Downloaded from http://www.everyspec.com

INCH-POUND

MIL-STD-1247C
13 October 1989
SUPERSEDING
MIL-STD-1247B
20 December 1968

MILITARY STANDARD

MARKINGS, FUNCTIONS AND HAZARD DESIGNATIONS OF HOSE, PIPE, AND TUBE LINES FOR AIRCRAFT MISSILE, AND SPACE SYSTEMS

AMSC N/A
FSC SAFT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Downloaded from http://www.everyspec.com

INCH-POUND

NOTICE OF CHANGE

MIL-STD-1247C
NOTICE 2
24 March 1993

MILITARY STANDARD

MARKINGS, FUNCTIONS AND HAZARD DESIGNATIONS OF HOSE, PIPE, AND TUBE LINES FOR AIRCRAFT MISSILES, AND SPACE SYSTEMS

TO ALL HOLDERS OF MIL-STD-1247C:

1. THE FOLLOWING PAGES OF MIL-STD-1247C HAVE BEEN REVISED AND SUPERSEDE THE PAGE LISTED:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
5	13 October 1989	5	REPRINTED WITHOUT CHANGE
6	24 March 1993	6	13 October 1989
7	13 October 1989	7	REPRINTED WITHOUT CHANGE
8	24 March 1993	8	13 October 1989
11	13 October 1989	11	REPRINTED WITHOUT CHANGE
12	24 March 1993	12	13 October 1989

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-1247 will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended page(s), is a separate publication. Each notice is to be retained by stocking points until the military standard is completely revised or cancelled.

Custodians:
Army - MI
Navy - AS
Air Force - 16

Preparing Activity:
Army - MI

(Project No. SAFT-A032)

International Interest: (Para 6.4)

Review activities:
Army - AR, AV
Navy - AS, OS
Air Force - 10, 11, 12, 14, 19, 68

AMSC N/A

AREA SAFT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Downloaded from http://www.everyspec.com

INCH-POUND

NOTICE OF CHANGE

MIL-STD-1247C
NOTICE 1
21 October 1991

MILITARY STANDARD

MARKINGS, FUNCTIONS AND HAZARD DESIGNATIONS OF HOSE, PIPE, AND TUBE LINES FOR AIRCRAFT MISSILES, AND SPACE SYSTEMS

TO ALL HOLDERS OF MIL-STD-1247C:

1. THE FOLLOWING PAGE OF MIL-STD-1247C HAS BEEN REVISED AND SUPERSEDES THE PAGE LISTED:

NEW PAGE	DATE	SUPERSEDED PAGE	DATE
7	21 October 1991	7	13 October 1989

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-1247 will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended page(s), is a separate publication. Each notice is to be retained by stocking points until the military standard is completely revised or canceled.

Custodians:
Army - MI
Navy - AS
Air Force - 99

Preparing Activity:
Army - MI

(Project No. SAFT-A031)

International Interest: (Para 6.4)

Review activities:
Army - AR, AV
Navy - AS, OS
Air Force - 10, 11, 12, 14, 19, 68, 99
DLA - GS

AMSC N/A

AREA SAFT

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Downloaded from http://www.everyspec.com

FOREWORD

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Missile Command, ATTN: AMSMI-RD-SE-TD-ST, Redstone Arsenal, AL 35898-5270 by using the self-addressd Standardization Document Improvement Proposal (DD Form 1426) at the end of this document or by letter.

3. Markings, functions and hazard designations of hose, pipe and tube lines used in aircraft, missile and space systems will promote safety, expedite training, lessen chances of error in operation, and facilitate cross-servicing. This process of positive identification assures proper routing and functioning of various types cylindrical lines used in these systems.

Downloaded from http://www.everyspec.com

CONTENTS

Downloaded from http://www.everyspec.com

CONTENTS

Downloaded from http://www.everyspec.com

1. SCOPE

1.1 Scope. This standard establishes material labeling requirements for identification, function, subfunction, pressures, hazards and direction of flow for pipes, hoses and tube lines used in aircraft, missile, space systems, and support equipment. The use of colors, words and symbols to identify the functions of such items (to include approved abbreviations), and the dimensions of labeling items such as tags, tapes, and bands, are specifically prescribed (see 4.1.1).

1.2 Applicability. The criteria for marking functions upon, and designating hazardous pipes, hoses and tube lines, are designed to result in rapid servicing of functional systems to return them to full operation and are an integral part of the complete system. Lines, pipes, and hoses external to these systems should be coded in accordance with MIL-STD-101.

Downloaded from http://www.everyspec.com

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

QQ-A-250/1	-	Aluminum 1100, Plate and Sheet

MILITARY

MIL-S-5059	-	Steel, Corrosion-Resistant (18-8), Plate, Sheet and Strip
MIL-T-9906	-	Tape, Identification, Aerospace Vehicle Tubing Marker

STANDARDS

FEDERAL

FED-STD-595	-	Colors

MILITARY

MIL-STD-101	-	Color Code for Pipelines and for Compressed Gas Cylinders
MIL-STD-1247	-	Marking, Functions and Hazard Designations of Hose, Pipe and Tube Lines for Aircraft Missile and Space Systems
MS21045	-	Nut, Self Locking, Hexagon-Regular Height, 450 Degrees F, 125 KSI FTU
MS21919	-	Clamp, Loop Type, Cushioned, Support
MS33739	-	Aircraft Markings, Servicing and Precautioning
MS51958	-	Screw, Machine Pan-Head, Cross-Recessed, Corrosion Resisting Steel, UNF-2A

