

SECTION 13910 - FIRE PROTECTION BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Pipe, fittings, valves, and connections for sprinkler, standpipe and fire hose, and combination sprinkler and standpipe systems.

1.02 RELATED REQUIREMENTS

- A. Section 13925 - Fire Suppression Sprinklers: Sprinkler systems design.
- B. Section 13975 - Standpipes and Fire Hoses: Standpipe design.

1.03 REFERENCE STANDARDS

- A. ASME (BPV IX) - Boiler and Pressure Vessel Code, Section IX - Welding and Brazing Qualifications; The American Society of Mechanical Engineers; 2010.
- B. ASME B16.3 - Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers; 1998 (R2006).
- C. ASME B16.5 - Pipe Flanges and Flanged Fittings; The American Society of Mechanical Engineers; 2009 (ANSI/ASME B16.5).
- D. ASME B16.9 - Factory-made Wrought Steel Buttwelding Fittings; The American Society of Mechanical Engineers; 2007.
- E. ASME B16.11 - Forged Steel Fittings, Socket-welding and Threaded; The American Society of Mechanical Engineers; 2009.
- F. ASTM A 53/A 53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2007.
- G. ASTM A 135/A 135M - Standard Specification for Electric-Resistance Welded Steel Pipe; 2009.
- H. ASTM A 234/A 234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2007.
- I. ASTM A 536/A 536M - Standard Specification for Ductile Iron Castings; 2004
- J. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; American Water Works Association; 2005 (ANSI/AWWA C105/A21.5).
- K. NFPA 13 - Standard for the Installation of Sprinkler Systems; National Fire Protection Association; 2010.
- L. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; National Fire Protection Association; 2010.
- M. UL 262 - Gate Valves for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- N. UL 312 - Check Valves for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate pipe materials used, jointing methods, supports, floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.

- C. Grooved joint couplings and fittings shall be shown on drawings and product submittals, and shall be specifically identified with the applicable style or series designation
- D. Project Record Documents: Record actual locations of components and tag numbering.
- E. Operation and Maintenance Data: Include installation instructions and spare parts lists.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.

PART 2 - PRODUCTS

2.01 FIRE PROTECTION SYSTEMS

- A. Sprinkler Systems: Conform work to NFPA 13.
- B. Standpipe and Hose Systems: Conform to NFPA 14.
- C. Welding Materials and Procedures: Conform to ASME Code.
- D. Grooved Joint Components: All grooved joint couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
- E. Castings: All castings used for coupling housings, fittings, valve bodies, etc., shall be date stamped for quality assurance and traceability.

2.02 BURIED PIPING

- A. PVC Pipe: Class 150 PVC C-900
- B. Steel Pipe: ASTM A 53/A 53M Schedule 40 or ASTM A 135/A 135M Schedule 10, black, with AWWA C105 polyethylene jacket, or double layer, half-lapped polyethylene tape.
 - 1. Steel Fittings: ASME B16.9, wrought steel, buttwelded; with double layer, half-lapped polyethylene tape.
 - 2. Casing: Closed glass cell insulation.

2.03 ABOVE GROUND PIPING

- A. Steel Pipe: ASTM A 53 Schedule 40, black.
 - 1. Steel Fittings: ASME B16.9, wrought steel, buttwelded, ASTM A 234/A 234M, wrought carbon steel or alloy steel, ASME B16.5, steel flanges and fittings, or ASME B16.11, forged steel socket welded and threaded.
 - 2. Malleable Iron Fittings: ASME B16.3, threaded fittings.
 - 3. Mechanical Grooved Couplings: Two ductile iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, ASTM A449 electroplated steel bolts, nuts, and washers; galvanized for galvanized pipe.
 - a. Rigid Type: Housings shall be cast with offsetting angle-pattern bolt pads to provide rigidity and system support and hanging in accordance with NFPA-13. Couplings shall be fully installed at visual pad-to-pad offset contact. (Tongue and recess type couplings, or any coupling that requires exact gapping of bolt pads on each side of the coupling at specified torque ratings, are not allowed.)
 - 1) 1-1/4" through 8": Installation-Ready, for direct stab installation without field disassembly. Victaulic Style 009-EZ and Style 107H.
 - 2) Victaulic FireLock™ Style 005 and Zero-Flex Style 07
 - b. Flexible Type: For use in locations where vibration attenuation and stress relief are required, and for seismic applications in accordance with the manufacturer's recommendations. Victaulic Installation-Ready Style 177 or Style 75 / 77.
 - c. Gaskets:
 - 1) Dry Systems, Ambient Temp Range - FlushSeal®, Grade EPDM, Type A
 - 2) Freezer Applications, -40°F to 0°F - FlushSeal®, Grade L, Silicone

3) Water / Wet Systems, Ambient Temp Range - Grade EPDM, Type A

2.04 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- C. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
- D. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- E. Vertical Support: Steel riser clamp.

