SECTION 210553 – IDENTIFICATION FOR FIRE PROTECTION SYSTEMS

Latest Edition: 08-10-2024 See Underlined Text for Edits.

(Engineer shall edit specifications and blue text in header to meet project requirements. This includes but is not limited to updating Equipment and/or Material Model Numbers indicated in the specifications and adding any additional specifications that may be required by the project. Also turn off all "Underlines".)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section and all other sections of Division 21.

1.2 SUMMARY

A. This section includes the requirements for identification of fire protection piping, valves, pumps and related equipment using the following:

1. Equipment labels.
2. Signs.
3. Pipe labels.
4. Valve tags and schedule.
5. Ceiling markers.
6. Hydraulic design information sign.
7. General information sign.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product specified include the following:

1. Samples: For color, letter style, and graphic representation required for each identification material and device.
2. Data: Installation details, material descriptions, dimensions of individual components for each type of tag and/or sign.
3. Equipment Label Schedule: Submit a sample equipment label schedule for each fire protection system. Include a list of all equipment to be labeled, the proposed content for each label and the location in an "xl" file format.
4. Valve Tag Schedule: Submit a sample valve tag schedule for each fire protection system. Include valve tag designation, name and location in an "xl" file format.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Include a copy of the approved submittal for each product and material along with any applicable maintenance data in the project operation and maintenance manual .

B. Equipment Label Schedule: Include a complete equipment label schedule for each fire protection system. Include equipment tag name, designation, location, and the operation and maintenance manual, in an "xl" electronic file format.

C. Valve Tag Schedule: Include a complete valve tag schedule for each fire protection system. Include the system identification, valve number, location, and the operation and maintenance manual, in an "xl" electronic file format.

1.5 COORDINATION

A. Coordinate installation of fire protection system identification with covering and painting of other surfaces.

B. Coordinate installation of fire protection system identification with locations of access panels and doors.

C. Install fire protection system identification before installing acoustical ceilings and similar concealment.

1.6 WARRANTY/GUARENTEE

A. See Division 21 Specification Section "Basic Fire Protection Requirements" for warranty and guarantee requirements.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

A. Labels, Signs and Tags: All labels, signs and tags shall conform to ANSI/ASME A 13.1, OSHA and NFPA requirements for letter/color combinations.

B. Acceptable Manufacturers: Subject to compliance with requirements, provide fire protection identifications material from one (1) of the following manufacturers or approved equivalent:

1. Seton Fire Protection Signage
2. Craft Mark Fire Protection Signage
3. Reliable
4. Tyco
5. Kroy

2.2 METAL EQUIPMENT LABELS

A. Metal Equipment Labels:

1. Metal equipment labels required by NFPA shall be affixed securely to all fire-suppression system equipment.
2. Material and Thickness: Anodized aluminum, 0.032 inch thick, with predrilled holes for attachment hardware.
3. Letter Color: Engraved letters in natural aluminum color.
4. Background Color: Screen printed fade resistant red ink.
5. Minimum Label Size: Length and width vary for required label content, but not less than five (5) inch by seven (7) inch.
6. Minimum Letter Size:
   a. One quarter (1/4) inch for name of units if viewing distance is less than twenty four (24) inches,
   b. One half (1/2) inch for viewing distances up to seventy two (72) inches, and proportionally larger lettering for greater viewing distances.
   c. Include secondary lettering two thirds (2/3) to three fourths (3/4) the size of principal lettering.
7. Fasteners: Stainless-steel rivets or self-tapping screws.
8. Sign shall be firmly affixed to the sprinkler equipment and marked accordingly for what they are serving.
9. Magic markers, crayons, pencil, embossed tape, etc. shall not be used.
10. Customization may be required.

2.3 SIGNS FOR FIRE PROTECTION SYSTEMS

A. Identification signs shall be provided as required by NFPA 13 and NFPA 14.

B. Signs shall be provided with engraved laminated red on white finish phenolic nameplate with one quarter (1/4) inch high etched white letters and beveled edges. The signs shall be secured to the sprinkler system firmly by a chain. Some signs listed below may need to be customized to meet the specifications.

