

## Div 23(b) - Mechanical Identification Standard 2024 04 03 (3)

Dalhousie University Design Guidelines provide assistance to consultants during the planning, and design phases of the University's expansion and renovations. The Guidelines do not relieve a consultant from any professional responsibility, duty or due diligence to design elegant, functional, efficient and low maintenance facilities.

Facility owners have preferred materials and requirements that make the task of maintaining facilities less costly. Dalhousie understands this is a balance between capital and operating cost. The Guidelines are not intended to be the only acceptable solution. Dalhousie expects consultants to bring modern and innovative ideas, materials and methods to the University. If these Guidelines do not allow these new ideas then the consultant is to make a request in writing to the Dalhousie Project Manager for an exception to the guidelines. Necessary reasoning and or calculations shall accompany the request. The exception request will be reviewed internally and either rejected or accepted. The consultant will document this rational and/or justification for each exception in the Basis of Design. The University Guidelines may be updated subsequently.

These documents provide design guidelines only, and are not intended for use, in whole or in part, as a specification. Do not copy the guidelines verbatim in specifications or in notes on drawings. Refer questions and comments regarding the content and use of these documents to the Dalhousie University Project Manager. The Guidelines are intended to be read in conjunction with the local codes and regulations, and in no way are to be considered as a code replacement. The codes and regulations represent the minimum acceptable standard. Where the technical design requirements differ from the building codes and other applicable codes and standards, the more stringent of the codes shall be applied.

### Maintaining the Standards/Guidelines

The Design Guidelines are created and maintained by Dalhousie's Facilities Management Department. Any enquiries about the Guidelines should be directed to Facilities Management, Director of Projects, Central Services Building. Dalhousie encourages design specialists and other interested parties to provide their input and suggestions based on their experience.

### Locating this Standard's content in project specifications

The national master specification system has the following individual section for mechanical identification:

21 05 53 Identification for Fire-Suppression Piping and Equipment.

22 05 53 Identification for Plumbing Piping and Equipment.

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23 05 53 Identification for HVAC Piping and Equipment.

25 05 53 Identification for Integrated Automation.

The University requires the content of this Standard to be placed in a new, combined section, 23 05 54 – Mechanical Identification.

The following Common Work Results sections shall list “Section 23 05 54 – Mechanical Identification” in Part 1, 1.1 Related Requirements:

21 05 00 – Common Work Results For Fire Suppression

22 05 00 – Common Work Results For Plumbing

23 05 00 – Common Work Results For HVAC

25 05 01 – EMCS: GENERAL REQUIREMENTS, shall list “Section 23 05 54 – Mechanical Identification” in Part 1, 1.1.2 Related Requirements

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## 1. MANUFACTURER'S EQUIPMENT NAMEPLATES

- 1.1. Metal or lamicoïd nameplate mechanically fastened to each piece of equipment by manufacturer.
- 1.2. Lettering and numbers to be recessed.
- 1.3. Information to include, as appropriate:
  - 1.3.1. Equipment: Manufacturer's name, model, size, serial number, capacity.
  - 1.3.2. Motor: voltage, Hz, phase, power factor, duty, frame size.

## 2. SYSTEM NAMEPLATES

- 2.1. Lamicoïd:
  - 2.1.1. Colors:
    - .1 Hazardous: red letters, white background.
    - .2 Elsewhere: black letters, white background (except where required otherwise by applicable codes).

- 2.1.2. Construction:

3 mm thick laminated plastic or white anodized aluminum, matte finish, with square corners, letters accurately aligned and machine engraved into core.

- 2.1.3. Sizes:

Conform to following table:

#	mm	Lines	Letters (mm)
1	10 x 50	1	3
2	13 x 75	1	5
3	13 x 75	2	3
4	20 x 100	1	8
5	20 x 100	2	5
6	20 x 200	1	8
7	25 x 125	1	12
8	25 x 125	2	8
9	35 x 200	1	20

Use maximum of 25 letters/numbers per line.

- 2.2. Brass Tags:

- 2.2.1. Brass tags to be made of 18-gauge brass. Tags to be round or rectangular with rounded corners. Attach to valves / equipment with chain.

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### 2.3. Locations:

- 2.3.1. Terminal cabinets, control panels: Use size # 5.
- 2.3.2. Equipment in Mechanical Rooms: Use size # 9.