2.05 GATE VALVES

- A. Up to and including 2 inches:
 - 1. Manufacturers:
 - a. Victaulic: www.victaulic.com
 - b. Nibco, Inc: www.nibco.com.
 - c. Milwaukee Valve Company: www.milwaukeevalve.com.
 - d. Stockham: www.stockham.com
 - 2. Bronze body, bronze trim, rising stem, handwheel, solid wedge or disc, threaded ends.
- B. Over 2 inches:
 - 1. Manufacturers:
 - a. Victaulic: www.victaulic.com. Victaulic Series 771
 - b. Nibco, Inc: www.nibco.com.
 - c. Milwaukee Valve Company: www.milwaukeevalve.com.
 - d. Stockham: www.stockham.com
 - 2. Iron body, bronze trim, rising stem pre-grooved for mounting tamper switch, handwheel, OS&Y, solid rubber covered bronze or cast iron wedge, flanged or grooved ends.

2.06 GLOBE OR ANGLE VALVES

- A. Up to and including 2 inches:
 - 1. Manufacturers:
 - a. Nibco, Inc: www.nibco.com.
 - b. Milwaukee Valve Company: www.milwaukeevalve.com.
 - c. Stockham: www.stockham.com
 - 2. Bronze body, bronze trim, rising stem and handwheel, inside screw, renewable rubber disc, threaded ends, with backseating capacity repackable under pressure.
- B. Over 2 inches:
 - 1. Manufacturers:
 - a. Nibco, Inc: www.nibco.com.
 - b. Milwaukee Valve Company: www.milwaukeevalve.com.
 - c. Stockham: www.stockham.com
 - 2. Iron body, bronze trim, rising stem, handwheel, OS&Y, plug-type disc, flanged ends, renewable seat and disc.

2.07 BALL VALVES

- A. Up to and including 2 inches:
 - 1. Manufacturers:
 - a. Victaulic: www.victaulic.com. Victaulic Series 728
 - b. Nibco, Inc: www.nibco.com.
 - c. Milwaukee Valve Company: www.milwaukeevalve.com.
 - d. Stockham: www.stockham.com
 - 2. Bronze two piece body, brass, chrome plated bronze, or stainless steel ball, teflon seats and stuffing box ring, lever handle and balancing stops, grooved ends or threaded ends with

- union.
 - 3. UL listed and FM approved valves shall include a weatherproof actuator housing with handwheel and supervisory switches.
- B. Over 2 inches:
- 1. Manufacturers:
 - a. Victaulic: www.victaulic.com. Series 726 (unlisted valves)
 - b. Nibco, Inc: www.nibco.com.
 - c. Milwaukee Valve Company: www.milwaukeevalve.com.
 - d. Stockham: www.stockham.com
 - 2. Cast steel body, chrome plated steel ball, teflon seat and stuffing box seals, lever handle or gear drive handwheel for sizes 10 inches and over, flanged or grooved ends.

2.08 BUTTERFLY VALVES

- A. Cast or Ductile Iron Body
- 1. Manufacturers:
 - a. Victaulic: www.victaulic.com; Product Series 705.
 - 2. Ductile iron body, electroless-nickel coated ductile iron disc, pressure responsive Nitrile seat, stainless steel stem, and grooved ends. (Stem shall be offset from the disc centerline to provide full 360-degree circumferential seating.)
 - 3. UL listed and FM approved.
 - 4. Valves shall include a weatherproof actuator housing with handwheel and supervisory switches

2.09 CHECK VALVES

- A. Over 2 inches:
- 1. Manufacturers:
 - a. Victaulic: www.victaulic.com; Product Series 717.
 - b. Nibco, Inc: www.nibco.com.
 - c. Milwaukee Valve Company: www.milwaukeevalve.com.
 - d. Stockham: www.stockham.com
 - 2. Ductile iron body, bronze disc, stainless steel spring and shaft, resilient seal, threaded, wafer, grooved, or flanged ends.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Goove or Bevel plain end ferrous pipe.
- B. Remove scale and foreign material, from inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.
- D. Unions and flanges for servicing and disconnect are not required in installations using grooved mechanical joint couplings. (The couplings shall serve as unions and disconnect points.)

3.02 INSTALLATION

- A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
 - 1. In grooved installations, use Victaulic rigid couplings with offsetting angle-pattern bolt pads, which permit support and hanging in accordance with NFPA-13.
- B. Install standpipe piping, hangers, and supports in accordance with NFPA 14.
- C. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- D. Install piping to conserve building space, to not interfere with use of space and other work.

