

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 21 05 01 – Common Work Results – Mechanical.
- .2 Section 25 05 54 – EMCS Identification.

### **1.2 REFERENCES**

- .1 Canadian General Standards Board (CGSB):
  - 1. CAN/CGSB-1.60, Interior Alkyd Gloss Enamel.
  - 2. CAN/CGSB-24.3, Identification of Piping Systems.

### **1.3 SUBMITTALS**

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures and Section 21 05 01 Common Work Results – Mechanical.
- .2 Provide list of abbreviations for pipe and duct labeling in shop drawing submittal.
- .3 Provide pipe banding colour in shop drawing submittal.
- .4 Submit valve tag list for review prior to installing tags.

## **2 Products**

### **2.1 EXISTING IDENTIFICATION SYSTEMS**

- .1 Apply existing identification system to new Work.
- .2 Before starting Work, submit identification system for review.

### **2.2 NAMEPLATE CONSTRUCTION**

- .1 Lamicoid:
  - .1 3 mm thick laminated plastic matte finish, with square corners, letters accurately aligned and machine engraved into core.
  - .2 Use maximum of 25 letters/numbers per line.

### **2.3 PIPING SYSTEMS**

- .1 Identify contents by background color marking, stencils, and/or pictogram (as necessary) showing name and service including temperature and pressure and direction of flow using arrows to CAN/CGSB 24.3 and ANSI/ASME A13.1 - 2007, except where specified otherwise.
- .2 Where background color marking does not cover full circumference of pipe provide full circumference banding at both ends of identifier.
- .3 Background color to be full length of pipe identifier.

- .4 Identification of pipe to include Pictograms where required, to Workplace Hazardous Materials Information System (WHMIS) regulations.
- .5 Use capital block letters 32 mm high for insulated NPS 1 and insulated NPS 2 piping. Use capital block letters 64 mm high for insulated NPS 4 piping.
- .6 Provide flow arrows showing direction of water flow:
  - .1 OD of pipe or insulation less than and 152 mm: 305 mm long x 50 mm high.
  - .2 OD of pipe or insulation 203 mm and greater: 610 mm long x 75 mm high.
  - .3 Pre-manufactured banding incorporating arrows is acceptable.
- .7 Materials for background color marking, legend, arrows:
  - .1 Roll form, 0.125 mm thickness, self-adhesive, 5 mil pressure sensitive vinyl with protective over-coating, waterproof contact adhesive undercoating, suitable for ambient of 100% RH and a continuous operating temperature range between -40 to +120 degrees C and intermittent temperature of 200 degrees C.
  - .3 Waterproof and Heat Resistant Pressure Sensitive Plastic Marker Tags: for pipes and tubing 19 mm nominal and smaller.
  - .4 Acceptable Materials: SMS Coilmark, W.H. Brady Inc., Seton Name Plate Corp.
- .8 Colors and Legends:
  - .1 All pipes to be identified. Where not listed, obtain direction from the Departmental Representative.
  - .2 Color marking c/w directional flow arrows and legends for piping systems:

Contents	Background Colour	Text Colour Marking	Legend
Domestic Cold Water	Green	White	DCW
Domestic Cold Water Re-Circulation	Green	White	DCWR

## 2.4 VALVES

- .1 Plastic or vinyl indicator tags with 12 mm stamped identification data filled with black paint or coordinated with base color to ensure strong contrast.
- .2 Valves to be identified using the same system as existing.
- .3 Include flow diagrams for each system, of approved size, showing charts and schedules with identification of each tagged item, valve type, service, function, normal position, location of tagged item.
- .4 Where new valves replace valves being removed, the same identifier can be used.

## **2.5 CONTROLS COMPONENTS IDENTIFICATION**

- .1 In addition to other identification specified in this section the following requirements apply.
  - .1 Identify all control valves with plastic encased cards attached with a chain. Lettering on card to be a minimum of 4 mm high and to include the EMCS point name, point address and failsafe position (if applicable).
  - .2 EMCS cabinet associated with these devices to include a list of all device point name and point address for each device.
  - .3 Room temperature sensors to have identification specified above attached with adhesive.
- .2 Wiring
  - .1 Provide numbered tape markings on wiring at panels, junction boxes, and devices.
  - .2 Use color coded wiring throughout.
  - .3 Power wiring: identify circuit breaker panel/circuit breaker number inside each EMCS panel.
  - .4 Control system wiring conduit to be identified by painting couplings White.
  - .5 Pull and Junction Boxes
    - .1 Colored inside and out white.
    - .2 Ensure a clearly defined diagonal line from corner to corner of box cover plate separated the two (2) colors.
    - .3 Apply coloring prior to installation.

## **2.6 LANGUAGE**

- .1 Identification to be in English.

## **3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

### **3.2 TIMING**

- .1 Provide identification only after painting specified in Section 09 91 23 - Interior Painting has been completed.

### **3.3 INSTALLATION**

- .1 Perform work in accordance with CAN/CGSB-24.3 except as specified otherwise.
- .2 Provide ULC and/or CSA registration plates as required by the respective agency.
- .3 Identify all equipment and piping.

### **3.4 EXISTING PANELS AND IDENTIFICATION**

- .1 Correct existing nameplates and legends to reflect changes made during Work.

### **3.5 NAMEPLATES**

- .1 Install in conspicuous location to facilitate easy reading and identification from operating floor.
- .2 Do not paint, insulate or cover.

### **3.6 LOCATION OF IDENTIFICATION ON PIPING**

- .1 On long straight runs in open areas in Tunnels: at not more than 17 m intervals and more frequently if required to ensure that at least one is visible from any one viewpoint in operating areas and walking aisles.
- .2 Adjacent to each change in direction.
- .3 At least once in each small room through which piping or ductwork passes.
- .4 On both sides of visual obstruction and/or where the run is difficult to follow.
- .5 On both sides of separations/partitions.
- .6 Where system is installed in Tunnels/Pipe Chases/Confined Spaces, at entry and exit points and at access openings.
- .7 At beginning and end points of each run and at each piece of equipment in run.
- .8 Identification easily and accurately readable from usual operating areas and from access points.
- .10 Position of identification approximately at right angles to most convenient line of sight, considering operating positions, lighting conditions, risk of physical damage or injury and reduced visibility over time due to dust and dirt.

### **3.7 VALVES, CONTROLLERS**

- .1 Valves and operating controllers, except at plumbing fixtures, radiation, or where in plain sight of equipment they serve: Secure tags with non-ferrous (ie: SS) chains or closed "S" hooks.
- .2 Install one copy of flow diagrams, valve schedules mounted in frame behind non-glare glass where directed by the Departmental Representative. Provide one copy (reduced in size if required) in each operating and maintenance manual.
- .3 Number valves in each system consecutively.

**END OF SECTION**