

CAN/CGSB-24.3-12 STANDARD FOR PIPE IDENTIFICATION



COMPLIES WITH THE CANADIAN GENERAL STANDARDS BOARD
IDENTIFICATION OF PIPING SYSTEMS

CAN/CGSB-24.3-12 standard for pipe identification was designed to provide plant personnel with a cohesive system for identifying critical plant information ultimately reducing chances of errors, simplifying the handling of emergencies and minimizing hazards. The CAN/CGSB-24.3-12 standard provides direction for labeling materials contained in piping systems, including pipes buried in the ground and electrical conduits, by means of background colour marking, legend and, in some cases, pictogram(s).

CAN/CGSB-24.3-12 establishes which piping and conduit should be labeled, where labels should be applied and label legend content. In addition, this standard regulates the letter size, marker length, marker colour, and location of markers to be installed. The CAN/CGSB-24.3-12 standard does not apply to medical gas piping, those systems are covered by CAN/CGSB-24.2-M86, Identification of Medical Gas Containers, Pipelines and Valves.

Current Pipe Marker Standards

Pipe markers indicate both the pipe contents and direction of flow. The contents are indicated by text, WHMIS pictogram(s) and by a standard colour scheme.

- Arrows to define the direction of flow, same colour as legend letters.
- Piping systems containing high temperature materials must include the temperature and/or the word “Hot” in the legend.
- Piping systems containing high pressure material must include the pressure and/or the word “Pressurized” in the legend. Pipes containing steam must include the word “Steam” as part of the legend.
- Electrical conduits must be labelled “Electrical.” Voltage and/or amperage may also be included.
- For any material, if applicable, the words “Liquid” or “Gas” may be included as part of the legend.
- For controlled products, pictograms must also be used.
- The background colour and legend colour must be made of clearly legible letters and/or numbers, providing the name or identifier of the material. Colours are used to designate whether the contained material is hazardous or for fire protection, as shown in the table below:

MATERIAL	COLOUR SCHEME*	
Hazardous	Black Text (512-101) on Yellow Background (505-101)	SAMPLE
Inherently Low Hazard	White Text (513-101) on Green Background (503-107)	SAMPLE
Fire Protection	White Text (513-101) on Red Background (509-102)	SAMPLE

*Colour numbers are those in CGSB standard 1-GP-12.

Pipe Marker Placement

Pipe markers should be positioned so that they can be easily seen from the normal angle of approach – for instance, below the centerline of the pipe if the pipe is overhead, and above the centerline if the pipe is below eye level. Markers must be secured at both ends with 50 mm wide black tape around the entire pipe circumferences and are required at the following locations:

- On straight pipe runs at 6 m intervals
- Close to all valves
- Where pipes pass through walls or floors
- Branches
- Fittings or junction boxes
- Adjacent to all changes in direction
- At beginning and end points of each run and at each piece of equipment

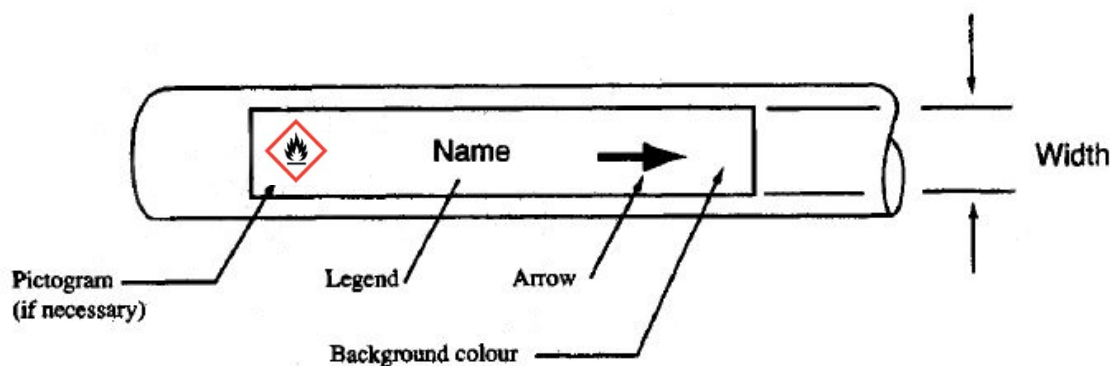
Pipe Marker Size

Pipe diameter determines the appropriate marker and text sizes as shown in the following table. The suggested minimum height of the legend is 13 mm. For identification of small pipes (less than 19 mm diameter), the use of tags or wall markings is recommended.

OUTSIDE DIAMETER OF PIPE OR COVERING	MINIMUM LETTER AND NUMBER HEIGHT	LENGTH OF COLOUR FIELD
19 mm to 32 mm	13 mm	200 mm
38 mm to 51 mm	19 mm	200 mm
64 mm to 150 mm	32 mm	300 mm
200 mm to 250 mm	64 mm	600 mm
over 250 mm	89 mm	800 mm

Identification by Pictogram

Controlled products contained in a piping system must be identified by WHMIS pictogram(s) applied on the background colour with a minimum diameter of 13mm. If necessary, more than one pictogram may be used. See example below:












WHMIS Pictograms

Pictogram colours are dictated by CGSB standard 1-GP-2.

- Hazardous material must be identified with a black pictogram on a yellow background or a black pictogram on a white background.
- Fire protection is identified with a white pictogram on a red background or a white pictogram on a black background.
- If the material is an inherently low hazard, use of pictograms is not applicable.

Pictograms used must be identical to the Workplace Hazardous Materials Information System (WHMIS) symbols depicted in the chart below.

<p>Health Hazard</p>  <p>Carcinogens, Reproductive Toxicity, Respiratory Sensitizer, Target Organ Toxicity, Aspiration Hazard, Mutagens</p>	<p>Flame</p>  <p>Flammables, Pyrophorics, Self-Heating, Self-Reactives, Organic Peroxides, Substances and mixtures which in contact with water, emit flammable gases</p>	<p>Explanation Mark</p>  <p>Skin and Eye Irritant, Skin Sensitizers, Acute Toxicity, Target Organ Toxicity</p>
<p>Skull and Crossbones</p>  <p>Acute Toxicity</p>	<p>Corrosion</p>  <p>Skin Corrosions and Burns, Eye Damage, Corrosive to Metals</p>	<p>Exploding Bomb</p>  <p>Self-Responsive Substances and Mixtures, Organic Peroxides</p>
<p>Flame Over Circle</p>  <p>Oxidizers</p>	<p>Gas Cylinder</p>  <p>Gases Under Pressure</p>	<p>Poisonous and Infectious Materials</p>  <p>Biohazardous Infectious Material</p>

Marking Services Canada goes beyond what is required to allow contractors and owners to include relevant information for the safe, efficient operations of their facilities. As a single source supplier, MSC works with customers to develop a comprehensive identification labeling/signage program. We offer a complement of services including design, engineering, take-off, manufacturing and installation or full turnkey packages to complete labeling programs from beginning to end in a seamless, cost effective process.

For more information on the CAN/CGSB-24.3-12 Standard, please visit the following source:

Standards Council of Canada – <http://www.scc.ca/en>