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

Downloaded from http://www.everyspec.com

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AEROSPACE INDUSTRIES ASSOCIATION (NATIONAL AEROSPACE STANDARDS)

NAS 1411 - Band Marker, Blank

(Application for copies should be addressed to the Aerospace Industries Association of America, Inc., 1250 Eye Street, NW, Washington, DC 20005.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

Downloaded from http://www.everyspec.com

3. DEFINITIONS

3.1 Cold lines. The term is used to denote lines in which the temperature of the flowing medium is below -60°F (-51°C).

3.2 Compressed gas lines. Compressed gas lines are lines which carry a gaseous substance, other than air under pressure or vacuum.

3.3 Function. A term describing the system or active medium (material) contained in the conduit, pipes, hose or tube lines.

3.4 Hot lines. This term is used in classifying lines on which the surface temperature ranges above 325°F (162.8°C).

3.5 Identification group. The group of all the markings necessary for positive identification of a line. The group includes colors, words, and symbols denoting function, hazard, pressure, voltage, and direction of flow without repetition of any element, and pertinent to positive identification of the line.

3.6 Instrument air lines. Instrument air lines are lines which carry air for activating pressure operated gages.

3.7 Lines. A conveyance medium which includes any pipe, hose, or tube used to carry liquids and gases. Vacuum lines are also included. It also includes any conduit used to house electrical wires or cables. Accessories such as pipe covering are considered as parts of the line. NOTE: Access doors or panels to servicing points should be identified as prescribed by MS33739, or as otherwise approved by the procuring activity.

3.8 Pneumatic air lines. Pneumatic air lines are lines which carry air, other than instrument air, under pressure.

3.9 Subfunction (also subsidiary function). The mechanical, operations or conditioning effects which result from the application of a function to a system or subsystem, causing the system or subsystem to perform its intended operation (as in "Flaps Up," "Flaps Down," heating or cooling and the like).

Downloaded from http://www.everyspec.com

4. GENERAL REQUIREMENTS

4.1 Identification. Each line shall be identified as to function and subsidiary function when required, applicable hazard and direction of flow if applicable, except as follows:

a. Water piping systems containing water for human consumption shall be painted white or identified as directed by the procuring activity.

b. There is no requirement to mark temporary lines or umbilical cables.

c. Tapes shall be used for normal operating temperature -60°F to +325°F (-51°C to +162.8°C). However, where the use of tapes is not feasible due to temperature conditions, bands or tags impression stamped or electro-etched with function, pressure, hazard, and direction of flow as applicable, shall be used. Figure 1 and 6 illustrate band and tag acceptable for this purpose. Bands, tags, and tapes shall not be used in the engine compartments where there is a possibility of the bands, tags, or tapes being drawn into the engine intake. For such locations, paints conforming to this standard, and which has no deleterious effect on the material used for the lines, shall be used for identification purposes.

4.1.1 Identification of function. Function shall be identified by the use of words, colors, and symbols as shown in figure 2, except that symbols need not be used where identification is accomplished with paints, and neither colors nor symbols are required on tags or bands.

4.1.2 Identification of subsidiary function. If required for unique identification of a line, additional information relating to function of a line may be imprinted in words or abbreviations on the colored portion of the MIL-T-9906 tape, as shown in figure 4, metal tags as shown in figure 6, or bands as shown in figure 1.

4.1.3 Designation of hazards. Hazardous materials or conditions shall be designated in black letters on white or metallic (silvery or chrome) background as specified in 5.2 (see figure 1). Where such hazards result from working pressure only, and where the pressure is indicated in the identification, no further identification of hazard is necessary. Under conditions warranting special care over and above that required for the identified hazard, the skull and cross-bones symbol, illustrated in figure 3, shall be used.

4.1.4 Designation of direction of flow. When required, a direction of flow arrow, as shown in figures 1, 4 or 6 shall be used to indicate the direction in which the content of the line is flowing. A two-headed arrow will be used to indicate reversible flow.

4.1.5 Designation of pressure. Designation of pressure shall be as specified in 5.5.

Reprinted without change

Downloaded from http://www.everyspec.com

4.2 Identification media.

4.2.1 Tapes. Tape conforming to MIL-T-9906, and which completely encircles the line, shall be used to identify function of all lines, except lines exposed to excessive heat above 325°F (162.8°C) and lines in engine compartments, and fuel tanks or fuel cells where there is a possibility of the tape being drawn into the engine intake or fuel screen. Tapes used to identify function shall be color coded in accordance with 5.1.1.1; geometric symbols shall be printed thereon as specified in 5.1.2, and lettering shall be applied as specified in 5.1.3.1. Where the configuration does not permit application of tape, alternate identification methods such as tags on paint as described in this specification may be used.

4.2.2 Tags. The following lines should be identified by securely attaching applicable bands (see NAS 1411) or tags to the line as shown in figures 1, or 6.

a. Stainless steel lines 4 inches and larger in diameter.

b. Lines exposed to excessive heat above 325°F (162.8°C).

c. Cold lines, except that types may be used on cold lines as long as adhesion can be maintained at cryogenic temperatures and the lettering can be read from normal point of operation. Tags may be labeled on one side only. No geometric symbols need be painted on tags or bands. Tags and bands shall be impression stamped or electro-etched to show function, pressure if applicable, direction of flow if applicable, any applicable hazard(s), and need not be colored (see figures 1 and 6).