## 3. PIPING SYSTEMS GOVERNED BY CODES

- 3.1. Sprinklers: to NFPA 13.
- 3.2. Standpipe and hose systems: to NFPA 14.
- 3.3. Fire Cabinets and Fire Extinguishers: NFPA 10

## 4. LOCATION OF IDENTIFICATION ON PIPING AND DUCTWORK SYSTEMS

- 4.1. On long straight runs in open areas in equipment rooms, galleries, 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.
- 4.2. Adjacent to each change in direction.
- 4.3. At least once in each small room through which piping or ductwork passes.
- 4.4. On both sides of visual obstruction or where run is difficult to follow.
- 4.5. On both sides of separations such as walls, floors, partitions.
- 4.6. Where system is installed in pipe chases, ceiling spaces, galleries, confined spaces, at entry and exit points, and at access openings.
- 4.7. At beginning and end points of each run and at each piece of equipment in run.
- 4.8. At point immediately upstream of major manually operated or automatically controlled valves, dampers, etc. Where this is not possible, place identification as close as possible, preferably on upstream side.
- 4.9. Identification to be easily and accurately readable from usual operating areas and from access points.
- 4.10. Position of identification to be 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.
- 4.11. Maximum distance between non potable pipe identification to be 60”.
- 4.12. Maximum distance between medical gas pipe identification to be 20’-0”.

## 5. PIPING SYSTEMS IDENTIFICATION

- 5.1. Identify contents by background colour marking, pictogram (as necessary), legend; direction of flow by arrows. To CAN/CGSB 24.3 except where specified otherwise.
- 5.2. Pictograms:

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- 5.2.1. Where required, to Workplace Hazardous Materials Information System (WHMIS) regulations.
- 5.3. Legend:
  - 5.3.1. Block capitals to sizes and colours listed in CAN/CGSB 24.3.
- 5.4. Arrows showing direction of flow:
  - 5.4.1. Outside diameter of pipe or insulation less than 75 mm: 100 mm long x 50 mm high.
  - 5.4.2. Outside diameter of pipe or insulation 75 mm and greater: 150 mm long x 50 mm high.
  - 5.4.3. Use double-headed arrows where flow is reversible.
- 5.5. Extent of background colour marking:
  - 5.5.1. To full circumference of pipe or insulation.
  - 5.5.2. Length to accommodate pictogram, full length of legend and arrows.
- 5.6. Materials for background colour marking, legend, arrows:
  - 5.6.1. Pipes and tubing 20 mm and smaller: Waterproof and heat-resistant pressure sensitive plastic marker tags.
  - 5.6.2. All other pipes: Pressure sensitive plastic-coated cloth or vinyl with protective overcoating, waterproof contact adhesive undercoating, suitable for ambient of 100%RH and continuous operating temperature of 150°C and intermittent temperature of 200°C.
- 5.7. Waterproof and Heat Resistant Pressure Sensitive Plastic Marker Tags: for pipes and tubing  $\frac{3}{4}$ " nominal and smaller.
- 5.8. Stenciled Identification:
  - 5.8.1. As an alternate to manufactured pipe markers identification may be stenciled on pipe except PVC piping using a first quality oil base paint and colour bands. Colored bands to be installed at each end of identification. Letters shall be a minimum of 2" high. Text to be black.
  - 5.8.2. Have a small sample of stenciled identification (at least one (1) of each service) reviewed by engineer prior to identifying pipework.
- 5.9. Outdoor Pipe:
  - 5.9.1. Use stenciled identification on aluminum jacket.
  - 5.9.2. Provide waterproof colored adhesive banding suitable for temperatures below - 30°C at each end of identification. Banding to wrap around pipe and lap itself.
  - 5.9.3. Gas / Propane pipe painted yellow need not be identified.
- 5.10. Colours and Legends:
  - 5.10.1. All pipes to be identified. Where not listed, obtain direction from the University Project Manager.
  - 5.10.2. Colors for legends, arrows, to following table:

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<b>Background Colour</b>	<b>Text and Arrows</b>
Black	White
Black/White	White/Black
Brown	White
Dark Blue	White
Green	White
Grey	Black
Light Grey	Black
Light Blue	White
Magenta	White
Purple	White
Red	White
Black / White Striped	Black
White (Oxygen)	Green
White (Others)	Black
Yellow	Black

5.10.3. Background color marking and legends for piping systems:

<b>Contents</b>	<b>Banding</b>	<b>Background Colour</b>	<b>Legend</b>	<b>Prefix for BIM</b>
Plumbing				
Acid Waste	Yellow	Yellow	ACID WASTE	AW
Acid Vent	Yellow	Yellow	ACID VENT	V(ACID)
Brine	Green	Green	BRINE	BRINE

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<b>Contents</b>	<b>Banding</b>	<b>Background Colour</b>	<b>Legend</b>	<b>Prefix for BIM</b>
City water	Green	Green	CITY WATER	CW
Coil Condensate Drain	Green	Green	COND	COND
Contaminated Lab Waste	Yellow	Yellow	CONT. LAB WASTE	CONTLW
Domestic Hot Water Supply	Green	Green	DOM. HW SUPPLY	DHW
Domestic Hot Recirculation	Green	Green	DOM. HW CIRC	DHWR
Domestic Cold Water	Green	Green	DOM. CW SUPPLY	DCW
Tempered Water	Green	Green	TEMPERED WATER (XXX °C)	TEMPW
Non-Potable Cold Water	Green	Purple	WARNING: NON-POTABLE COLD WATER – DO NOT DRINK	NPCW
Non-Potable Hot Water	Green	Purple	WARNING: NON-POTABLE HOT WATER – DO NOT DRINK	NPHW
Non-Potable Hot Recirculation	Green	Purple	WARNING: NON-POTABLE DHW RECIRC. – DO NOT DRINK	NPRW
Plumbing Vent	Green	Green	SAN VENT	V(SAN)
Radon	Green	Green	RADON	RADON
Rainwater	Green	Green	RAINWATER	RW
Raw water	Green	Green	RAW WATER	RAWW
River water	Green	Green	RIVER WATER	RIVERW
Saltwater Supply	Green	Green	SALTWATER	SALTW
Sanitary Sewer Above Grade	Green	Green	SAN	SANA
Sanitary Sewer Below Grade	Green	Green	SAN	SANB

