Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
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Date: 8/21/2025
Return Request: 9/4/2025
Project: Hot Springs National Park – Rehabilitate Bathhouses – Buckstaff Bathhouse
Supplier: Marking Systems, Inc.
Manufacturer: Marking Systems, Inc.
Submittal: Identification for Plumbing Piping and Equipment
Submittal Number: 220553.001
Spec Section: 220553, 2.1 through 2.4
Drawing # and Installation Location: M4-1

ARCHITECT
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Omaha, Nebraska 68124
(402)391-2111

GENERAL CONTRACTOR
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Kansas City, Missouri 64108
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ENGINEER
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Comments:

CSUSA PROJECT NO.
25-7065
joe@comfortar.com

Marking Services Incorporated

MS-264 ENGRAVED PLASTIC TAGS

Technical Data

Description

MS-264 tags are ideal for marking electrical equipment and control panels. Engraved information clearly shows against the background color. Letter size will be adjusted to fit available space or specification requirement. Standard tag construction is 2 ply 1/16" thick.

Although MS-264 is not a thermoset plastic (phenolic) as designated by ASTM-D709 it is a fire-retardant polymer specifically designed as a safer, formaldehyde and phenol free, alternative to phenolic. MS-264 is non-flammable, UL 94 VO rated, electrically non-conductive, and insulative. Tags are also RoHS compliant, halogen free and PVC free.

Physical and Chemical Characteristics

Standard Material:	2-ply (two laminated layers of engraving plastic)	
Optional Material:	3-ply (three laminated layers of engraving plastic)	
Standard Thickness:	1/16" (1.6 mm)	
Optional Thickness:	1/8" (3.2 mm)	
Service Temperature:	-20°F through 175°F (-29°C through 79°C)	
Outdoor Durability:	Indoor use only	
Finish:	Matte finish with beveled edges	
Mounting:	Adhesive backing and/or holes: 3/16" (4.8 mm) default diameter)	
Standard Colors: **(Non-standard colors available upon request)**	☑ BLACK (WHITE text) ☐ GREEN (WHITE text) ☐ RED (WHITE text) ☐ BLUE (WHITE text)	☐ WHITE (BLACK text) ☐ YELLOW (BLACK text) ☐ ORANGE (BLACK text)
Text Height:	Sized to fit within tag boundary or comply with specified height	

Information on physical and chemical characteristics is based on tests we believe to be reliable. The values are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material for their specific application.

Created June 14, 2019

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LASER ENGRAVED BRASS TAGS

Technical Data

Description

Brass valve tags are available as 1-1/2” or 2” diameter round or square with one 3/16” hole. Laser engraved tags have high contrast text making it easy to read. Due to the chemical reaction during the engraving process, the text becomes part of the tag and will not flake off or fade. Other sizes and shapes are available upon request. These tags are available with or without hole(s). Hole location and size must be specified.

A variety of fasteners are available including Brass “S” hooks, #16 jack chain, and brass bead chain. Other attachment methods are available upon request.

Physical and Chemical Characteristics

Standard Material:	Brass	
Standard Thickness:	20 Gauge (0.032”/0.812 mm thick)	
Optional Thickness:	Available upon request	
Service Temperature:	-40°F through 500°F (-40°C through 260°C)	
Standard Colors:	High contrast text on Brass background	
Non-standard Colors:	n/a	
Mounting:	Adhesive backing and/or holes; Ø3/16” (Ø4,8 mm) default diameter	
Finish:	Standard finish, brushed finish available	
Text Height:	1/4" service indicator on top line	
Available Characters:	1/8” Text , # / \ “ - . ‘ ° ( ) A thru Z – all upper case & 0 thru 9 1/4" Text , # / \ “ - . ‘ & ° A thru Z – all upper case & 0 thru 9 1/2" Numbers 0 thru 9	
Typical Sizes:	☐ 1” x 3” (25 x 76 mm) ☐ 1.5” (38 mm) diameter ☐ 1.5” x 1.5” (38 x 38 mm) ☐ 2” (51 mm) diameter ☐ 2” x 2” (51 x 51 mm)	☐ 2” x 4” (51 x 102 mm) ☐ 2” x 6” (51 x 152 mm) ☐ 4” x 6” (102 x 152 mm) ☐ Other (specify: H x W)

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BRASS BEAD CHAIN

Technical Data

Description

Our #6 Solid Brass Bead Chain is supplied 100 pieces per box. It is a flexible solid brass chain and provided in 4.5” (114 mm) lengths with a locking link on the end of the chain. The diameter of the chain is 1/8” with a tensile strength of 20 lbs. and approximately 70 balls per foot.