4.2.3 Paint. Suitable paints similar in hue, value, and chroma to FED-STD-595, and to the requirements specified in 5.1.1, and which have no deleterious effect upon the lines, shall be used for identification of:

a. Lines in engine compartments where there is a possibility of tapes, tags, or bands being drawn into the engine intake.

b. Lines 4 inches or larger in diameter except cold lines, hot lines, stainless steel lines, and lines in an oily environment.

4.2.4 Painted identification group. Whenever possible the painted identification group shall consist of (a) painted letters identifying the specific function, subsidiary function when required, working pressure if applicable, and the hazard(s) present, (b) colors denoting functions, and (c) a painted arrow indicating direction of flow if applicable. Stencils are suitable for paint application. Geometric symbols need not be used where identification is accomplished with paints. Carbon steel line and other lines requiring a protective finish will, in addition, be painted white, Color No. 17875, FED-STD-595, as background for the identification group. The white painted background will exceed the width of the identification group beyond both ends of the identification or to the ends of the lines whichever is shorter.

Downloaded from http://www.everyspec.com

5. DETAILED REQUIREMENTS

5.1 Function.

5.1.1 Colors. Colors conforming to FED-STD-595 as indicated below shall be used to denote function as specified in 5.1.1.1.

Color	FED-STD-595 Code No.
Blue	15102
Green	14187
Yellow	13655
Orange	12197
Red	11136
Brown	10049
Gray	16473
Black	17038

5.1.1.1 Application of colors. Color coding shall be based upon function as indicated below. Where more than one color is required to identify a single function the order of colors is from left to right, and the colored area shall be composed of vertical stripes, of equal width, of the required colors (see figures 2 and 4).

Function	Color
Fuel	Red
Rocket Oxidizer	Green, Gray
Rocket Fuel	Red, Gray
Water Injection	Red, Gray, Red
Lubrication	Yellow
Hydraulic	Blue, Yellow
Solvent	Blue, Brown
Pneumatic Air	Orange, Blue
Instrument Air	Orange, Gray
Coolant	Blue
Breathing Oxygen	Green
Air Conditioning	Brown, Gray
Monopropellant	Yellow, Orange
Battery Activator	Yellow, Gray
Rain Repellants	Blue, Gray
Vacuum	Gray, Orange, Gray
Fire Protection	Brown
De-Icing	Gray
Rocket Catalyst	Yellow, Green
Compressed Gas	Orange
Electrical Conduit	Brown, Orange
Inerting Fluid	Orange, Green

Reprinted without change

Downloaded from http://www.everyspec.com

5.1.1.2 Colors on tapes. Tapes used to identify function shall be 1 inch minimum width. The left-hand side shall be colored, and 1/4 inch of the right-hand side shall be reserved for geometric symbols.

5.1.1.3 Colors on painted bands. Paints used for color coding lines in accordance with 4.2.3 shall conform to the color requirements of 5.1.1 and the coding requirements of 5.1.1.1. The entire painted identification group shall completely encircle the line, and shall be of sufficient length to allow a clearance of one-half the letter height (see 5.1.3.3) between lettering and color coding on one end and between lettering and unlettered surfaces on the other end. The color coding shall appear on the left hand side of the identification group as depicted in figure 1, and shall be 2 $\pm$ 1/4 inches wide for lines 4 to 13 inches in diameter, 6 $\pm$ 3/4 inches for lines larger than 13 inches in diameter. The word group shall be applied as required to enable viewing from the normal point of operation or viewing.

5.1.2 Symbols. Solid black or, as an option, black outlined geometric symbols shall be printed on the tapes to denote functions as indicated in table I. Background shall be white or metallic (silvery or chrome). These symbols shall appear in a repeated pattern, as indicated in figure 2, for the entire length of the tapes. Symbols shall appear on the right-hand side of tapes and shall be approximately 3/16 inches wide and confined to the right of the tape within 1/4 inch from the edge. Symbols may be omitted on bands, tags, or in painted identification.

5.1.3 Wording. Wording denoting function shall be the wording specified under function in table I, or as otherwise approved by the procuring activity.

5.1.3.1 Wording on tapes. Letters shall be 3/32 inch high, and shall be printed as shown in figures 1, 2, and 4. There shall be a 1/32 inch vertical space between words when more than one written line is required to complete a statement of function. Such statements shall normally recur at 1/4 inch interval throughout the length of the tape. Lettering shall be black, regardless of the background color.

5.1.3.2 Wording on tags. Words indicating functions shall be the first word appearing at the top of the tag. Wording on tags shall be of such size as to be clearly legible and compatible to the diameter of the line.

5.1.3.3 Painted words. Letters shall be painted black on a white background, or they may be stenciled. Letters shall be of such size as to be clearly legible and compatible with the size of the lines. Words denoting function shall be the first words appearing in the identification.

Downloaded from http://www.everyspec.com

TABLE I. Functions and associated symbols.