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<b>Contents</b>	<b>Banding</b>	<b>Background Colour</b>	<b>Legend</b>	<b>Prefix for BIM</b>
Sanitary Sewer Pumped	Green	Green	SAN	SANP
Seawater	Green	Green	SEAWATER	SEAW
Storm water	Green	Green	STORM	STMW
Treated water	Green	Green	TREATED WATER	TREATE DW
Wastewater	Green	Green	WASTEWATER	WASTE W
Weeping Tile	Green	Green	WEeping TILE	WT
Heating / Cooling				
Boiler Feed Water	Green	Green	BLR. FEED WTR	BFW
Chilled water return	Blue	Blue	CH. WTR. RETURN	CHWR
Chilled water supply	Blue	Blue	CH. WTR. SUPPLY	CHWS
Chilled Beam Water Supply	Light Blue	Light Blue	CH BEAM WTR SUPPLY	CBWS
Chilled Beam Water return	Light Blue	Light Blue	CH BEAM WTR RETURN	CBWR
Condenser Water supply	Green	Green	COND. WTR. SUPPLY	CWS
Condenser Water return	Green	Green	COND. WTR. RETURN	CWR
District Heating Supply	Black/Red	Red	DISTRICT HEAT SUPPLY	DHS
District Heating Return	Black/Red	Red	DISTRICT HEAT RETURN	DHR
District Cooling Supply	Black/Blue	Blue	DISTRICT COOLING SUPPLY	DCS
District Cooling Return	Black/Blue	Blue	DISTRICT COOLING RETURN	DCR
Geothermal Fluid Supply	Black/Magenta	Magenta	G.T. SUPPLY	GTFS



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<b>Contents</b>	<b>Banding</b>	<b>Background Colour</b>	<b>Legend</b>	<b>Prefix for BIM</b>
Geothermal Fluid Return	Black/Magenta	Magenta	G.T. RETURN	GTFS
Glycol Heating Supply	Black/Magenta	Magenta	GLY. HEAT SUPPLY	GLS
Glycol Heating Return	Black/Magenta	Magenta	GLY. HEAT RETURN	GLR
Glycol Heat Reclaim Supply	Black/Magenta	Magenta	GLY. HR SUPPLY	GLHRS
Glycol Heat Reclaim Return	Black/Magenta	Magenta	GLY. HR RETURN	GLHRR
Heat Pump Supply	Black/Green	Green	HP SUPPLY	HPWS
Heat Pump Return	Black/Green	Green	HP RETURN	HPWR
Hot water Heating Supply	Black/Red	Red	HEATING SUPPLY	HWS
Hot water Heating Return	Black/Red	Red	HEATING RETURN	HWR
Make-Up Water	Green	Green	MAKE-UP WTR	MUW
Process Chilled Water Return	Blue	Blue	PCH. WTR. RETURN	PCHWR
Process Chilled Water Supply	Blue	Blue	PCH. WTR. SUPPLY	PCHWS
Steam XXX psi	Black/Yellow	Yellow	XXX psi STEAM	XXX#S
Steam Condensate (Gravity)	Black/Yellow	Yellow	ST.COND.RET (GRAVITY)	GC
Steam Condensate (Pumped)	Black/Yellow	Yellow	ST.COND.RET (PUMPED)	PC
Safety Valve Vent	Black/Yellow	Yellow	STEAM VENT	V(SRV)
Intermittent Blow-Off	Black/Yellow	Yellow	INT. BLOW-OFF	IBO
Continuous Blow-Off	Black/Yellow	Yellow	CONT. BLOW-OFF	CBO
Fire Protection				
Hybrid System - Nitrogen	Red/White	Red	FIRE - NITROGEN	FNIT