1. General Information Sign: Provide a general information sign as required by NFPA 13.
2. Hydraulic Calculation Sign: Provide hydraulic calculation sign for each hydraulically designed area as required by NFPA 13.
3. Exterior Fire Department Standpipe Connection Sign: Provide a exterior fire department standpipe sign labeled as “AUTOMATIC SPRINKLER” or “AUTOMATIC SPRINKLER AND STANDPIPE” with raised letters at least one (1) inch in size cast on the face.
4. Inspector’s Test Connection Signs: Inspector’s Test Connection signs shall have a sign stating, “INSPECTORS TEST”.
5. Exterior Drain Location Signs: Exterior Drain location signs shall have a sign stating, “SPRINKLER DRAIN”.
6. Riser Drain Signs: Riser Drain shall have a sign stating, “RISER DRAIN” or “DRAIN”.

7. Auxiliary Drain Signs: Auxiliary Drain signs shall have a sign stating "AUXILIARY DRAIN".
8. Combined Inspector's Test and Drain Sign: Combined Inspector's Test and Drain shall have sign stating: "TEST & DRAIN"
9. Sprinkler System Control Valve Sign: All sprinkler system control valves shall have an identification sign stating, "CONTROL VALVE". Sign shall identify the portion of the building served or controlled, shall note that the valve must be kept open, and shall have a blank space for notification information.

C. Minimum Label Size: Length and width vary for required label content, but not less than six (6) inch by two (2) inch.

D. Minimum Letter Size:

1. One quarter (1/4) inch for name of units if viewing distance is less than twenty four (24) inches.
2. One half (1/2) inch for viewing distances up to seventy two (72) inches.
3. Proportionally larger lettering for greater viewing distances. Include secondary lettering two-thirds (2/3) to three-fourths (3/4) the size of principal lettering.

2.4 PIPE LABELS

A. Pipe Labels: Pretensioned, semirigid vinyl or plastic formed labels to partially cover or cover full circumference of pipe and to attach to pipe without adhesive.

1. Label Material: Comply with the following:

a. Vinyl Formed Labels:
   1) External diameters up to two (2) inches – 20 mil vinyl.
   2) External diameters two and one half (2-1/2) inch and larger – 30 mil vinyl.
b. Plastic Formed Labels: per manufacturer's recommendations

2. Small Pipes: For external diameters less than six (6) inches, provide full-band pipe markers, extending 360 degrees around pipe at each location, fastened by one of the following methods:

a. Snap-on application of pre-tensioned semi-rigid plastic pipe marker.
b. Taped to pipe with color-coded plastic adhesive tape, not less than three quarter (3/4) inch wide; full circle at both ends of pipe marker, tape lapped one and one half (1-1/2) inches.
c.

3. Large Pipes: For external diameters of six (6) inches and larger (including insulation if any), provide either full-band or strip-type pipe markers, but not

narrower than three (3) times letter height (and of required length), fastened by one of the following methods:

a. Taped to pipe with color-coded plastic adhesive tape, not less than one and one half (1-1/2) inches wide; full circle at both ends of pipe marker, tape lapped three (3) inches.
b. Strapped-to-pipe application of semi-rigid type, with manufacturer's standard stainless steel bands.

B. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on the drawings; 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:

a. Pipe Size Less Than One and One Half (1-1/2) Inch in Diameter: Label shall be at least three quarter (3/4) inches high.
b. Pipe Size One and One Half (1-1/2) Inch to Two Inch (2) in Diameter: Label shall be at least one and one half (1-1/2) inches high.
c. Pipe Size Two and One Half (2-1/2) Inch in Diameter and Larger: Label shall be at least two and one quarter (2-1/4) inches high.

