

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Standard Piping Signage Designation
- .2 ANSI 13.1 Scheme for Identification of Piping Systems.

1.2 **Coordination Requirements**

- .1 Coordinate with UBC Facilities
- .2 Coordinate with other design disciplines.
- .3 Refer to the University's standard designators for systems and components.

1.3 **Description**

- .1 Identification of mechanical systems and components in all University buildings, facilities and tunnels.
- .2 The identification system is composed primarily of nameplates, labels, tags and stenciled lettering.

2.0 **MATERIAL AND DESIGN REQUIREMENTS**

2.1 **Identification Logic**

- .1 Identify each system and system component according to the nomenclature used on the drawings and specifications. Identification to be consistent throughout the project.
- .2 When identifying systems and components in existing buildings, the new items shall be numbered sequentially with existing systems. Where possible include the zone or building area serviced by each system.
- .3 In new buildings (or full scale renewals), all mechanical equipment shall be tagged with a two or three letter equipment description, followed by the floor number (of the physical location of the equipment), followed by the indexed number. Examples:
 - .1 AHU-B2-03 is the third air handler located on level B2
 - .2 FC-04-16 is the sixteenth fancoil on level four
- .4 Special tagging requirements exist for fumehoods, associated fans and starters. Please coordinate with UBC Facilities prior to tagging this equipment.
- .5 In existing buildings, equipment tagging shall be consistent with existing tagging in the building. Tags shall not be re-used.

2.2 **General**

- .1 Submit list of system and component labels to be Consultant for review prior to engraving.

2.3 **Labels (Identification)**

- .1 Provide lamicoid plastic labels with black face and white centre, 100 mm x 35 mm x 2.5 mm thickness for the following applications:
 - .1 Gauges and Panels engrave with 6 mm high lettering. Note for electrical switch gear, coordinate with Division 16.
 - .2 Systems engrave with 25 mm high lettering.

- .3 Fume Hoods engrave with 10 mm high lettering.
 - .4 Apply labels to the following systems within the Mechanical Rooms and Penthouse:
 - .1 Water.
 - .2 Natural Gas.
 - .3 Steam.
 - .4 Fire Protection.
 - .5 Condensate.
 - .6 Compressed Air.
 - .7 One label to be affixed to the system and a second applied to the associated switch gear.
 - .5 Gauges and Panels.
- .2 All fumes hood systems shall be identified with lamicoïd labels. Identical labels are to be affixed to each fume hood and associated fan and motor starter (note that three labels are required for each system). The wording which will identify the specific fume hood and associated fan will be supplied by the owner.
- .3 Lamicoïd labels shall be mechanically fastened to the identified system and components in a conspicuous location.

2.4 Labels for Perchloric Fume Hoods

- .1 Provide lamicoïd plastic labels with "fire red" face and white centre 135 mm x 65 mm x 2.5 mm thickness to act as a warning to Fume Hood users.
- .2 For label layout refer to Standard Detail in Division 20. This label is in addition to that required above.
- .3 Perchloric fume hood labels shall be secured to the upper front panel adjacent to the static pressure gauge.

2.5 Color Coded Dots

- .1 Color Coded Dots
 - .1 Provide self-adhesive color-coded dots 13 mm in diameter.
 - .2 Dots shall be Avery TR808 or an alternate approved by the Owner. Colors shall be yellow, black, red and green.
- .2 Doors and ceiling panels providing access to devices mounted in concealed locations shall be identified by color coded dots.
- .3 Color coding shall be to the following schedule:

.1	Mechanical equipment and cleaning access	Yellow.
.2	Control equipment, dampers, valves and sensors	Black.
.3	Fire, smoke and sprinkler equipment	Red.
.4	Pipe mounted equipment other than above	Green.
- .4 Where access is through a suspend T-Bar ceiling affix dot to exposed T-Bar frame closest to the concealed equipment.

2.6 Valve Tags

- .1 Tags shall be 40 mm diameter brass with 10 mm stamped alpha-numeric coding filled with black paint.

- .2 Tags shall be complete with non-ferrous chain or "S" hooks.
- .3 Tags shall be as supplied by W.H. Brady or an alternate approved by the Owner.
- .4 Consecutively number all valves and controllers installed by Division 15 on a system basis using tags. Coordinate between the various mechanical trades to prevent duplication.
- .5 Identification coding is to start with a utility description followed by a maximum of three numerals:
 - .1 Water WXXX
 - .2 Natural Gas GXXX
 - .3 Steam SXXX
 - .4 Fire Protection FPXXX
 - .5 Condensate CXXX
 - .6 Compressed Air
- .6 The first tag number in each series will be supplied by the Owner.
- .7 For installations in existing buildings the valve and controller numbers shall be numerically sequential with the existing series.
- .8 Provide six identification flow diagrams for each system incorporating the tag schedule stating the designation number, the service function and location of tagged items and normal operating position of valves. Flow diagram shall be on maximum size 11" x 17" sheets having a 3/4" border on the left side to permit insertion into a ring binder.
- .9 Mount one copy of the flow diagram in a glazed frame.
- .10 Provide copies of flow diagram for the Operating and Maintenance Manuals.

2.7 Stenciled Letters

- .1 Black stenciled letters and numbers 25 mm high, to sign painting standards.
- .2 Black stenciled direction arrows shall be 175 mm long by 56 mm wide.
- .3 Duct Work and Access Panels: Use the system designators stated on the drawing and specification.
- .4 Duct Identification and Direction Arrows shall be located on all duct runs in Mechanical Rooms and Penthouses.
 - .1 Maximum distance between markings shall be 8 meters.
 - .2 Where ducts pass through walls or partitions identify ducts on both sides of the section.
 - .3 Beside each access panel.
- .5 Perchloric Fume Exhaust
 - .1 Identify each duct "Danger-Perchloric" using 50 mm high black letters in the following locations as described above in "Duct Identification and Direction Arrows":
 - .1 Adjacent to all major changes in direction.
 - .2 At least once in each room. Where duct is concealed in a chase, shaft, gallery or other confined space, identify at points of entry and leaving and at each.
 - .3 At access openings.

- .6 Access Panels
.1 Panels shall be identified according to the following schedule of functions:

<u>Access Function</u>	<u>Symbol</u>
Cleaning and Service	C.A.
Controls including Sensors	C.
Dampers – Back draft, Balance and Control	D.
Fire Dampers	F.D.
Smoke Dampers	S.D.

- .7 Preference is for full words when labelling pipes or ductwork opposed to abbreviated versions. This is because abbreviations can often be misinterpreted. Some examples that have caused confusion in the past are:
- .1 CWS could be condenser water or chilled.
 - .2 CHWS could be change over water supply or chilled water supply.
 - .3 DHW could be domestic hot water or district heating water.

2.8 Manufacturer's Nameplates

- .1 Each piece of equipment shall have an original factory installed metal nameplate with raised or recessed characters.
- .2 The nameplate shall fully describe the component as to manufacturer, size, model, serial number, voltage, cycle, phase, power, pressures, volume, etc.
- .3 Locate nameplates so that they are easy to read. Do not insulate or paint over.
- .4 Provide standoffs where nameplates cannot be located on cool surfaces.
- .5 Ensure that regulatory registration plates are also attached to equipment - Pressure Vessel Rating, Underwriter's Laboratory Approval, CSA Approval, etc.
- .6 For all pressure vessels, order with two identification plates (each with the CRN) - one on either side of the pressure vessel so we're not at risk of the identification plate facing into the wall. Most manufacturers can accommodate this request when it is made at the time of ordering.

END OF SECTION