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Contents	Banding	Background Colour	Legend	Prefix for BIM
Hybrid System - Water	Red/White	Red	FIRE – HYBRID WATER	FWTR
Sprinkler System	Red/White	Red	SPRINKLERS	SPK
Window Sprinkler System	Red/White	White	WINDOW SPRINKLER	SPKWIN
Standpipe System	Red/White	White	STANDPIPE	STND
Air				
Breathing Air	Black/Red	Light Grey	BREATHING AIR	BREA
Compressed air (< 100 psi)	Black/Green	Green	COMP. AIR XXX psi	CAXXX#
Compressed air (> 100 psi)	Black/Green	Green	COMP. AIR XXX psi	CAXXX#
Fuels and Engine				
Artificial Natural Gas	Yellow	Yellow	ART. NAT GAS	ANG
No. XXX Fuel Oil Suction	Yellow	Yellow	# XXX FUEL OIL	#XXXFO S
No. XXX Fuel Oil Return	Yellow	Yellow	# XXX FUEL OIL	#XXXFOR
Engine Crankcase Venting	Yellow	Yellow	VENT	V(ENG)
Engine Exhaust	Yellow	Yellow	ENGINE EXHAUST	EXHEN G
Lubricating Oil	Yellow	Yellow	LUB. OIL	LO
Hydraulic Oil	Yellow	Yellow	HYDRAULIC OIL	HO
Gasoline	Yellow	Yellow	GASOLINE	GAS
Natural Gas	Yellow	Yellow	NAT GAS	NG
Propane	Yellow	Yellow	PROPANE	LPG
Gas regulator vents	Yellow	Yellow	GAS VENT	V(GAS)
Pure Water				
Distilled water		Green	DISTILL. WTR	DW
Demineralized water		Green	DEMIN. WATER	DEM W

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Contents	Banding	Background Colour	Legend	Prefix for BIM
Reverse Osmosis Water (Supply)	Black	White	RO WATER SUPPLY	ROWS
Reverse Osmosis Water (Return)	Black	White	RO WATER RETURN	ROWR
Medical Gas				
Anaesthetic Gas Scavenging	Magenta	Magenta	AGSS	AGSS
Carbon Dioxide	Grey/White	Grey	CO <sub>2</sub>	CO2
Gas Mixtures	Each Gas	50% each gas	Lettering of Each Gas	Lettering of Each Gas
Helium	Brown	Brown	HELIUM	HE
Medical Air	Black/White	Black/White	MEDICAL AIR	MA
Medical Vacuum	Yellow	Yellow	MEDICAL VACUUM	MVAC
Nitrogen	Black/White	Black	NITROGEN	N2
Nitrous Oxide	Dark Blue	Dark Blue	NITROUS OXIDE	N2O
Oxygen	Green/White	White	OXYGEN	O2
Refrigeration				
Refrigeration Suction	Black/Yellow	Yellow	REF. SUCTION (R-###)	REF(SUCT)
Refrigeration Liquid	Black/Yellow	Yellow	REF. LIQUID (R-###)	REF(LIQ)
Refrigeration Hot Gas	Black/Yellow	Yellow	REF. HOT GAS (R-###)	REF(HG)
Vacuum				
Lab Vacuum (## in Hg)		Yellow	LAB VACUUM (## in Hg)	LABVAC
Vacuum		Green	VACUUM	VAC
Instrument Vacuum		Yellow	INSTUMENT VACUUM	INSTVAC

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Contents	Banding	Background Colour	Legend	Prefix for BIM
Other				
Carbon dioxide		Red	CO2	CO2
Chlorine		Yellow	CHLORINE	CL

5.11. Exposed Ceilings Painted Black

5.11.1. Pipe identification to be consist of a grey band at each end of the identification, grey directional arrows, and the service written in grey.

## 6. DUCTWORK IDENTIFICATION

6.1. 50 mm high stenciled letters and directional arrows 150 mm long x 50 mm high.

6.2. Colours: Black, or coordinated with base colour to ensure strong contrast.

6.3. Identify systems: e.g. Supply AHU1, Return AHU 1.

EA Exhaust  
 OA Outdoor  
 RA Return  
 SA Supply  
 PVENS Process Ventilation Supply  
 PVENR Process Ventilation Return  
 PVENE Process Ventilation Exhaust  
 BR Combustion Breeching

## 7. VALVES, CONTROLLERS

7.1. Brass tags with ½” stamped identification data filled with black paint or black lamicaid tags with ½” high white letters.

7.2. Valves and operating controllers, except at plumbing fixtures, radiation, or where in plain sight of equipment they serve: Secure tags with nonferrous chains or closed "S" hooks.

7.3. Install one copy each of flow diagrams and valve schedules, of approved size, mounted in frame behind non-glare glass where directed by Engineer/Architect, showing charts and schedules with identification of each tagged item, valve type, service, function, normal position, location of tagged item. Provide one copy of each (reduced in size if required) in each operating and maintenance manual.

7.4. Number valves in each system consecutively.

7.5. Valves to be identified using the following prefixes:

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Description	Tag	Description	Tag
Domestic Cold Water	DCW - xxx		
Domestic Hot Water	DHW - xxx	Glycol Heating Supply	GWS – xxx
Dom. HW Recirculation	DHWRC - xxx	Glycol Heating Return	GHR - xxx
Non Potable Water	NPW - xxx	Hot Water Heat Supply	HWS - xxx
Natural Gas	NG - xxx	Hot Water Heat Return	HWR - xxx
Propane	P - xxx	Low Temperature HWS	LTHS - xxx
		Low Temperature HWR	LTHR - xxx
Chilled Water Supply	CWS - xxx	Steam	S - xxx
Chilled Water Return	CWR - xxx	Steam Condensate	SC - xxx

7.6. Where access doors are provided for valves provide lamicoïd mechanically fastened to door identifying valve service. Where not listed in table below seek clarification from Architect/Engineer.

