



ANSI/ASME STANDARD FOR PIPE IDENTIFICATION

COMPLIES WITH ANSI/ASME STANDARD A13.1-2023 CODE REQUIREMENTS

The standards for pipe identification regulate the letter size, marker length, marker color, and location of markers to be installed. The purpose of the standard is to identify hazardous materials conveyed in piping systems and their hazards when released into the environment.

Pipe markers are to indicate both the contents of the pipe and its direction of flow. Arrows at one or both ends indicate flow, the contents are indicated by text and by a standard color scheme.

The current version of the ANSI/ASME A13.1-2023 code uses a color scheme with six standard color combinations, and four defined by user combinations. The pipe marker colors are based on the charismatic characteristics of the hazard of the contents of the pipe, as shown in the table below:

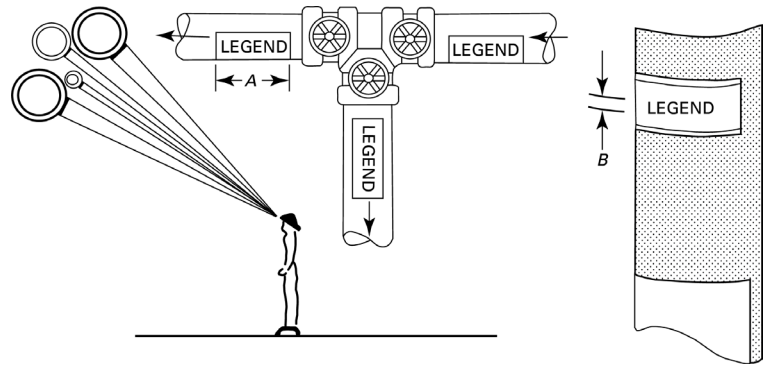
Current 2023 Standards

Defined Applications	Classification	Color Scheme	
	Firefighting	White Text on Safety Red	Sample
	Toxic and Corrosive	Black Text on Safety Orange	Sample
	Flammable, Combustible, or Oxidizing	Black Text on Safety Yellow	Sample
	Steam; or Steam Condensate, Boiler Feedwater, or other Hot Water	Black Text on Safety Gray	Sample
	Potable, Cooling, or other Cold or Tepid Water	White Text on Safety Green	Sample
	Compressed Air	White Text on Safety Blue	Sample
Undefined Applications	Classification	Color Scheme	
	Defined By User	White Text on Safety Purple	Sample
	Defined By User	Black Text on Safety White	Sample
	Defined By User	White Text on Safety Brown	Sample
	Defined By User	White Text on Safety Black	Sample

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 are required at the following locations:

- Adjacent to all valves and flanges
- Adjacent to all changes of direction
- On both sides of wall or floor penetrations
- At intervals on straight pipe runs sufficient for identification



Pipe Marker Size

Pipe diameter determines the appropriate marker and text sizes, as shown in the following table:

Outside Pipe Diameter	Minimum Length of Marker Color Field	Minimum Text Height
.7" to 1.3" (18 to 33 mm)	8" (200 mm)	.5" (13 mm)
1.4" to 2.4" (34 to 61 mm)	8" (200 mm)	.7" (19 mm)
2.5" to 6.7" (62 to 170 mm)	12" (300 mm)	1.3" (32 mm)
6.8' to 10" (171 to 254 mm)	24" (600 mm)	2.5" (64 mm)
Over 10" (Over 254 mm)	32" (800 mm)	3.5" (89 mm)

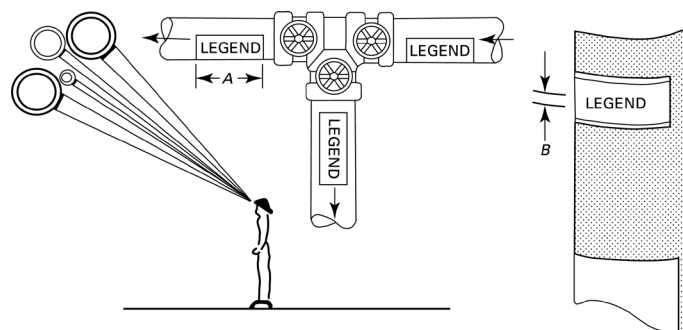
Previous 2020 Standards

Defined Applications	Classification	Color Scheme	
	Fire-Quenching Fluids	White Text on Safety Red	Sample
	Toxic and Corrosive Fluids	Black Text on Safety Orange	Sample
	Flammable and Oxidizing Fluids	Black Text on Safety Yellow	Sample
	Combustible Fluids	White Text on Safety Brown	Sample
	Potable, Cooling Boiler and Other Water	White Text on Safety Green	Sample
	Compressed Air	White Text on Safety Blue	Sample
Undefined Applications	Classification	Color Scheme	
	Defined By User	White Text on Safety Purple	Sample
	Defined By User	Black Text on Safety White	Sample
	Defined By User	White Text on Safety Grey	Sample
	Defined By User	White Text on Safety Black	Sample

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 are required at the following locations:

- Adjacent to all valves and flanges
- Adjacent to all changes of direction
- On both sides of wall or floor penetrations
- At intervals on straight pipe runs sufficient for identification



Pipe Marker Size

Pipe diameter determines the appropriate marker and text sizes, as shown in the following table:

Outside Pipe Diameter	Minimum Length of Marker Color Field	Minimum Text Height
.7" to 1.3" (18 to 33 mm)	8" (200 mm)	.5" (13 mm)
1.4" to 2.4" (34 to 61 mm)	8" (200 mm)	.7" (19 mm)
2.5" to 6.7" (62 to 170 mm)	12" (300 mm)	1.3" (32 mm)
6.8' to 10" (171 to 254 mm)	24" (600 mm)	2.5" (64 mm)
Over 10" (Over 254 mm)	32" (800 mm)	3.5" (89 mm)

Existing schemes for identification can be considered meeting the updated 2023 ASME requirements if the schemes are described in writing or employees are trained to the operation and hazards of the piping systems. To avoid confusion, any existing facility that was labeled to the older 1996 color scheme may continue to be updated using that specification following the table below:

Previous 1996 Standards

Materials Inherently Hazardous	Color Scheme	
Flammable or Explosive, Chemically Active or Toxic, Extreme Temperature or Pressures, Radioactive.	Black Text on Safety Yellow	Sample
Materials Inherently Low Hazard	Color Scheme	
Liquid or Liquid Admixture	White Text on Safety Green	Sample
Gas or Gaseous Admixture	White Text on Safety Blue	Sample
Fire-Quenching Materials	Color Scheme	
Water, Foam, CO ₂ , Halon, etc.	White Text on Safety Red	Sample

Pipe Marker Size

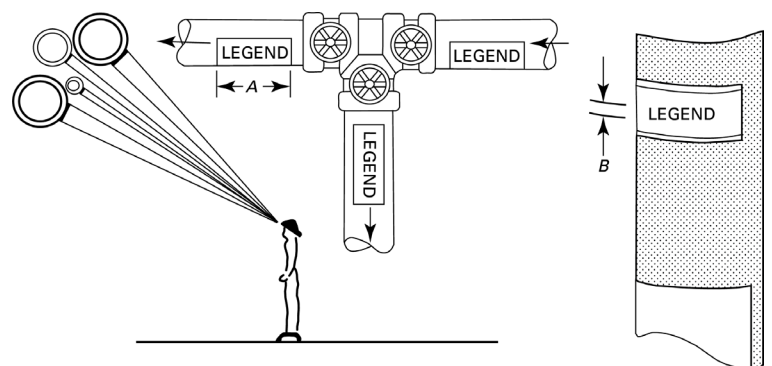
Pipe diameter determines the appropriate marker and text sizes, as shown in the following table:

Outside Pipe Diameter	Minimum Length of Marker Color Field	Minimum Text Height
¾" to 1¼" (19 to 32 mm)	8" (200 mm)	½" (13 mm)
1½" to 2" (38 to 51 mm)	8" (200 mm)	¾" (19 mm)
2½" to 6" (64 to 150 mm)	12" (300 mm)	1¼" (32 mm)
8" to 10" (200 to 250 mm)	24" (600 mm)	1½" (64 mm)
Over 10" (Over 250 mm)	32" (800 mm)	3½" (89 mm)

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 are required at the following locations:

- Adjacent to all valves and flanges
- Adjacent to all changes of direction
- On both sides of wall or floor penetrations
- At intervals on straight pipe runs sufficient for identification



GHS Pictograms

Piping that is connected to containers that are labeled in accordance with GHS requirements, a corresponding label on the piping may be provided. The corresponding label should contain at least the product name or identifier, the pictogram, the signal word, and the physical, health, and environmental hazard statement(s).

 <ul style="list-style-type: none">• Oxidizers	 <ul style="list-style-type: none">• Flammable• Self-reactives• Pyrophorics• Self-heating• Emits flammable gas• Organic peroxides	 <ul style="list-style-type: none">• Explosives• Self-reactives• Organic peroxides
 <ul style="list-style-type: none">• Acute toxicity (severe)	 <ul style="list-style-type: none">• Corrosives	 <ul style="list-style-type: none">• Gases under pressure
 <ul style="list-style-type: none">• Carcinogen• Respiratory sensitizer• Reproductive toxicity• Target organ toxicity• Mutagenicity• Aspiration toxicity	 <ul style="list-style-type: none">• Environmental toxicity	 <ul style="list-style-type: none">• Irritant• Dermal sensitizer• Acute toxicity (harmful)• Narcotic effects• Respiratory tract irritation

Marking Services, Inc. (MSI) is a worldwide leader in mechanical labeling, servicing the identification needs of mechanical, electrical and ammonia contractors. We've been advancing the use of pipe markers, valve tags and equipment signs to enhance overall operations of commercial, industrial, health care, educational and technology facilities for over the last 30 years. We offer identification products that are ASME, ANSI, NFPA, and OSHA compliant and are widely utilized and installed nationally and internationally.

MSI offers a complete line of mechanical identification to meet every labeling challenge with extremely fast fulfillment, industry best quality, and no minimum order requirements. Through our value-added services and high quality products, we significantly raise the level of safety awareness, promote safe work conditions and reduce total "in-place" costs.

For more information on the ANSI/ASME A13.1-2023 Standard, please visit the following source:
[American National Standards Institute - www.asme.org](http://www.asme.org)