FUNCTION	SYMBOL	ILLUSTRATION
ROCKET OXIDIZER	CRESCENT	
ROCKET CATALYST	VERTICAL STRIPES	
ROCKET FUEL	FOUR-POINT STAR INSIDE CRESCENT	
FUEL	FOUR-POINT STAR	
WATER INJECTION	INVERTED CHEVRONS	
LUBRICATION	STAGGERED SQUARES	
HYDRAULIC	CIRCLE	
COMPRESSED GAS	BROAD DIAGONAL STRIPE	
INSTRUMENT AIR	CONTINUOUS ZIG-ZAG LINE	
COOLANT	HORIZONTAL S	
BREATHING OXYGEN	RECTANGLE	
AIR CONDITIONING	GRAVEL PATTERN	
FIRE PROTECTION	HORIZONTAL DIAMOND	
DE-ICING	STAGGERED TRIANGLES	
PNEUMATIC	CONTINUOUS X-FORM LATTICE	
ELECTRICAL CONDUIT	FLASH OF LIGHTNING	
INERTING FLUID	STAGGERED PIPE CROSSES	
SOLVENT	HORIZONTAL STRIPES	
MONOPROPELLANT	BLOCK T	
VACUUM	VERTICAL WAVY LINE	
BATTERY ACTIVATOR	SPARKLING.	
RAIN REPELLENT	RAIN DROPS	

Downloaded from http://www.everyspec.com

5.2 Hazards. Hazards shall be identified in accordance with 4.1.3. Letter sizes shall be the same as those used for function within the same identification group, with a 1/32 inch vertical space between words comprising a set, as in, a dual hazard, and a 1/4 inch space between sets (or between words if only a single hazard is indicated). Where tapes are used to identify function, identification of hazard may be accomplished with tape(s) of 1/2 inch minimum width. When painted or appearing on tags or bands the hazard shall be the last word(s) in the identification following the direction of flow arrow, if applicable. Hazards associated with various line contents shall be in accordance with primary and secondary warning designations as established in MIL-STD-101. However, for application under this standard, words and abbreviations are to be substituted for colors to identify specific classes of hazards as indicated under "Identification Marking", (see table II). To facilitate cross-referencing, MIL-STD-101 colors applicable to all hazards are indicated opposite the identification markings. Thus it will only be necessary to refer to the color shown in table II of MIL-STD-101 for a particular content, then substitute applicable words or abbreviations.

5.3 Direction of flow. Direction of flow shall be identified by the arrow symbol as specified in 4.1.4.

5.4 Tapes. Where function is identified by tape, the direction of flow symbol shall appear on tapes that completely encircle the line. Arrows shall be printed in a recurring pattern at 1/4 inch intervals. Tapes shall be 1/2 inch wide minimum, and the arrow shall extend to within 1/32 inch of each edge. Height of arrow heads shall be 3/32 inch maximum or as shown in figure 4.

5.4.1 Tags. The arrow shall be stamped or etched on metal tags and of such size as to be compatible with the letters.

5.4.2 Paints. Where identification is accomplished by painting the line, the size as to the arrow shall be compatible with the size of the letters.

5.5 Working pressure. When necessary, the pressure shall be shown in pounds (force) per square inch, i.e., 150 PSI. On tags and painted bands, pressure identification shall appear immediately beneath function, and letter size shall be same as employed for function within the same identification group. Where function is identified with tapes, pressure may be identified with tapes, 1/2 inch minimum width, using the same size letters and figures as those appearing on associated tapes. Lettering shall be black on a white or metallic (silvery or chrome) background.

5.6 Miscellaneous lines.

Downloaded from http://www.everyspec.com

TABLE II. Classification of hazards, identification marking, and corresponding MIL-STD-101 color.

Class of Hazard	Identification Marking	MIL-STD-101 Color
Flammable materials. All materials known ordinarily as flammable or combustibles.	FLAM---------	Yellow
Toxic and poisonous materials. All materials extremely hazardous to life or health, under normal conditions, as toxics or poisons.	TOXIC--------	Brown
Anesthetics and harmful materials. All materials productive of anesthetic vapors and all liquid chemicals and compounds hazardous to life and property but not normally productive of dangerous quantities of fumes or vapors.	AAHM---------	Blue
Oxidizing materials. All materials which readily furnish oxygen for combustion and fire producers which react explosively or with evolution of heat in contact with any other materials.	OXYM---------	Green
Physically dangerous materials. All materials, not dangerous in themselves, which are asphyxiating in confined areas or which are generally handled in a dangerous physical state of pressure or temperature.	PHDAN--------	Gray
Fire protection materials. All materials provided in piping systems or in compressed gas cylinders exclusively for use in fire protection.	FPM----------	Red

5.6.1 Electrical conduit. In addition to the primary functional identification consisting of "ELECTRICAL CONDUIT" and associated symbol, all wire-carrying conduits will bear two markings (see figure 5) to indicate (1) usage, as in POWER, CONTROL, COMMUNICATIONS, and the like, and (2) the maximum voltage and type normally encountered, as in "115V 60 CYCLE AC," "28 VDC," and the like. Conduit carrying a number of different wires serving different purposes shall be marked "ELECTRICAL CONDUIT" (including symbol if on tapes) only. However, those conduits which include power lines and which may constitute a hazard to operating personnel shall be marked to indicate the maximum voltage normally encountered.