The chain is ideal for use in non-caustic environments and can be linked together to accommodate large valves.

MSI Part Number: 15765

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VALVE CHART FRAME

Technical Data

Description

Valve Chart Frame is designed to hold 8-1/2” x 11” (216 mm x 279 mm) valve charts. Plastic lens included. Glass lens is available upon request. Glass lens is glazing quality B, Class 1, Type I, ASTM C 1036, 2.5 mm single thickness. Frames are natural finish anodized extruded aluminum. Wall mountable.

MSI Part Number: 15790

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Marking Services Incorporated

MS-900 SELF-ADHESIVE PIPE MARKERS

Technical Data

Description

MS-900 self-adhesive pipe markers are manufactured from premium grade vinyl with a permanent pressure-sensitive acrylic adhesive. They are used to provide line service designations, system color-coding or various labeling needs. MS-900 markers conform to the ASME A 13.1 "Scheme for the Identification of Piping Systems" with regard to label colors, overall size and text height. Flow directional arrow tape or individual arrow markers are used with pipe markers to indicate direction of flow. MS-900 markers are available in a variety of standard and custom colors including clear.

Physical and Chemical Characteristics

Base Material for MS-900:	.0032” (0.0812 mm) thick PVC
Service Temperature:	-50°F through 180°F (-45°C thru 82°C)
Application Temperature:	+50°F (10°C)
Water Resistance:	Excellent
UV Resistance:	Good
Chemical Resistance:	Resistant to acids; alkalis and salts
Expected Outdoor Durability:	Base Material: minimum 1 year
Storage Durability:	Two years when stored at +73°F (22°C) and 50% relative humidity
Finish:	Semi-gloss surface
Text Height:	Sized to fit within label boundary or comply with specified height
Mounting:	Permanent pressure sensitive acrylic adhesive backing
Standard Colors Available:	Clear, White, Red, Green, Yellow, Orange, Blue, Black. Custom colors available upon request.

Label Sizes and Letter Heights

Marker Size	Pipe Diameter	Marker Style	Color Field	Letter Height
1” x 8”	3/4" – 2-1/4”	A	8” long	3/4"
2-1/4” x 13”	2-1/2” – 7-7/8”	B	13” long	1-3/4”
4” x 24”	8” – 10”	C	24” long	2-1/2”
4” x 32”	Over 10”	D	32” long	3-1/2”

*Individual arrow markers are the same width and one-half the length of the pipe markers.

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Marking Services Incorporated

MS-900 SELF-ADHESIVE PIPE MARKERS

Technical Data

Designation of Colors (ASME A13.1-2015 & ANSI Z535-2017)

Designation of Colors — ASME A13.1-2015 & ANSI Z535-2017 Standards		
Classification	Color Scheme	
Defined Applications		
Fire quenching liquids	White text on red	Sample
Toxic and corrosive fluids	Black text on orange	Sample
Flammable fluids	Black text on yellow	Sample
Combustible fluids	White text on brown	Sample
Potable, cooling, boiler feed and other water	White text on green	Sample
Compressed air	White text on blue	Sample
Undefined Applications		
Defined by user	White text on purple	Sample
Defined by user	Black text on white	Sample
Defined by user	White text on gray	Sample
Defined by user	White text on black	Sample

Designation of Colors (ANSI/ASME A13.1-1996)

Designation of Colors — ANSI/ASME A13.1-1996 Standards		
Classification	Color Scheme	
Materials Inherently Hazardous		
Flammable or Explosive, Chemically Active or Toxic, Extreme Temperature or Pressures, Radioactive	Black text on yellow	Sample
Materials Inherently Low Hazard		
Liquid or Liquid Admixture (non-hazardous materials)	White text on green	Sample
Gas or Gaseous Admixture (non-hazardous materials)	White text on blue	Sample
Fire Quenching Materials		
Water, Foam, CO2, Halon, etc.	White text on red	Sample

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Marking Services Incorporated

MS-900 SELF-ADHESIVE ARROW TAPE

Technical Data

Description

MS-900 self-adhesive arrow tape is constructed using a premium grade vinyl with an aggressive acrylic pressure-sensitive adhesive. They are used to provide information regarding direction of flow of pipe's contents. All arrow tape conforms to the ASME A13.1-2015 Scheme for the Identification of Piping Systems and ANSI Z535-2017 with regard to arrow size and width of tape.

