

**SECTION 22 05 53**  
**IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT**

**PART 1 - GENERAL**

**1.1 STIPULATIONS**

- A. The specifications sections "General Conditions to the Construction Contract", "Special Conditions" and "Division 01 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

**1.2 SUMMARY**

- A. Section Includes the following Plumbing identification materials and devices:
  - 1. Equipment labels.
  - 2. Warning signs and labels.
  - 3. Pipe labels.
  - 4. Valve tags.
  - 5. Warning tags.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Samples: For color, letter style, and graphic representation required for each identification material and device.
- C. Equipment Label Schedule: Include a listing of all equipment labeled with the proposed content for each label. Reproduce on standard-size bond paper. Tabulate Equipment identification labels list with numbers, system type and abbreviations as shown on the labels and the specific building area or room location included. Include special notes and references to specific equipment variations, maintenance, operations and emergency services and shutdown. Besides providing a mounted enclosed framed copies in the Maintenance Office area, furnish copies for the maintenance manuals.
- D. Valve numbering scheme: The numbering scheme shall be in sequence with each system labeled and identified separately and differently.
- E. Valve Tag Schedules: For each piping system, include a listing of all valves labeled and tagged with a coordinated numbering scheme. Reproduce the schedule on standard-size bond paper. Tabulate valve identification list with tag numbers, system type and abbreviations as shown on the valve tags with the specific building area or room location included. Include special notes and references to specific or special valve variations, functions, operations, maintenance, and emergency services or shutdown procedures. Besides providing a mounted enclosed framed copies in the Maintenance Office area, furnish copies for the maintenance manuals.

## **PART 2 - PRODUCTS**

### **2.1 EQUIPMENT LABELS**

- A. Metal Labels for Equipment:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Brimar Industries, Inc.
    - b. Champion America.
    - c. Craftmark Pipe Markers.
    - d. Seton Identification Products.
    - e. Or equal as approved by the Professional.
- B. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8inch thick, with predrilled holes for attachment hardware.
- C. Letter Color: Black.
- D. Background Color: White.
- E. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
- F. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
- G. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
- H. Fasteners: Stainless-steel rivets or self-tapping screws.
- I. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- J. Label Content: Include equipment's Drawing designation or unique equipment number, drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.
- K. Equipment Label Schedule: For each item of equipment to be labeled, on 8-1/2-by-11-inch bond paper. Tabulate equipment identification number, and identify Drawing numbers where equipment is indicated (plans, details, and schedules) and the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.

### **2.2 WARNING SIGNS AND LABELS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Brimar Industries, Inc.
  - 2. Champion America.
  - 3. Craftmark Pipe Markers.

4. Seton Identification Products.
  5. Or equal as approved by the Professional.
- B. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8" inch thick, and having predrilled holes for attachment hardware.
- C. Letter and Background Color: Yellow background with black lettering or colors and designs otherwise recommended by ASME A13.1.
- D. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
- E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
- F. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel rivets or self-tapping screws.
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Label Content: Include caution and warning information plus emergency notification instructions.

## **2.3 PIPE LABELS**

- A. Piping identification labels.
- B. Do not use pipe labels or plastic tapes for bare pipes conveying fluids at temperatures of 125 degrees F or higher.
- C. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Brimar Industries, Inc.
  2. Champion America.
  3. Craftmark Pipe Markers.
  4. Seton Identification Products.
  5. Or equal as approved by the Professional.
- D. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction.
- E. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.
- F. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- G. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; also include pipe size and an arrow indicating flow direction.
1. Flow-Direction Arrows: Integral with piping-system service lettering to accommodate both directions or as separate unit on each pipe label to indicate flow direction.

2. Lettering Size: Size letters according to ASME A13.1 for piping or at least 1/2 inch for viewing distances up to 72 inches and proportionately larger lettering for greater viewing distances.

## **2.4 VALVE TAGS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Brimar Industries, Inc.
  2. Champion America.
  3. Craftmark Pipe Markers.
  4. Seton Identification Products.
  5. Or equal as approved by the Professional.
- B. Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch sequenced numbers.
  1. Tag Material: Brass, 0.032-inch, stainless steel, 0.025-inch or aluminum, 0.032-inch minimum thickness, and having predrilled or stamped 5/32-inch hole for attachment hardware.
  2. Tag Shape and Size: Round – 2" diameter minimum.
  3. Fasteners: Stainless Steel small-link chain or S-hook.
- C. Valve Schedules: For each piping system, on 8-1/2-by-11-inch bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.
  1. Valve-tag schedule shall include operation and maintenance data.
  2. Valve Schedule Display Glazed Framing: Glazed display frame for removable mounting on masonry walls for each page of valve schedule. Extruded aluminum frame with AS ASTM C 1036, Type I, Class 1, Glazing quality B, 2.5-mm, single-thickness glass protective glazing. Include mounting hardware and screws.
- D. Access Panel Markers: 1/16-inch- thick, engraved plastic-laminate markers, with abbreviated terms and numbers corresponding to concealed valve. Provide 1/8-inch center hole for attachment.

## **2.5 WARNING TAGS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Brimar Industries, Inc.
  2. Champion America.
  3. Craftmark Pipe Markers.
  4. Seton Identification Products.
  5. Or equal as approved by the Professional.
- B. Description: Preprinted or partially preprinted accident-prevention tags of plasticized card stock with matte finish suitable for writing.

1. Size: 3 by 5-1/4 inches minimum or as otherwise indicated.
2. Fasteners: Stainless Steel grommet and wire.
3. Nomenclature: Large-size primary caption such as "DANGER," "CAUTION," or "DO NOT OPERATE."
4. Color: Safety yellow background with black lettering.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

### **3.2 GENERAL INSTALLATION REQUIREMENTS**

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

### **3.3 EQUIPMENT LABEL INSTALLATION**

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.

### **3.4 PIPE LABEL INSTALLATION**

- A. Piping Color Coding: Painting of piping is specified in Section 099123 "Interior Painting."
- B. Pipe Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
  1. Near each valve and control device.
  2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
  3. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
  4. At access doors, manholes, and similar access points that permit view of concealed piping.
  5. Near major equipment items and other points of origination and termination.
  6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
  7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.
- C. Directional Flow Arrows: Arrows shall be used to indicate direction of flow in pipes, including pipes where flow is allowed in both directions.

D. Pipe Label Color Schedule:

1. Domestic Water Piping
  - a. Background: Safety green.
  - b. Letter Colors: White.
2. Sanitary, Waste and Condensate Drainage Piping:
  - a. Background Color: Safety black or Safety white.
  - b. Letter Color: Black or White.

### **3.5 VALVE-TAG INSTALLATION**

- A. Install tags on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, shutoff valves, faucets, convenience and lawn-watering hose connections, and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.
- B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following subparagraphs:
  1. Valve-Tag Size and Shape:
    - a. Cold Water: 2 inches, round.
    - b. Hot Water: 2 inches, round.
    - c. Other Piping Systems: 2 inches, round.
  2. Valve-Tag Colors: (Metal Tag –Natural or Colored)
    - a. Cold Water: Natural or Safety green.
    - b. Hot Water: Natural or Safety green.
  3. Letter Colors: (Stamped or Engraved)
    - a. Cold Water: Black or White.
    - b. Hot Water: Black White.

### **3.6 WARNING-TAG INSTALLATION**

- A. Write required message on, and attach warning tags to, equipment and other items where required.

**END OF SECTION**