Reprinted without change

Downloaded from http://www.everyspec.com

5.6.2 Air conditioning ducts. Lines under 30 inches outside circumferential measurement shall be identified with the air conditioning tape shown in figure 2. Lines with circumferential measurements larger than 30 inches shall be painted with the largest sign the space will accept, not to exceed 12 inches by 12 inches. The sign shall be lettered in black on a white background with 1 1/2 inch letters reading "AIR CONDITIONING" in two lines.

5.6.3 Vents, fills, and drains. All lines venting to the outside atmosphere, or used as fill or drain shall, in addition to required identification, be marked "VENT", "FILL", "DRAIN", "FILL OR DRAIN", and the like, as applicable. Such marking shall be black on a white or metallic (silvery or chrome) background on a subsidiary tape, tag, or painted as appropriate. The pressure at which the gas or liquid is vented will be shown. Dimensions and letter sizes shall substantially conform to those of the associated identification.

5.6.4 Flex hose. Rubber hoses and other types of flexible hoses used to transfer chemical neutralizers in the process of cleaning equipment, such as engines, shall carry appropriate function content, hazard and direction of flow identification in accordance with the requirements stated herein.

5.7 Placement of identification.

5.7.1 Placement of tapes. Function tapes shall be placed on both ends of a line 24 inches and longer, as near to the end as practical. Only one identification group shall be required on these lines. Where tube bends and table support location prevent subfunction tape application, only a primary system function tape need be required. Identification within a group shall be a minimum of 1/32 inch apart. Tapes are not required on hoses as long as the functional identification is defined and visible on adjacent lines or components.

5.7.2 Placement of bands, tags and paints. Metal tags, bands, and painted bands shall be located adjacent to all operating accessories described in 5.7.1, but bands and tags shall not be so near as to obstruct operations. In addition, identification will be located adjacent to the junction with branch lines, or where lines pass through walls or floors. In long corridors or tunnels, identification need only be placed at each end of the corridor or tunnel. Pipes circumscribing missile silo walls need be marked only once in each quadrant. In general, identification need be placed only at intervals to insure that at least one group is visible and recognizable from any observation point along the line.

5.7.3 Facility interface. For those applications where systems identified per MIL-STD-1247 must interface with facility systems piping coded per MIL-STD-101, the facility service points shall be identified as prescribed by MS33739, or as otherwise approved by the procuring activity.

Downloaded from http://www.everyspec.com

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This document is intended for use as a guideline for markings, function and hazard designations of hose, pipe, and tube lines to facilitate material labeling requirements for identification in Aircraft, Missile, Space Systems and Support Equipment. This document is designed to result in rapid servicing of functional systems to return them to full operation and are an integral part of the complete system.

6.2 Issue of DODISS. When this standard is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation (see 2.1.1 and 2.2).

6.3 Metrication. Whenever inch/pound dimensions are used in this document, metric equivalents, in accordance with FED-STD-376 are acceptable.

6.4 International standardization agreements. Certain provisions of this standard are the subject of international standardization agreements (See ASCC AIR STD 17/3, STANAG 3104 and SEASTAG 3104). When change notice revision, or cancellation of this standard is proposed that will modify the international agreement concerned, the preparing activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations.

6.5 Subject term (keyword) listing.

Aerospace systems connectivity
Flight systems identification
Flow materials
Lines, cylindrical
Line indicator
Symbology
Warning labels

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Downloaded from http://www.everyspec.com