Service	Identification
Elevator / Elevator Pit Sprinkler shut off valve	Red lamicoïd, White letters ¼” high – “ELEVATOR SPRINKLER SYSTEM’
Gas / Propane Shut-off valves	Red lamicoïd, White letters ¼” high – “GAS / PROPANE SHUT-OFF VALVE’
Medical Gas Valves	See section 22 60 00

## 8. CONTROLS COMPONENTS IDENTIFICATION

### 8.1. Language

8.1.1. Provide nameplates and identification tapes and tags in English.

### 8.2. Nameplates for Panels

8.2.1. Identify faces with laminated plastic nameplates.

8.2.2. Sizes: 25 x 67 mm minimum.

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8.2.3. Lettering: 7 mm minimum high, black.

8.2.4. Inscriptions: machine engraved to identify function and, where applicable, fail-safe position.

8.2.5. Nameplates: plastic laminate, 3 mm thick Melamine, matt white finish, black core, square corners, lettering accurately aligned and engraved into core.

### 8.3. Nameplates for Field Devices

8.3.1. Identify by plastic encased cards attached by chain.

8.3.2. Sizes: 50 x 100 mm minimum.

8.3.3. Lettering: 5 mm minimum high produced from laser printer in black.

8.3.4. Data to include: point name, schematic designation number, model, capillary length, size, range, set point, other pertinent data, function, fail-safe position.

8.3.5. Companion cabinet: identify interior components using plastic enclosed cards.

### 8.4. Nameplates for Room Sensors

8.4.1. Interior: identify by stick-on labels.

8.4.2. Exterior: identify point name on face of cover using plastic laminate nameplates.

8.4.3. Sizes: to suit.

8.4.4. Lettering: to suit. Clearly legible.

### 8.5. Warning Signs

8.5.1. Equipment (e.g. motors, starters) under remote automatic control: provide orange coloured signs warning of automatic starting under control of EMCS.

8.5.2. Sign to read: "Caution: This equipment is under automatic remote control of EMCS" or equivalent to Engineer's approval.

### 8.6. Nameplates for Wiring

8.6.1. Provide numbered tape markings on wiring at panels, junction boxes, splitters, cabinets, outlet boxes.

8.6.2. Colour coding: to CSA C22.1. Use colour coded wiring in communications cables, matched throughout system.

8.6.3. Power wiring: identify at each panel

### 8.7. Nameplates for Conduit

8.7.1. Colour code all EMCS conduit.

8.7.2. Locate coding on conduits, in exposed and concealed locations including removable suspended ceilings, tunnels, shafts, on both sides of walls, floors, and at 15 m intervals.

8.7.3. Coding: use plastic tape or paint, 25 mm wide, fluorescent orange. Confirm colour with Engineer during "Preliminary Design Review".

## 9. ABOVE CEILING EQUIPMENT IDENTIFICATION:

9.1. Where mechanical equipment are installed above accessible ceilings, identification in accordance with the tables below. Underceiling identification shall be installed on the

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ceiling T-Bar spline or access door frame directly below the access to the equipment. Vinyl adhesive discs shall be ¾” diameter, white or black center disc (if necessary) to be ¼” diameter. Letters on underceiling lamicooids to be ¼” high unless noted otherwise. Letters on equipment lamicooids to be ½” high unless noted otherwise. In no case shall equipment be installed in a ceiling space that is not considered accessible unless a proper access hatch is provided.

9.2. Where multiple similar devices are accessed through the same tile or access door only one (1) adhesive disc of each color is needed. If the device is identified with a lamicooid but no unique number only one (1) lamicooid is required stating the device and the quantity (e.g., 3 Fire Dampers).

9.3. Underceiling Identification Table:

Service	Identification
DHW Recirculation Pump	Green Adhesive Disc and White lamicooid, Black letters with pump identification
Plumbing System Valves	Green Adhesive Disc
Propane / Natural Gas System Valves	Yellow Adhesive Disc
DHW Mixing Valves	Green Adhesive Disc and White lamicooid, Black letters with 'DHW Mixing Valve'
Trap Primer	Green Adhesive Disc and White lamicooid, Black letters with 'Trap Primer'
Water Hammer Arrestor	Green Adhesive Disc
Lab Vacuum Components	Yellow Adhesive Disc
Steam System Valves	Cyan
Heating System Valves	Yellow Adhesive Disc with Black center
Chilled Water System Valves	Yellow Adhesive Disc with Black center
Sprinkler System Valves	Red lamicooid, with White letters
Compressed Air Valves	Yellow Adhesive Disc
Reverse Osmosis Valves	Green Adhesive Disc with Yellow center
Fire Protection System Components	Red lamicooid, White letters identifying equipment (e.g., 'Auxiliary Drain', 'Zone Valve')
Back Draft Dampers	Blue Adhesive Disc
Balancing Dampers	Blue Adhesive Disc
Duct Access Doors	Blue Adhesive Disc

