

SECTION 15075
MECHANICAL IDENTIFICATION

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provisions of the Contract, including General and Supplementary Conditions, and Division 1 General Requirements, apply to work specified in this Section.
- B. Requirements of Section 15050, "Basic Mechanical Materials and Methods" apply to work specified in this Section.

1.02 SUMMARY

- A. Work Included: Labeling and identifying mechanical systems and equipment.

1.03 SUBMITTALS

- A. Product data, including samples of color, lettering style, and other graphic representation required for each identification material and device.

1.04 QUALITY ASSURANCE

- A. Comply with USM IDAT requirements.
- B. Comply with ASME A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

1.05 SEQUENCE AND SCHEDULING

- A. Install identifying devices prior to installing acoustical ceilings and similar concealment.
- B. Install identifying devices after covering and painting are completed.

1.06 OWNERS INSTRUCTION

- A. Comply with the requirements of 01770; "Closeout Procedures."
- B. Provide a copy of the valve tag schedules for inclusion at the front of the O & M binder.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Identifying Devices and Labels: Subject to compliance with requirements, provide products by one of the following:
 - 1. Brady: Signmark Div.; W.H. Brady Co.

2. Seton Name Plate Co.

2.02 IDENTIFYING DEVICES AND LABELS

- A. General: Provide manufacturer's standard products of categories and types required for each application as referenced in other Division 15 Sections. Where more than one type is specified for listed application, selection is Installer's option, but provide single selection for each product category.
- B. Equipment Nameplates: Metal nameplate with operational data engraved or stamped, permanently fastened to equipment.
 1. Data: Manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data.
 2. Location: An accessible and visible location.
- C. Snap-On Plastic Pipe Markers: Manufacturer's standard preprinted, semi-rigid snap-on, color-coded pipe markers, conforming to ASME A13.1.
- D. Plastic Duct Markers: Manufacturer's standard laminated plastic, color coded duct markers. Conform to following color code:
 1. Green: Cold air.
 2. Yellow: Hot air.
 3. Yellow/Green: Supply air.
 4. Blue: Exhaust, outside, return, and mixed air.
 5. For hazardous exhausts, use colors and designs recommended by ASME A13.1.
 6. Nomenclature: Include following:
 - a. Direction of air flow.
 - b. Duct service (supply, return, exhaust, etc.).
 - c. Duct origin (from).
 - d. Duct destination (to).
 - e. Design cfm.
- E. Engraved Plastic-Laminate Signs: ASTM D 709, Type I, cellulose, paper-base, phenolic-resin-laminate engraving stock; Grade ES-2, black surface, black phenolic core, with white (letter color) melamine subcore, except when other colors are indicated.
 1. Fabricate in sizes required for message.
 2. Engraved with engraver's standard letter style, of sizes and with wording to match equipment identification.
 3. Punch for mechanical fastening.
 4. Thickness: 1/16 inch (1.5 mm) for units up to 20 square inches (13,000 sq. mm) or 8 inches (200 mm) long; 1/8 inch (3 mm) for larger units.
 5. Fasteners: Self-tapping stainless-steel screws or contact-type permanent adhesive.
- F. Plastic Equipment Markers: Laminated-plastic, color-coded equipment markers. Conform to following color code:
 1. Green: Cooling equipment and components.
 2. Yellow: Heating equipment and components.

3. Yellow/Green: Combination cooling and heating equipment and components.
 4. Brown: Energy reclamation equipment and components.
 5. Blue: Equipment and components that do not meet any of the above criteria.
 6. For hazardous equipment, use colors and designs recommended by ASME A13.1.
 7. Nomenclature: Include following, matching terminology on schedules as closely as possible:
 - a. Name and plan number.
 - b. Equipment service.
 - c. Design capacity.
 - d. Other design parameters such as pressure drop, entering and leaving conditions, and rpm.
 8. Size: Approximately 2-1/2 by 4 inches (65 by 100 mm) for control devices, dampers, and valves; and 4-1/2 by 6 inches (115 by 150 mm) for equipment.
- G. Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch sequenced numbers. Provide a 5/32-inch hole for fastener.
1. Material: 3/32-inch-thick plastic laminate having two black surfaces and a white inner layer.
 2. Size: 1-1/2-inches diameter, except as otherwise indicated.
- H. Valve Tag Fasteners: Brass chain (wire link or beaded type) or brass S-hooks.
- I. 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.
- J. Valve Schedule Frames: Glazed display frame, with screws for removable mounting on solid walls for each page of valve schedule.
1. Frame: Rigid plastic.
 2. Glazing: 2.5 mm, single thickness, flat transparent acrylic.
- K. Lettering and Graphics: Coordinate names, abbreviations, and other designations used in mechanical identification, with corresponding designations indicated. Use numbers, lettering and wording indicated for proper identification and operation/maintenance of mechanical systems and equipment.

PART 3 - EXECUTION

3.01 LABELING AND IDENTIFYING

- A. Piping Systems: Install pipe markers on each system. Include arrows showing normal direction of flow.
1. Plastic markers, with application systems. Install on pipe insulation segment where required for un-insulated pipes.

2. Locate pipe markers wherever piping is exposed in finished spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums), and exposed exterior locations as follows:
 - a. Near each valve and control device.
 - b. Near each branch, excluding short take-offs for fixtures and terminal units. Mark each pipe at branch, where flow pattern is not obvious.
 - c. Near locations where pipes pass through walls, floors, ceilings, or enter inaccessible enclosures.
 - d. At access doors, manholes, and similar access points that permit view of concealed piping.
 - e. Near major equipment items and other points of origination and termination.
 - f. Spaced at a maximum of 30-foot (15m) intervals along each run. Reduce intervals to 25 feet (7.5 m) in congested areas of piping and equipment.
 - g. On piping above removable acoustical ceilings, except omit intermediately spaced markers.

B. Duct Systems: Identify air supply, return, exhaust, intake, and relief ducts with duct markers, showing duct system service and direction of flow.

1. Location: In each space where ducts are exposed or concealed by removable ceiling system, locate signs near points where ducts enter into space and at maximum intervals of 50 feet (15 m).

C. Equipment: Install engraved plastic laminate sign on or near each major item of mechanical equipment.

1. Lettering Size: Minimum 1/4-inch (6mm) -high lettering for name of unit where viewing distance is less than 2 feet (0.6 m), 1/2-inch (13mm) -high for distances up to 6 feet (1.8 m), and proportionately larger lettering for greater distances. Provide secondary lettering 2/3 to 3/4 of size of principal lettering.
2. Text of Signs: Provide text to distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to name of identified unit.

D. Valve Tags: Install valve tag on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, plumbing fixture supply stops, faucets, convenience and lawn-watering hose bibbs, and roughing-in connections of end-use fixtures and units. List tagged valves in valve schedule.

1. Install mounted valve schedule in the existing penthouse mechanical equipment room adjacent to existing schedules.
2. Number new valves in continuing sequence following existing valve schedule.

3.02 ADJUSTING AND CLEANING

A. Relocate identifying devices which become visually blocked by work of this Division or other Divisions.

- B. Clean identifying devices obscured by dirt. Use cleaning methods recommended by device manufacturer.
- C. Prior to inspection at time of Substantial Completion, check all identification devices and replace devices which are missing or damaged.

END OF SECTION 15075