

MIL-N-12279F
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SUPERSEDING
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MILITARY SPECIFICATION

NOZZLES, FIRE HOSE, FOAM

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers air-foam-producing nozzles for general application in fire fighting.

1.2 Classification. The nozzles shall be of the following types, classes, and internal thread sizes for connection to fire hose, as specified (see 6.2):

- Type I - Stream, air-aspirating, with pickup tube
- Class B - Without pack
 - Size - 1-1/2-inch, 30 to 40 gallons per minute (gpm)
(100 pounds per square inch gage (psig))
 - Size - 1-1/2-inch, 60 gpm (100 psig)
- Class C - Flexible tube applicator, 1-1/2-inch, 60 gpm
(100 psig)

FSC 4210

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Mobility Equipment Research and Development Command, ATTN: DRDME-DS, Fort Belvoir, VA 22060 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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Type II - Stream, air-aspirating, without pickup tube

Size - 1-1/2-inch, 30 to 40 gpm (100 psig)

Size - 1-1/2-inch, 60 gpm (100 psig)

Size - 2-1/2-inch, 120 gpm (100 psig)

Size - 2-1/2-inch, 250 gpm (100 psig)

Size - 3-1/2-inch, 500 gpm (100 psig)

Size - 4-1/2-inch, 1000 gpm (100 psig)

Type III - Spray, air-aspirating, with shaper and screen**Class A - Plain**

Size - 3-1/2-inch, 500 gpm (100 psig)

Class B - Valved

Size - 1-1/2-inch, 60 gpm (100 psig)

Size - 2-1/2-inch, 200 gpm (100 psig)

Size - 3-1/2-inch, 500 gpm (100 psig)

Type IV - Spray, air-aspirating, variable pattern**Class A - Plain**

Size - 3-1/2-inch, 500 gpm (100 or 150 psig)

Class B - Valved

Size - 2-1/2-inch, 200 gpm (100 psig)

Size - 3-1/2-inch, 500 gpm (100 or 150 psig)

2. APPLICABLE DOCUMENTS

2.1 Issues of documents. The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

SPECIFICATIONS**FEDERAL**

O-F-555

- Foam Liquid, Fire Extinguishing, Mechanical.

QQ-B-613

- Brass, Lead and Nonlead: Flat Products (Plate, Bar, Sheet, and Strip).

QQ-B-626

- Brass, Lead and Nonlead: Rod, Shapes, Forgings, and Flat Products with Finished Edges (Bar and Strip).

QQ-C-390

- Copper Alloy Castings (Including Cast Bar).

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QQ-Z-325

- Zinc Coating, Electrodeposited, Requirements for.

WW-T-700/6

- Tube, Aluminum Alloy, Drawn, Seamless, 6061.

GGG-W-665

- Wrench, Spanner.

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MIL-P-514

- Plates, Identification, Instruction and Marking, Blank.

MIL-T-704

- Treatment and Painting of Materiel.

MIL-P-775

- Packaging of Hose, Hose Assemblies; Rubber, Plastic, Fabric, or Metal (Including Tubing); and Fittings, Nozzles, and Strainers.

MIL-E-5272

- Environmental Testing, Aeronautical and Associated Equipment, General Specification for.

MIL-S-6872

- Soldering Process, General Specification for.

MIL-B-7883

- Brazing of Steels, Copper, Copper Alloys, Nickel Alloys, Aluminum and Aluminum Alloys.

MIL-R-14328

- Rubber Sheet: Synthetic, Medium Soft, General-Purpose Gasket Material (for Extreme Climatic Conditions).

STANDARDS

FEDERAL

FED-STD-H28

- Screw-Thread Standards for Federal Services

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MIL-STD-105

- Sampling Procedures and Tables for Inspection by attributes.

MIL-STD-130

- Identification Marking of US Military Property.

MIL-STD-1188

- Commercial Packaging of Supplies and Equipment.

(Copies of specifications and standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

(Application for copies should be addressed to the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 47 - Malleable Iron Castings.
- A 513 - Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
- B 16 - Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines.
- B 26 - Aluminum-Alloy Sand Castings.
- B 117 - Salt Spray (Fog) Testing.
- B 124 - Copper and Copper Alloy Forging Rod, Bar and Shapes.
- B 584 - Copper Alloy Sand Castings for General Applications.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

AMERICAN WELDING SOCIETY, INC. (AWS)

D1.1 - Structural Welding Code.

(Application for copies should be addressed to the American Welding Society, 2501, NW 7th Street, Miami, FL 33125).