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Service	Identification
Fan Coil Units / Heat Pumps / Fans	White lamicoid, Black letters with unit identifier (e.g., FC-##)
Fire Dampers	Red lamicoid, White letters identifying equipment (e.g., 'Fire Damper')
Fire and Smoke Dampers	Red lamicoid, White letters identifying equipment (e.g., 'Fire and Smoke Damper')
Heating / Cooling Coil	White lamicoid, Black letters with coil identifier (e.g., HC-##)
Humidifier	White lamicoid, Black letters with unit identifier (e.g., H-##)
Operating Dampers	See Section 23 05 54
VAV Box / Air Valve / Air terminal unit	White lamicoid, Black letters with unit identifier (e.g., 'AV-##').
VRF System Components	White lamicoid, Black letters with unit identifier (e.g., HP-##, BC-##). All components to be identified individually.
EMCS / Control Devices	Red Adhesive Disc with White center
EMCS System Transformers	White lamicoid, Black letters with unit identifier (e.g., EMCS Transformer)

## 9.4. Ceiling Mounted Equipment Identification Table:

Service	Identification
DHW Recirculation Pump	White lamicoid, Black letters with pump identification
Plumbing System Valves	Valve Tags
Propane / Natural Gas System Valves	Valve Tags
DHW Mixing Valves	Valve Tags
Trap Primer	White lamicoid, Black letters with 'Trap Primer'
Water Hammer Arrestor	None
Lab Vacuum Components	Valve Tags
Heating System Valves	Valve Tags
Chilled Water System Valves	Valve Tags
Sprinkler System Valves	Red lamicoid valve tag with White letters
Compressed Air Valves	Valve Tags



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<b>Service</b>	<b>Identification</b>
Reverse Osmosis Valves	Valve Tags
Fire Protection System Components	Red lamicoid, White letters identifying equipment (e.g., 'Zone Valve')
Back Draft Dampers	White lamicoid, black letters with unit identifier (e.g., <b>FC-##</b> )
Balancing Dampers	Spray paint damper handle blue
Fan Coil Units / Heat Pumps / Fans	White lamicoid, black letters with unit identifier (e.g., <b>FC-##</b> )
Fire Dampers	Red lamicoid, White ¼" high letters identifying equipment (e.g., 'Fire Damper')
Fire and Smoke Dampers	Red lamicoid, White ¼" high letters identifying equipment (e.g., 'Fire and Smoke Damper')
Heating / Cooling Coil	White lamicoid, Black letters with coil identifier (e.g., <b>HC-##</b> )
Humidifier	White lamicoid, Black letters with unit identifier (e.g., <b>H-##</b> )
Operating Dampers	Control Point Identification
VAV Box / Air Valve / Air terminal unit	White lamicoid, Black letters with unit identifier (e.g., ' <b>AV-##</b> ').
VRF System Components	Black lamicoid, White letters with unit identifier (e.g., <b>HP-##</b> , <b>BC-##</b> ). All components to be identified individually.
EMCS Devices	See Control System Identification Section above
EMCS System Transformer	White lamicoid, Black letters with unit identifier (e.g., <b>EMCS Transformer ### V – ## V</b> )

9.5. Lamicoid plates to be attached to splines, access door frames, and equipment with two (2) rivets each.

## 10. EQUIPMENT IN CABINETS AND CONCEALED BEHIND WALLS:

- 10.1. All Mechanical equipment accessed through access door in walls or concealed in cabinets to be identified and to have identification on the access door.
- 10.2. Lamicoids to be mechanically fastened to access doors / panels. Tags to be attached to valves equipment with chains or rivets.
- 10.3. Access door / panel identification letters to be ¼" high unless noted otherwise.
- 10.4. Equipment label letters to be ½" high unless noted otherwise.
- 10.5. Access door / Panel Identification

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<b>Service</b>	<b>Identification</b>
Elevator / Elevator Pit Sprinkler shut off valve	Red lamicaid, White letters – “ELEVATOR SPRINKLER SYSTEM’
EMCS Panels	White lamicaid, Black letters, ¼” high
Fire Damper (note 1)	White lamicaid, Red letters – “FIRE DAMPER’
Fire and Smoke Damper (note 1)	White lamicaid, Red letters – “FIRE and SMOKE DAMPER’
Gas / Propane Shut-off valves	Red lamicaid, White letters – “GAS / PROPANE SHUT-OFF VALVE’
In-floor Heat Header	White lamicaid, Black letters – “INFLOOR HEAT HEADER - ##’
Kitchen Hood Fire Suppression System	Red lamicaid, White letters – “KITCHEN HOOD FIRE SUPPRESSION’
Medical Gas Valves	See section 22 60 00
Plumbing Cleanout	None
Plumbing System Drain Valve	White lamicaid, Black letters – “DRAIN”