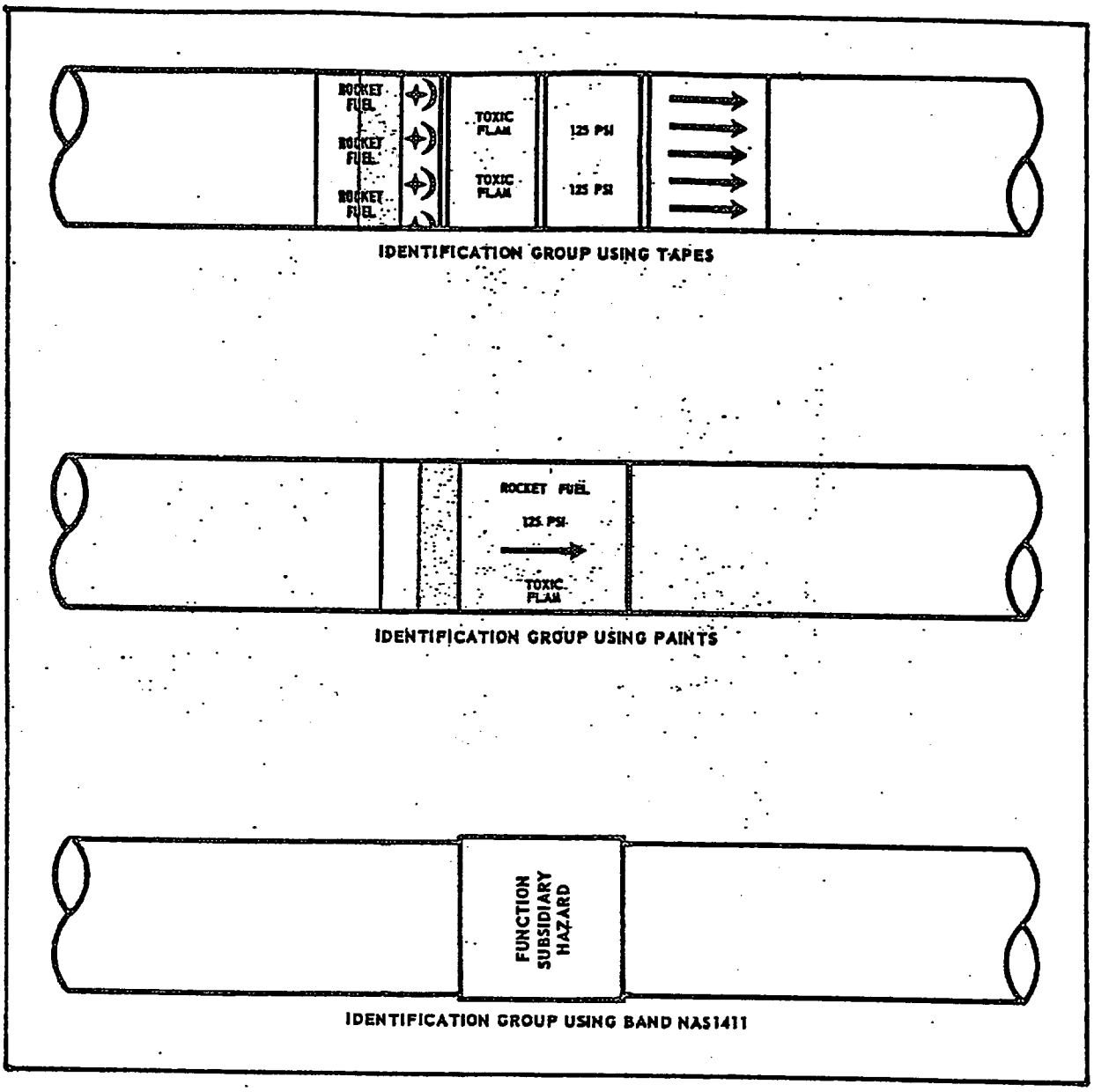


FIGURE 1. Examples of identification groups.

Downloaded from http://www.everyspec.com

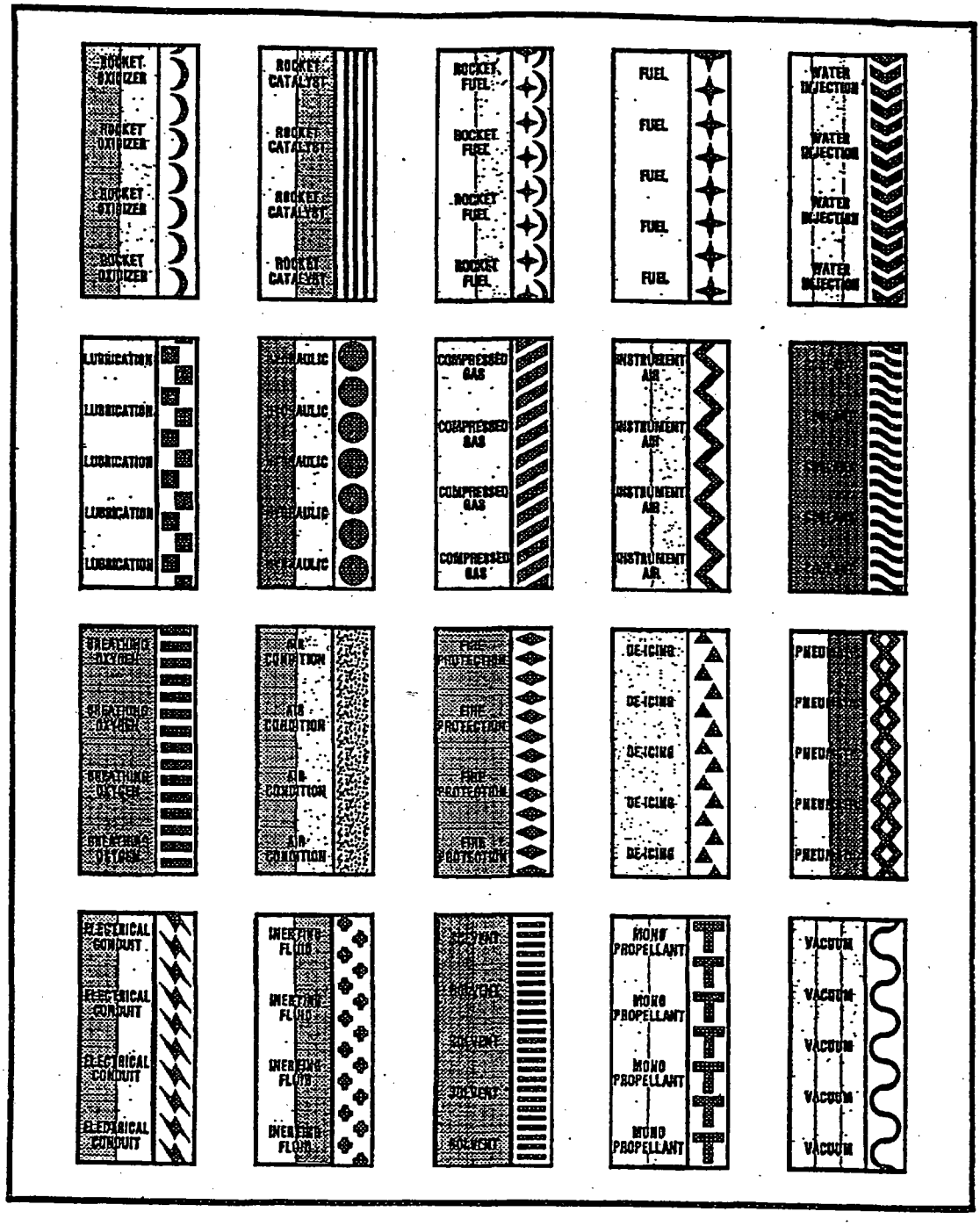


FIGURE 2. Color-coded functional identification tapes.

