

SECTION 23 05 53
IDENTIFICATION for HVAC PIPING and EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Nameplates
- B. Tags
- C. Stencils
- D. Pipe Markers
- E. Pipe Color Coding

1.2 REFERENCES

- A. ASME A13.1 - Scheme for the Identification of Piping Systems

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Submit list of wording, symbols, letter size, and color-coding for mechanical identification.
- C. Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturer's catalog literature for each product required.
- E. Manufacturer Installation Instructions: Indicate special procedures and installation.

1.4 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of section 01 77 00.
- B. Record the actual locations of the tagged valves.

PART 2 PRODUCTS

2.1 NAMEPLATES

- A. Label Description: Laminated three-layer plastic with engraved black letters on light contrasting background color.

2.2 TAGS

- A. Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color, tag size minimum 1½" diameter.
- B. Metal Tags: Brass with stamped letters; tag size minimum 1½" diameter with smooth edges.
- C. Chart: Provide a typewritten letter size list in anodized aluminum frame.

2.3 STENCILS

- A. Stencils: With clean cut symbols and letters of following size:

OUTSIDE DIAMETER OF INSULATION OR PIPE	LENGTH OF COLOR FIELD	SIZE OF LETTERS
¾" - 1¼"	8"	½"
1½" - 2"	8"	¾"
2½" - 6"	12"	1-1/4"
8" - 10"	24"	2½"
Over 10"	32"	3½"
Ductwork and Equipment	---	2½"

- B. Stencil Paint: As specified in Section 09 91 13 or 09 91 23, semi-gloss enamel, with colors conforming to ASME A13.1.

2.4 PIPE MARKERS

- A. Color: Conform to ASME A13.1.

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- B. Plastic Pipe Markers:
 - 1. Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering.
 - 2. Minimum information indicating direction of flow arrow and identification of fluid conveyed.
 - C. Plastic Tape Pipe Markers: Flexible vinyl film tape with pressure sensitive adhesive backing and printed markings.
 - D. Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6" wide by 4-mil thick, manufactured for direct burial service.
- 2.5 COLOR STICK-ONS ON CEILING GRID
- A. Install self-adhesive color $\frac{3}{4}$ " squares on ceiling grid or on access panels to designate locations of concealed mechanical and HVAC equipment. Color code as follows:
 - 1. Green - Plumbing water valves
 - 2. Blue – HVAC equipment
 - 3. Red – HVAC piping specialties, valves, gauges, etc.
 - B. Self-adhesive color $\frac{3}{4}$ " diameter dots shall be installed on ceiling grid or on access panels to designate locations of concealed equipment color coded as follows:
 - 1. Purple – HVAC energy management systems and HVAC control systems.
 - 2. Colors for other trades - see Section 26 05 53.
- 2.6 PIPE COLOR CODING
- A. Paint all exposed HVAC piping in finished areas the appropriate color in accordance with specification sections 09 91 13 or 09 91-23 Painting, 23 05 00 Mechanical, 22 10 00 Plumbing Piping, 21 00 00 Fire Suppression.
 - B. The piping colors code is as follows:
 - 1. Chilled Water Supply Pipe – Light Blue with Flow Arrows
 - 2. Chilled Water Return Pipe – Dark Blue with Flow Arrows
 - 3. Glycol Water Supply & Return – Dark Blue with Flow Arrows
 - 4. Condenser Water Supply Pipe – Light Green with Flow Arrows
 - 5. Condenser Water Return Pipe – Dark Green with Flow Arrows
 - 6. Fire Sprinkler Piping – Red
 - 7. Gas Piping – Yellow
 - 8. Compressed Air - Orange

PART 3 EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive adhesive for identification materials.
- B. Prepare surfaces in accordance with Section 09 91 13 or 09 91 23 for stencil painting.

3.2 INSTALLATION

- A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive.
 - 1. Apply with sufficient adhesive to ensure permanent adhesion.
 - 2. Locate nameplate on unit so that can be clearly identified upon entering mechanical room or roof, minimum size of letters: 1.5"
- B. Install tags with corrosion resistant chain.
- C. Apply stencil painting in accordance with Section 09 91 13 or 09 91 23.
- D. Install plastic pipe markers in accordance with manufacturer's instructions.
- E. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

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- F. Provide flow arrows indicating direction of designed chilled water flow within pipe at each valve, and provide pipe identification and chilled water flow direction on each side of wall penetration
- G. Install underground-metalized plastic pipe markers 6 to 8" below finished grade, directly above buried pipe.
- H. Identify air handling units, fans, pumps, chillers, water heaters, heat transfer equipment, tanks, and water treatment devices with plastic nameplates.
 - 1. May identify small devices such as in-line pumps with tags.
- I. Identify control panels and major control components outside panels with plastic nameplates.
- J. Identify thermostats relating to terminal boxes or valves with stick-on laminated paper labels to be located on the inside cover.
 - 1. Specify AHU number, terminal box number, and EMCS controller address keyed to control schematic.
- K. Identify valves in main and branch piping with tags.
- L. Identify air terminal units and valves with numbered tags.
- M. Tag automatic controls, instruments, and relays, similar to thermostats in item I.
 - 1. Key to control schematic
- N. Identify piping, concealed or exposed, with stenciled painting.
 - 1. Use tags on piping $\frac{3}{4}$ " diameter and smaller.
 - 2. Identify service, flow direction, and pressure.
 - 3. Install in clear view and align with axis of piping.
 - 4. Locate identification not to exceed 20' 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.
 - 5. Paint gas-piping yellow for the entire length of the piping above ground including next to regulator.
- O. Provide color-coded ceiling stick-on type to locate valves or dampers above T-bar type panel ceilings.
 - 1. Locate stick-on, on ceiling grid T-bars closest to equipment.
- P. Paint all exposed mechanical piping with appropriate color.

END OF SECTION