

**SECTION 15074  
IDENTIFICATION AND LABELING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

**1.2 SUMMARY**

- A. This Section includes identification and labeling of piping systems.

**1.3 REFERENCES**

- A. American National Standards Institute (ANSI)
  - 1. ANSI A13.1-81, Scheme for Identification of Piping Systems (R 1996).
- B. National Electrical Manufacturers' Association (NEMA)
  - 1. NEMA Z535.1-91, Safety Color Code (R 1998).

**1.4 DEFINITIONS**

- A. Exposed Piping: Piping which is normally visible or may be visible after removal of covers or panels designed to provide access for inspection or maintenance.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Labels and Banding Materials: Weather-resistant, service rating for outdoor service, -20 deg. F (-28 deg. C) to 220 deg. F (104 deg. C) service temperature range, compatible with specified operating environment, low-halide content (for stainless steel application only).

**2.2 LABEL FABRICATION**

- A. Fabricate labels with label format per ANSI A13.1.
- B. Fabricate labels with background and letter colors per NEMA Z535.1.
- C. Fabricate labels of type compatible with operational and service conditions.
- D. Fabricate adhesive film labels with one or more adhesive-backed layers.
- E. Fabricate system labels for piping systems common to sites and some piping systems unique to specific sites using approved piping label attributes listed in Table 1.
- F. Fabricate labels with text letter heights per NEMA Z535.1 as follows:

Pipe or covering outside diameter (in.)	Letter height (in.)
Up to 1/2	1/2
1/2 to 2	3/4
2 1/2 to 6	1 1/4

Pipe or covering outside diameter (in.)	Letter height (in.)
8 to 10	2 1/2
10 and up	3 1/2

- G. Fabricate flow direction labels of same background color as system labels.
- H. Supplemental Labels
  1. Fabricate supplemental pressure and temperature labels of same background color, letter color, and letter height as system labels.
  2. Fabricate supplemental pressure labels to numerically indicate line operating pressure and end with letters PSIG.
  3. Fabricate supplemental temperature labels numerically indicate normal operating temperature and end with symbol F.

### PART 3 - EXECUTION

#### 3.1 LABEL INSTALLATION

- A. Provide labels on straight sections of pipelines inside buildings at maximum intervals of 40 ft.
- B. Provide labels on straight sections of pipelines outside buildings at maximum intervals of 100 ft.
- C. Provide labels on branch lines not more than 5 ft from main header.
- D. Provide labels on lines that penetrate walls or floors on each side of penetration not more than 5 ft from penetration.
- E. Provide labels on banks of piping in a row, side by side, for ease of reference.
- F. Provide labels with label format per ANSI A13.1.
- G. Provide labels with approved piping label attributes as shown in Table 1.
- H. Provide labels with background colors, letter colors, and letter heights per NEMA Z535.1.
- I. Provide labels of type compatible with operational and service conditions.
- J. On bare pipe, provide manufacturer's standard adhesive film labels or band-on labels. Stenciling may be used on services approved by Facilities Manager.
- K. On insulated pipe, provide thin adhesive film labels, snap-on labels, or band-on labels.
- L. Provide flow direction labels adjacent to system label to indicate the direction of flow.
- M. Supplemental Labels
  1. Provide supplemental pressure labels on gaseous service piping. Provide supplemental pressure labels on liquid service piping operating at 100 psig or greater.
  2. Provide supplemental temperature labels on service piping operating at 120 deg. F or greater.
- N. If available, use portable labeling system with a single label displaying required information.

### 3.2 LABEL APPLICATION

- A. Ensure that surface to be labeled is free of scale, dirt, dust, grease, and moisture. Ensure that mastic coatings on insulated lines are completely dry before applying labels.
- B. Firmly press label in place. Rub thoroughly, particularly along edges, until adhesive bonds.
- C. Apply banding tape or flow-arrow tape over abutting edges of adhesive labels when multiple labels are required for supplemental information.
- D. For fire protection water piping, apply labels to piping in aboveground, concealed areas only.

Table 1. Label Attributes

System Name	Background Color	Letter Color	Section Number
Compressed Air (CA)	Blue	White	15112
Natural Gas (NG)	Yellow	Black	15108
Sanitary Sewer (SS)	Green	White	15109
Storm Drain (SD)	Green	White	15109
Process (waste) Drains Outside of Buildings (PD)	Yellow	Blue	15110
Process Drain (PD) (General process waste drains: such as, DI water system drains & HVAC cooling-coil condensation drains).	Yellow	Blue	15111
Acid Waste Drain (PD)	Yellow	Black	15111
Low Level Liquid Waste (LLLW) (activated drains)	Yellow	Black	15067
<u>Water services:</u>			
Chilled Water Supply (CHWS)	Green	White	15106
Chilled Water Return (CHWR)	Green	White	15106
Condenser Water Supply (CNDS)	Green	White	15106
Condenser Water Return (CNDR)	Green	White	15106
Tower Water Supply (TWS)	Green	White	15106
Tower Water Return (TWR)	Green	White	15106
Heating Water Supply (HWS)	Green	White	15106
Heating Water Return (HWR)	Green	White	15106
Process (Cold) Water (PW)	Green	White	15106
Sanitary Water Cold (Potable cold water) (SWC)	Green	White	15103
Sanitary Water Hot (Domestic hot water) (SWH)	Green	White	15103
Emergency Shower (ES) water shall be (SWC)	Green	White	15103
Technical Equip. Cooling Water Supply (DIS)	Green	White	15104
Technical Equip. Cooling Water Return (DIR)	Green	White	15104
Refrigerant Suction (RS)	Blue	White	15125
Refrigerant Liquid (RL)	Blue	White	15125

**END OF SECTION 15074**