Downloaded from http://www.everyspec.com

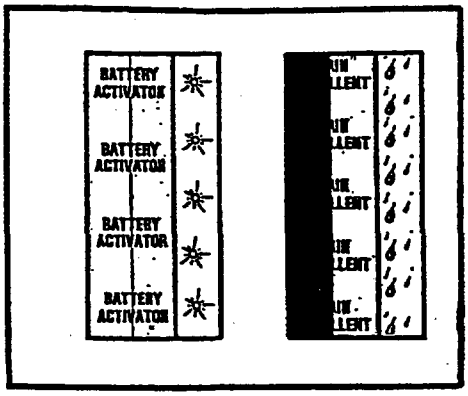


FIGURE 2. Color-coded functional identification tapes (continued).

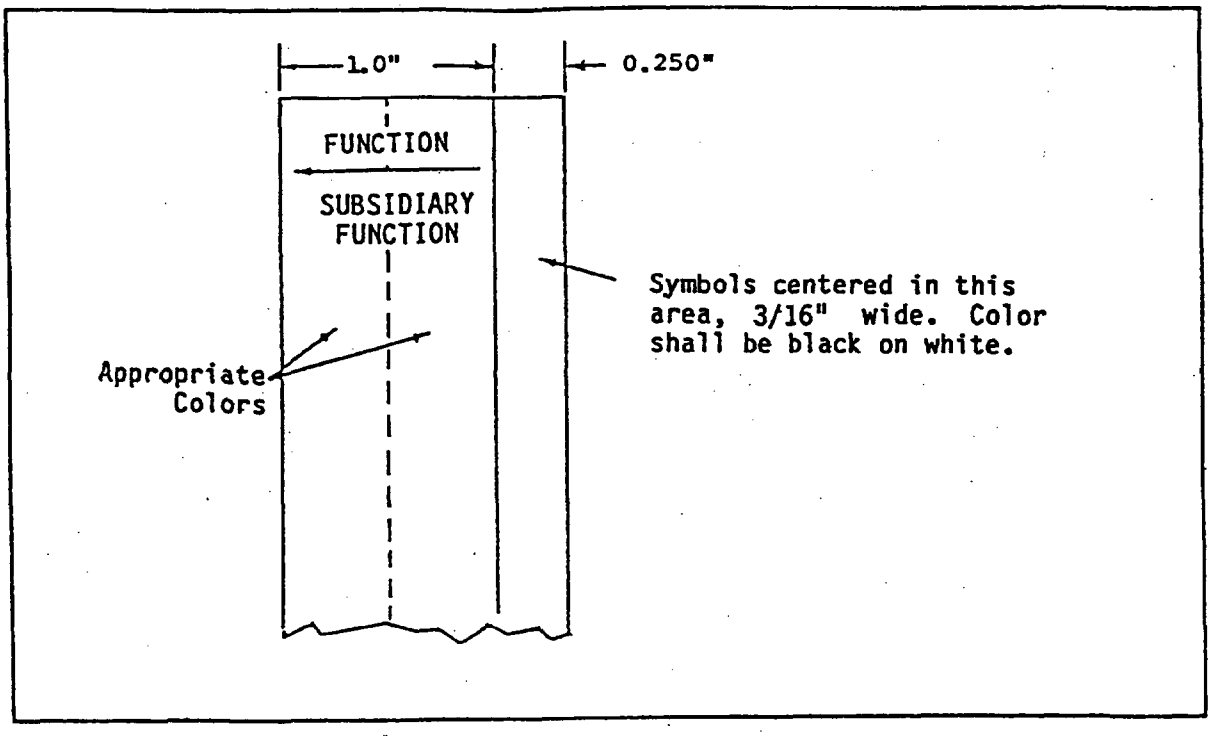
1. Warning symbols to be printed on tapes.
2. Maximum width of tape ½ inch. Clearance between the symbol and the edge of the tape on either side, shall be approximately one-fourth the width of the symbol.
3. Symbol to be black on a white or metallic (silvery or chrome) background.
4. Symbols shall recur at a maximum interval of ¼ inch.
5. This symbol should be used sparingly and should not be used on lines to warn against high pressure, or against a hazard already identified.
6. The warning symbol shall be placed immediately adjacent to the identification group at the end opposite the functional tape.

NOTE:

1. This symbol may be stenciled on tags and painted bands, or stamped on aluminum alloy tags.

FIGURE 3. Warning symbols.

Downloaded from http://www.everyspec.com



NOTES:

1. Letters shall be printed in black, 3/32 inch high with 1/32 inch between lines of a legend and 1/4 inch between a legend and its repetition.
2. Arrow shall be black, head 3/32 inch high, and shaft 1/32 inch wide.
3. Arrow to have head on both ends for reversible flow.
4. Colors shall conform to Paragraph 5.1.1 and Symbols as shown in Table I.
5. Tape shall be a minimum of 1 inch wide.