C. Pipe Label Colors:

1. Background Color: Red.
2. Letter Color: White.
3. Lettering: (Wording for items B & C may need to be custom ordered)

a. “Fire Sprinkler”
b. “Dry Fire Sprinkler”
c. “Pre-Action Fire Sprinkler”
d. “Drain”
e. “Standpipe”

2.5 VALVE TAGS AND SCHEDULE

A. General: Valve tags and schedule are required to identify where valves are located and what duty the valve perform. Valve duty usually includes the following:

1. Shut off duty for service.
2. Shut off duty for back flow preventer.
3. Shut off duty for pumps
4. Drain valves.

5. Zone control valves.

B. Valve Tags:

1. Description: Stamped or engraved with one quarter (1/4) inch letters for piping system abbreviation and one half (1/2) inch numbers

a. Brass Tag Material: Brass, 0.036 inch minimum thickness, and having predrilled or stamped holes for attachment hardware.
b. Fasteners: Brass wire-link chain

2. Valve Tag Data: See chart below:

FIRE PROTECTION VALVE SERVICE	VALVE TAG DISIGNATION
Fire Protection Water Service	FPWS – #
Fire Protection Water Service – BFP	FPWSBFP – #
Isolation Valve	FPIV – #
Main Drain Valve	FPMDV – #
Zone Control Valve	FPZCV – #
Floor Drain Valve	FPFDV – #
Alarm Check Valve	FPACV – #
Dry System Valve	FPDSV – #
Low Point Drain	FPLPD – #

C. Valve Schedule: Provide a valve schedule in an "xl" file format for each fire protection piping system. Include the valve schedule file in the electronic operation and maintenance manual. File shall include the valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room, space, equipment, pipe riser), and valve duty. Also mark valves for emergency shutoff and similar special uses as required by the project.

1. Numbering System: Valves shall be in numerical order starting with one (1) for each fire protection system.

2.6 CEILING MARKERS

A. Ceiling Grid and Access Panel Markers: Provide Kroy type clear adhesive printed labels with three sixteenth (3/16) inch high letters to identify the location and type of concealed valves and sprinkler system components.

B. Ceiling Marker Data: For Fire Protection printed data shall be as follows:

1. FP Valve – Low Point Drain.

PART 3 - EXECUTION

3.1 PREPARATION

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

3.2 INSTALLATION – PIPE LABELS

A. Install or permanently fasten labels on each major item of sprinkler equipment.

B. Pipe Labels: Provide pipe labels for all exposed and concealed piping. Locate pipe labels as follows:

1. In spaces without ceilings position pipe labels so they are visible from the floor.
2. In concealed spaces above suspended ceilings and in utility shafts position pipe labels so they are visible from an access point.
3. Spaced at maximum intervals of twenty five (25) feet along each run of the sprinkler main.
4. Near the midpoint of each branch pipe serving more than one (1) sprinkler.

C. Piping Color Coding: Where indicated painting of fire protection piping shall be in compliance with the requirements in Architectural Specification Sections for “Interior Painting” and/or “High Performance Coatings”. < Coordinate with UMB – FM, Delete if not required>

3.3 VALVE TAG SCHEDULE

A. Include the valve schedule file in the electronic operation and maintenance manual.

3.4 INSTALLATION – CEILING MARKERS

A. Location: Install each ceiling marker label on the surface of the ceiling grid ‘T’ bar and/or on the frame of an access door.

3.5 INSTALLATION – SIGNS

A. Where valves are installed in concealed spaces, install the standard sign in a visible location adjacent to the control valve. Valves hidden by a suspended ceiling shall have a sign mounted on the ceiling or wall under the valve. Obtain final approval of the Architect and UMB Fire Marshal for all sign locations in finished spaces.

3.6 ADJUSTING AND CLEANING

A. Adjusting: Relocate any identification device which has become visually blocked by work of this division or other divisions.

B. Cleaning: Clean face of identification devices.

END OF SECTION 210553