Physical and Chemical Characteristics

Film:	.0032" (0.0812 mm) thick PVC
Adhesive:	Permanent pressure-sensitive acrylic
Service Temperature:	-50°F to +180°F (-45°C to 82°C)
Application Temperature:	+50°F (10°C)
Water Resistance:	Excellent
UV Resistance:	Good
Chemical Resistance:	Resistant to acids, alkalis and salts
Expected Outdoor Durability:	Base Material: 1 year; With optional MS-1000 over lamination 5 years
Storage Durability:	Two years when stored at +73°F (22°C) and 50% relative humidity

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Marking Services Incorporated

MS-900 SELF-ADHESIVE ARROW TAPE

Technical Data

Designation of Colors (ASME A13.1-2015 & ANSI Z535-2017)

Designation of Colors — ASME A13.1-2015 & ANSI Z535-2017 Standards		
Classification	Color Scheme	
Defined Applications		
Fire quenching liquids	White text on red	Sample
Toxic and corrosive fluids	Black text on orange	Sample
Flammable fluids	Black text on yellow	Sample
Combustible fluids	White text on brown	Sample
Potable, cooling, boiler feed and other water	White text on green	Sample
Compressed air	White text on blue	Sample
Undefined Applications		
Defined by user	White text on purple	Sample
Defined by user	Black text on white	Sample
Defined by user	White text on gray	Sample
Defined by user	White text on black	Sample

Designation of Colors (ANSI/ASME A13.1-1996)

Designation of Colors — ANSI/ASME A13.1-1996 Standards		
Classification	Color Scheme	
Materials Inherently Hazardous		
Flammable or Explosive, Chemically Active or Toxic, Extreme Temperature or Pressures, Radioactive	Black text on yellow	Sample
Materials Inherently Low Hazard		
Liquid or Liquid Admixture (non-hazardous materials)	White text on green	Sample
Gas or Gaseous Admixture (non-hazardous materials)	White text on blue	Sample
Fire Quenching Materials		
Water, Foam, CO2, Halon, etc.	White text on red	Sample

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MS-900 SELF-ADHESIVE ARROW TAPE

Technical Data

Arrow Tape Sizes

Size	Part Number	Arrow/Bg Color	Size	Part Number	Arrow/Bg Color
1” x 30YDS	95105	BLK/GRN	1” x 30YDS	95109	WHT/BRN
2” x 30YDS	95205	BLK/GRN	2” x 30YDS	95209	WHT/BRN
4” x 30YDS	95405	BLK/GRN	4” x 30YDS	95409	WHT/BRN
1” x 30YDS	95106	BLK/ORG	1” x 30YDS	95110	WHT/GRY
2” x 30YDS	95206	BLK/ORG	2” x 30YDS	95210	WHT/GRY
4” x 30YDS	95406	BLK/ORG	4” x 30YDS	95410	WHT/GRY
1” x 30YDS	95107	BLK/WHT	1” x 30YDS	95102	WHT/GRN
2” x 30YDS	95207	BLK/WHT	2” x 30YDS	95202	WHT/GRN
4” x 30YDS	95407	BLK/WHT	4” x 30YDS	95402	WHT/GRN
1” x 30YDS	95101	BLK/YEL	1” x 30YDS	95104	WHT/BLU
2” x 30YDS	95201	BLK/YEL	2” x 30YDS	95204	WHT/BLU
4” x 30YDS	95401	BLK/YEL	4” x 30YDS	95404	WHT/BLU
1” x 30YDS	95103	WHT/RED	1” x 30YDS	95111	WHT/PUR
2” x 30YDS	95203	WHT/RED	2” x 30YDS	95211	WHT/PUR
4” x 30YDS	95403	WHT/RED	4” x 30YDS	95411	WHT/PUR
1” x 30YDS	95108	WHT/BLK			
2” x 30YDS	95208	WHT/BLK			
4” x 30YDS	95408	WHT/BLK			

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Marking Services Incorporated

CEILING TACKS

Technical Data

Description

Standard .875" diameter domed head ceiling tacks are ideal for marking the location of valves, dampers, booster coils and controllers above acoustical ceiling tiles. Tacks are steel with baked enamel coating. Simply push tack into ceiling tile or insulation near closest access point.

Available Stock Colors

- Orange
- Black
- Green
- Red
- Blue
- White
- Yellow

*Additional colors available upon request.

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