FIGURE 4. Optional arrangement for identification.

Downloaded from http://www.everyspec.com

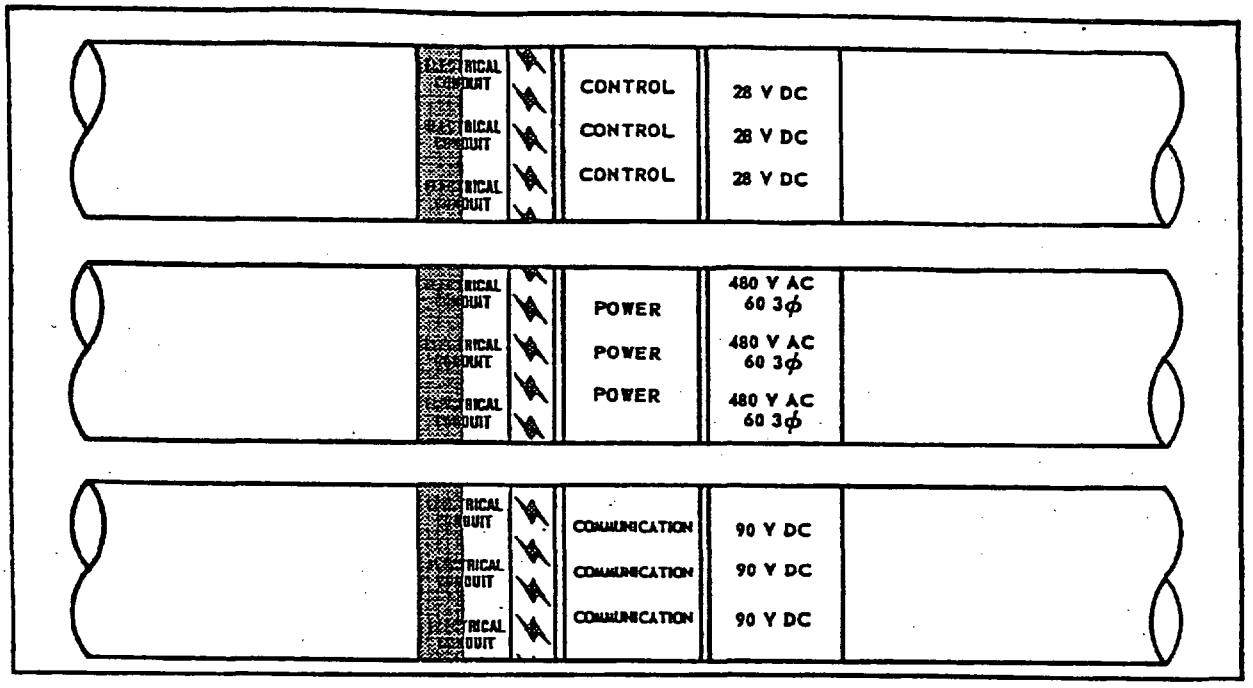
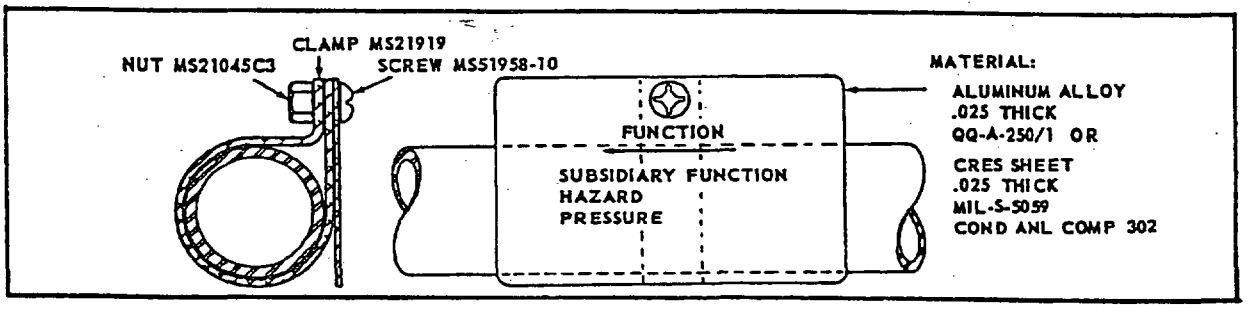


FIGURE 5. Examples of electrical identification.



NOTES:

1. Tag sizes shall be compatible with the diameter of the tubing.
2. Size of letters for wording on tag shall be compatible with tag.
3. Arrow size shall be compatible with letters.
4. Arrow shall have head on both ends for reversible flow.
5. If temperature exceeds 500°F (260°C) or if tags are used on Liquid Oxygen (LOX) lines, remove cushion from clamp and use plain clamp.
6. More than one clamp may be used if required for rigidity.

FIGURE 6. Tag identification.

Downloaded from http://www.everyspec.com

INDEX

Downloaded from http://www.everyspec.com

INDEX

CONCLUDING MATERIAL

Custodians:
Army - MI
Navy - AS
Air Force - 99

Preparing Activity:
Army - MI

(Project No. SAFT-0025)

International Interest: (Para 6.4)

Review Activities:
Army - AR, AV
Navy - OS, MC
Air Force - 10, 11, 12, 14, 19, 68
DLA - GS