- E. Group piping whenever practical at common elevations.
- F. Sleeve pipes passing through partitions, walls, and floors.
- G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- H. Pipe Hangers and Supports:
 - 1. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 - 2. Place hangers within 12 inches of each horizontal elbow.
 - 3. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 - 4. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
 - 5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- I. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.
- J. Grooved joints shall be installed in accordance with the manufacturer's latest published installation instructions. Grooved ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove. Gaskets shall be of an elastomer grade suitable for the intended service, and shall be molded and produced by the coupling manufacturer. The grooved coupling manufacturer's factory trained representative shall provide on-site training for contractor's field personnel in the use of grooving tools and installation of grooved joint products. The representative shall periodically visit the jobsite and review contractor is following best recommended practices in grooved product installation. (A distributor's representative is not considered qualified to conduct the training or jobsite visit(s).)
- K. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding. Refer to Section 09900.
- L. Do not penetrate building structural members unless indicated.
- M. Provide sleeves when penetrating footings, floors, and walls. Seal pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required.
- N. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- O. Install valves with stems upright or horizontal, not inverted. Remove protective coatings prior to installation.
- P. Provide drain valves at main shut-off valves, low points of piping and apparatus.

END OF SECTION

SECTION 13915 - IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Tags.
- B. Pipe Markers.

1.02 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems; The American Society of Mechanical Engineers; 2007.
- B. ASTM D 709 - Standard Specification for Laminated Thermosetting Materials; 2001 (Reapproved 2007).

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturers catalog literature for each product required.
- E. Project Record Documents: Record actual locations of tagged valves.

PART 2 - PRODUCTS

2.01 IDENTIFICATION APPLICATIONS

- A. Automatic Controls: Tags.
- B. Instrumentation: Tags.
- C. Piping: Tags.
- D. Valves: Nameplates and ceiling tacks where above lay-in ceilings.

2.02 TAGS

- A. Manufacturers:
 - 1. Advanced Graphic Engraving: www.advancedgraphicengraving.com.
 - 2. Brady Corporation: www.bradycorp.com.
 - 3. Kolbi Pipe Marker Co.: www.kolbipipemarkers.com.
 - 4. Seton Identification Products: www.seton.com.
- B. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.
- C. Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

2.03 PIPE MARKERS

- A. Manufacturers:
 - 1. Brady Corporation: www.bradycorp.com.
 - 2. Kolbi Pipe Marker Co.: www.kolbipipemarkers.com.
 - 3. MIFAB, Inc.: www.mifab.com.
 - 4. Seton Identification Products: www.seton.com.
- B. Color: Conform to ASME A13.1.

- C. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.
- D. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.
- E. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.
- B. Prepare surfaces in accordance with Section 09900 for stencil painting.

3.02 INSTALLATION

- A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags with corrosion resistant chain.
- C. Install plastic pipe markers in accordance with manufacturer's instructions.
- D. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- F. Use tags on piping 3/4 inch diameter and smaller.
 - 1. Identify service, flow direction, and pressure.
 - 2. Install in clear view and align with axis of piping.
 - 3. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION

SECTION 13925 - FIRE SUPPRESSION SPRINKLERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Wet-pipe sprinkler system.
- B. System design, installation, and certification.
- C. Fire department connections.

1.02 REFERENCE STANDARDS

- A. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- B. NFPA 13 - Standard for the Installation of Sprinkler Systems; National Fire Protection Association; 2010.
- C. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.
 - 1. Sprinklers shall be referred to on drawings, submittals, and other documentation, by the sprinkler identification or model number as specifically published in the appropriate agency listing or approval. Trade names or other abbreviated designations shall not be allowed
- C. Shop Drawings:
 - 1. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.
 - 2. Submit shop drawings to authority having jurisdiction for approval. Submit proof of approval to Architect.
- D. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.
- E. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds specified requirements and code requirements.
- F. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Sprinklers: Type and size matching those installed, in quantity required by referenced NFPA design and installation standard.
 - 2. Sprinkler Wrenches: For each sprinkler type.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of referenced design and installation standard on site.
- B. Conform to UL requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in

this section with minimum three years documented experience.

- D. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience approved by manufacturer.
- E. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Sprinklers, Valves, and Equipment:
 - 1. Victaulic Company: www.victaulic.com.
 - 2. Tyco Fire Suppression & Building Products: www.tyco-fire.com.
 - 3. Viking Corporation: www.vikinggroupinc.com.

