelines. Size to allow pipe covering to run continuously through hangers. Allow for proper anchoring and movement of all hot lines.
 - b. Install hangers to allow 1/2" minimum clear space between finished covering and adjacent work.
 - c. Place a hanger within 1 foot of each horizontal elbow.
 - d. Use hangers with 1-1/2" minimum vertical adjustment after piping is erected.
 - e. Provide multiple or trapeze hangers if several pipes can be installed in parallel and at the same elevation.
 - f. Support riser piping independently of connected horizontal piping when practical.
 - g. Piping shall not be supported by equipment.
 - h. Coordinate location of hangers with light fixtures.
 - i. Wire brush steel or iron supports and prepare surfaces ready for painting specified under Section 09900. Prime coat exposed non galvanized hangers and supports.
 - j. Provide copper plated hangers and supports for copper piping or provide sheet lead packing between hanger or support and piping. Dissimilar metal contact is not allowed.
2. Horizontal Cast Iron Pipe: Place hangers within 18 inches of hub or joint.
3. Hubless Joints: Provide support at every other joint. Support each joint when length between supports exceeds 4 feet.
4. Trapeze Clamp or Hangers:
 - a. Secure pipes supported by trapeze clamp or hangers and not mounted on pipe rolls to trapeze with pipe clamps or ☐ ☐ bolts.
 - b. Place clamp or hangers at each change of direction.

- c. Place clamp or hangers within 1 foot of valves and other appurtenances in horizontal piping.
 - d. Place clamp or hanger's maximum 3 feet from end of each branch runout.
- 5. Special Supports: Clamps, hangers, and supports required by equipment manufacturers shall be installed according to equipment manufacturer's recommendations.
- 6. Plumber's tape, straps, chain, wire hangers, or perforated bar are not allowed for hanging pipe.
- G. Water Hammer Arresters:
 - 1. Supply Piping: Provide a water hammer arrester for each fixture supply including hot and cold water. Do not provide air chambers where water hammer arresters are installed.
- H. Unions and Flanges: Provide at connections of equipment and at strainers and control valves.
- I. Escutcheons: Fit and firmly secure escutcheons to pipes passing through finished floors, ceilings and walls.
- J. Provide Watts" Flood safe" connectors @ sinks & lavatories or any flexible piping connections.

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