## 10.6. Equipment Identification:

<b>Service</b>	<b>Identification</b>
Elevator / Elevator Pit Sprinkler shut off valve	Valve Tag
Fire Damper (note 1)	White lamicaid, Red letters ¼” high – “FIRE DAMPER’
Fire and Smoke Damper (note 1)	White lamicaid, Red letters – “FIRE and SMOKE DAMPER’
Gas / Propane Shut-off valves	Valve Tag
In-floor Heat Header	White lamicaid, Black letters – “INFLOOR HEAT HEADER - ##’

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Service	Identification
Kitchen Hood Fire Suppression System	None
Medical Gas Valves	See section 22 60 00
Plumbing Cleanout	None
Plumbing System Drain Valve	Valve Tag

## 11. EQUIPMENT:

- 11.1. Identify Mechanical equipment with lamicaid plates attached to equipment with chain or minimum of two (2) rivets.
- 11.2. Identification to be visible by an individual standing on the floor, or fixed catwalk.
- 11.3. Identification label lettering to be 1" high unless noted otherwise.

Service	Identification	BIM Prefix
Plumbing Equipment		
Acid Neutralizing Tank	Black lamicaid, white letters ½" high – "ACID NEUTRALIZING TANK'. Attach to wall if tank is recessed in floor.	ANT
Air Compressor	Black lamicaid, White letters with unit identifier (e.g., COMP-##)	COMP
Air Drier	Black lamicaid, White letters with unit identifier (e.g., AD-##)	AD
DHW Heater / Tank	Black lamicaid, White letters with unit identifier (e.g., T-##)	DHWT
DHW Expansion Tank	Black lamicaid, White letters with unit identifier (e.g., ET-##)	DHWET
Domestic Water Pressure Boosting System	Black lamicaid, White letters with unit identifier (e.g., B-##)	DWPBS
Grease Interceptor	Black lamicaid, white letters ½" high – "GREASE INTERCEPTOR'. Attach to wall if tank is recessed in floor.	GRSI
Hair / Solids Interceptor	None	None

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<b>Service</b>	<b>Identification</b>	<b>BIM Prefix</b>
Plumbing Fixtures	None	None
Pool Heater	Black lamicoid, White letters with unit identifier (e.g., H-##)	PH
Pressure Regulator	Valve Tag	Valve Tag
Pressure Tank	Black lamicoid, White letters with unit identifier (e.g., PT-##)	PT-##
XXX Pump XXX Denotes System Name or Type. Hot Water Pump would be HWP-##	Black lamicoid, White letters with unit identifier (e.g., P-##)	XXXP-##
Reverse Osmosis System	Black lamicoid, White letters with unit identifier (e.g., RO-##).	RO-##
Trap Primer	Black lamicoid, White letters with unit identifier (e.g., TP-##)	TP-##
Vacuum Pump	Black lamicoid, White letters with unit identifier (e.g., V-##)	VACP-##
Water Entrance Equipment	None	None
Water Treatment System	Black lamicoid, White letters with unit identifier (e.g., WT-##)	WT-##
Medical Gas system	See Section 22 60 00	MG-##
Sprinkler System Components	To NFPA 13, 14, 20 and Sections 21 13 13, 21 13, 14, and 21 30 00	To NFPA 13, 14, 20 and Sections 21 13 13, 21 13, 14, and 21 30 00
Hydronic Systems		
Air Separator	None	AS-##
Chiller	Black lamicoid, White letters with unit identifier (e.g., C-##)	CH-##
Boiler	Black lamicoid, White letters with unit identifier (e.g., B-##)	BLR-##
Cabinet Unit Heater	Black lamicoid, white letters ¼" high with unit identifier (e.g., "CUH-X") in lower corner of unit.	CUH-X.

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<b>Service</b>	<b>Identification</b>	<b>BIM Prefix</b>
Chemical Treatment Tank	Black lamicaid, White letters with unit identifier (e.g., T-##)	CHEMT-##)
Chilled Beam	Black lamicaid, White letters with unit identifier (e.g., CB-##)	CB-##
Condensate Meter	Black lamicaid, White letters attached with chain with unit identifier (e.g., CM)	CM-##
Condensate Receiver	Black lamicaid, White letters attached with chain with unit identifier (e.g., CR-XX)	CR-XX
Cooling Coils in ducts	Black lamicaid, White letters with unit identifier (e.g., CC-##)	CC-##
Dehumidifier	Black lamicaid, White letters with unit identifier (e.g., DHUM-##) attached to insulation jacket near nameplate.	DHUM-##
Expansion Tank	Black lamicaid, White letters with unit identifier (e.g., ET-##) attached to insulation jacket near nameplate.	ET-##
Fin Tube Radiation	None	FTRAD-##
Force Flow Heaters	Black lamicaid, white letters ¼" high with unit identifier (eg "CUH-X") in lower corner of unit.	CUH-X
Fuel Oil Tank	See 'OTHER IDENTIFICATION' below	See 'OTHER IDENTIFICATION' below
Fuel Oil Pump XXX = FO for fuel oil	Black lamicaid, White letters with unit identifier (e.g., P-##)	FOP-##)
Glycol Fill Package/Tank	Black lamicaid, White letters with unit identifier (e.g., G-##)	GFT-##)
Heat Exchanger	Black lamicaid, White letters with unit identifier (e.g., HX-##) attached to insulation jacket near nameplate.	HX-##
Heat Pump	Black lamicaid, White letters with unit identifier (e.g., HP-##)	HP-##
Heating Specialties	None	None
Heating Coils in ducts	Black lamicaid, White letters with unit identifier (e.g., HC-##)	HC-##
In-floor Cooling Header	INFLCH-XX)	INFLCH-XX