2.02 SPRINKLER SYSTEM

- A. Sprinkler System: Provide coverage for entire building.
- B. Occupancy: Ordinary hazard, Group 1; comply with NFPA 13.
- C. Water Supply: Determine volume and pressure from water flow test data.
- D. Interface system with building fire and smoke alarm system.
- E. Provide fire department connections where indicated.
- F. Storage Cabinet for Spare Sprinklers and Tools: Steel, located adjacent to alarm valve.

2.03 SPRINKLERS

- A. Sprinklers shall be glass bulb type, with hex-shaped wrench boss integrally cast into the sprinkler body.
 - 1. Wrenches shall be provided by the sprinkler manufacturer that directly engage the hex-shaped wrench boss integrally cast in the sprinkler body. Basis of Design: Victaulic FireLock Series.
 - 2. Sprinklers with rubber-O-rings are not permitted
- B. Suspended Ceiling Type: Semi-recessed pendant type with matching push on escutcheon plate.
 - 1. Response Type: Quick.
 - 2. Coverage Type: Standard.
 - 3. Finish: Brass.
 - 4. Escutcheon Plate Finish: Enamel, color as selected.
 - 5. Product: Victaulic Model V27.
- C. Storage Sprinklers: Concealed upright type with guard.
 - 1. Response Type: Standard.
 - 2. Finish: Chrome plated.
 - 3. Product: Victaulic Model V38 and V39.
- D. Guards: Finish to match sprinkler finish.
- E. Escutcheons and guards shall be listed, supplied, and approved for use with the sprinkler by the sprinkler manufacturer

2.04 PIPING SPECIALTIES

- A. Wet Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, aluminum-bronze clapper with elastomer seal or rubber faced clapper to automatically actuate water motor alarm and electric alarm, with pressure retard chamber and variable pressure trim; with test and drain valve. Alarm valve internal components shall be replaceable without removing the valve from the installed position.
 - 1. Product: Victaulic Series 751.
- B. Fire Department Connections:
 - 1. Type: Free standing type with ductile iron pedestal red enamel finish.
 - 2. Outlets: Two way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.
 - 3. Drain: 3/4 inch automatic drip, outside.
 - 4. Label: "Sprinkler - Fire Department Connection".
 - 5. At the low-point near each fire department connection, install a 90-degree elbow with drain connection to allow for system drainage to prevent freezing. Basis of Design: Victaulic #10-DR

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install in accordance with referenced NFPA design and installation standard.
- B. Install equipment in accordance with manufacturer's instructions.
- C. Provide approved double check valve assembly at sprinkler system water source connection.
- D. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.
- E. Locate outside alarm gong on building wall as indicated.
- F. Place pipe runs to minimize obstruction to other work.
- G. Place piping in concealed spaces above finished ceilings.
- H. Center sprinklers in one direction only in ceiling tile with location in other direction variable, dependent upon spacing and coordination with ceiling elements.

1. The Victaulic Aquaflex multiple-use open-gate stainless steel flexible drop system may be used to properly locate sprinkler heads. The drop system shall be supplied with required supporting members and bracing
 - I. Sprinkler bulb protector shall be removed by hand after installation. Do not use tools or any other device(s) to remove the protector that could damage the bulb in any way.
 - J. Do not install sprinklers that have been dropped, damaged, or show a visible loss of fluid. Never install sprinklers with cracked bulbs.
 - K. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.
 - L. Flush entire piping system of foreign matter.
 - M. Install guards on sprinklers where indicated.
 - N. Hydrostatically test entire system.
 - O. Require test be witnessed by Fire Marshal.

END OF SECTION

SECTION 13975 - STANDPIPES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Standpipe system.
- B. Fire department connection.

1.02 REFERENCE STANDARDS

- A. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- B. NFPA 14 - Standard for the Installation of Standpipe and Hose Systems; National Fire Protection Association; 2010.
- C. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog sheet for equipment indicating rough-in size, finish, and accessories.
- C. Shop Drawings: Indicate supports, components, accessories, and sizes.
 - 1. Submit shop drawings and product data to Owner's insurance underwriter for approval.
 - 2. Submit proof of approval to Architect.
- D. Project Record Documents: Record actual locations of components.
- E. Operation Data: Include manufacturer's data.
- F. Maintenance Data: Include servicing requirements and test schedule.
- G. Certificates: Provide certificate of compliance from authority having jurisdiction indicating approval of field acceptance tests.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Hose Nozzles: One.
 - 3. Extra Hoses: One.

PART 2 PRODUCTS

2.01 FIRE DEPARTMENT CONNECTION

- A. Type: Flush mounted wall type with brass finish.
- B. Outlets: Two way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.
- C. Drain: 3/4 inch automatic drip, outside.
- D. Label: "Standpipe - Fire Department Connection".

END OF SECTION