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<b>Service</b>	<b>Identification</b>	<b>BIM Prefix</b>
In-floor Heating Header	INFLHH-XX)	INFLHH-XX
Radiant Ceiling Panels	None	None
Reheat Coils in ducts	Black lamicaid, White letters with unit identifier (e.g., RH-##)	RH-##
Steam Meter	Black lamicaid, White letters attached with chain with unit identifier (e.g., SM)	SM-##
Steam Trap	Brass tag punched attached with chain. Each unit to have unique identifier (e.g., ST-XX)	ST-XX
Steel Panel Radiation	None	None
Unit Heater	Black lamicaid, white letters ¼" high with unit identifier (eg "UH-X') in lower corner of unit.	UH-##
Ventilation		
Air Handling Units	Black lamicaid, White letters with unit identifier (e.g., AHU-##)	AHU-##
Dual Duct VAV Box	Black lamicaid, White letters with unit identifier (e.g., DDVAV-##)	DDVAV-##
Energy Recovery Ventilators	Black lamicaid, White letters with unit identifier (e.g., ERV-##)	ERV-##
Fans	Black lamicaid, White letters with unit identifier (e.g., EF-##)	Black lamicaid, White letters with unit identifier (e.g., EF-##)
Filter Banks (not in AHU)	Black lamicaid, White letters with unit identifier (e.g., F-##)	Black lamicaid, White letters with unit identifier (e.g., F-##)
Filter Gauges	None	None
Fume Hood Air Valve	Black lamicaid, White letters with unit identifier (e.g., FHV-##)	FHV-##

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<b>Service</b>	<b>Identification</b>	<b>BIM Prefix</b>
General Exhaust Air Valve	Black lamicoid, White letters with unit identifier (e.g., GEX-##)	GEX-##
Grilles, Registers, and Diffusers	None	None
Heat Pumps	Black lamicoid, White letters with unit identifier (e.g., HP-##)	HP-##
Heat Recovery Ventilators	Black lamicoid, White letters with unit identifier (e.g., HRV-##)	HRV-##
Heat Wheel	Black lamicoid, White letters with unit identifier (e.g., HW-##)	HW-##
Humidifier	Black lamicoid, White letters with unit identifier (e.g., HUM-##)	HUM-##
Louvers	None	None
Make Up Air Valve	Black lamicoid, White letters with unit identifier (e.g., MAV-##)	MAV-##
Rooftop Gooseneck / Hood	None	None
Silencer	Black lamicoid, White letters with unit identifier (e.g., SL-##)	SL-##
Split System AC / HP	Black lamicoid, White letters with unit identifier (e.g., AC-##). Tags to be on both evaporator and condenser.	AC-##
Turning Vanes	None	None
VAV Box	Black lamicoid, White letters with unit identifier (e.g., VAV-##)	VAV-##
VRF System Components Outdoor Unit Heat Recovery Box Indoor Unit	Black lamicoid, White letters with unit identifier (e.g., VRFOU-##, VRFHRB-##, VRFIU-##). All components to be identified individually.	VRFOU-##, VRFHRB-##, VRFIU-##

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## 12. OTHER IDENTIFICATION:

12. Identify each non potable water outlet with sign similar to that shown at right. Outdoor signs to be 10" x 10" aluminum mechanically fastened to building. Indoor signs to be at least 4" x 3" H mechanically fastened or glued to wall near outlet.



12. Identify each oil tank/ diesel tank / propane tank installation with 10" x 10" peel and stick sign similar to signs shown at right. Sign to be located conspicuously and attached to each oil / diesel tank or installed on the fence / wall near each group of propane tanks. Signs for outdoor tanks to be suitable for outdoor use.



12. Identify location of Kitchen Type 'K' fire extinguisher with wall 10" x 3" minimum wall mounted sign providing directions for use



12.4. Emergency Fuel Shut-off: Provide red lamicoid sign with white letters stating "GAS SHUT OFF" fastened to wall adjacent to each emergency fuel shut off valve. In Mechanical and Service Rooms lettering to be 1" high. In Kitchens lettering to be ½" high.