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

National Fire Code, Volume 1, No. 11, Foam Extinguishing Systems.

(Application for copies should be addressed to the National Fire Protection Association, 60 Batterymarch Street, Boston, MA 02110.)

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3. REQUIREMENTS

3.1 Description. The nozzles shall be capable of producing air-foam at the nominal capacities specified herein from foam-forming liquid conforming to O-F-555.

3.2 First article (preproduction model). The contractor shall furnish one or more nozzles as specified (see 6.2) for examination and testing within the time frame specified (see 6.2) to prove prior to starting production that his production methods and choice of design detail will produce nozzles that comply with the requirements of this specification. Examination and tests shall be as specified in Section 4 and shall be subject to surveillance and approval by the Government (see 6.3).

3.3 Material. Material shall be as specified herein. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification (see 6.5).

3.3.1 Aluminum tubing. Aluminum tubing shall conform to WW-T-700/6, Temper T6.

3.3.2 Steel tubing. Steel tubing shall conform to ASTM A 513.

3.3.3 Brass. Brass bars shall conform to QQ-B-626, Composition 11 or ASTM B 16. Brass sheet shall conform to QQ-B-613, Composition 11, quarter-hard or half-hard temper. Drop-forged brass shall conform to ASTM B 124, Alloy C37700. Cast brass shall conform to QQ-C-390, Alloy 857 or 852 or shall conform to ASTM B584, Alloy C83600.

3.3.4 Malleable cast iron. Malleable cast iron shall conform to ASTM A 47.

3.3.5 Cast aluminum. Cast aluminum shall conform to ASTM B 26, Alloy B443.0 or D712.0.

3.3.6 Castings. Holes in castings shall not be permitted.

3.4 Threads. All screw threads shall be American National fire-hose coupling threads (NH) conforming to FED-STD-H28, except when specified (see 6.2), 1-1/2-inch threads shall have 11-1/2 American National hose coupling thread (NPSH) per inch.

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3.4.1 Gaskets. Each internal thread connection shall be furnished with a rubber gasket. Gaskets shall be rubber conforming to MIL-R-14328 and dimensions shall be as shown in Table I.

Table I. Gasket Dimensions

Thread Size (inches)	Inside Diameter (inches)	Outside Diameter (inches)	Thickness (inch)
1-1/2	1-9/16	2-1/16	1/8
2-1/2	2-9/16	3-3/16	3/16
3-1/2	3-3/4	4-1/4	3/16
4-1/2	5	5-3/4	3/16

3.5 Nozzles. Nozzles shall be aluminum, brass, or zinc-plated malleable iron, or zinc-plated steel, as specified (see 6.2 and 6.6). When specified (see 6.2), material for Types I and II nozzles shall be corrosion resistant, and material for Types III and IV nozzles shall conform to ASTM B 584, Alloy 836. The nozzles shall withstand a hydrostatic pressure not less than 1-1/2 times the specified operating pressure without any deformation of the nozzles or leakage.

3.6 Lugs. Lugs shall be designed for use with spanner wrenches conforming to GGG-W-665. Lugs, where required, shall be of the rocker type (see 6.2).

3.7 Rough usage. The nozzles shall perform as specified herein after rough usage. Rough usage shall be defined as the equivalent of dropping the nozzles on concrete from a height of 30 inches.

3.8 High temperatures. When subjected to a temperature of 71° C for a period of 48 hours, the valves shall not stick, bind, or have any other malfunction that may affect their operation.

3.9 Corrosion. Nozzles shall operate without binding or sticking. When subjected to the salt-spray test specified in 4.5.2.2, the nozzles shall have no malfunction that might affect their operation.

3.10 Performance. The nozzle performance, when foam liquid at 5 to 7 percent solution in water is used at 70° F, shall meet the following operating requirements:

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<u>Nozzle Pressure</u> (psig)	<u>Expansion Factor</u>	<u>One-Quarter Drainage Time</u> (minutes)
100	6-10	3.5 - 7.5
225 ^{1/}	6-10	4.0 - 7.5

^{1/} Operating pressure shall be 100 psig for all nozzles unless otherwise specified (see 6.2).

Variance from the nominal value of the water flow rate at 100 psig nozzle pressure shall not exceed plus or minus 5 percent. Each nozzle of 120- and 250-gpm capacity shall be furnished with two ring-type handholds, one located at the nozzle tip and the other at a convenient station near the nozzle butt end. While being held by the operator, the handholds shall not interfere with air intake.

3.11 Identification marking. The nozzles shall be identified in accordance with MIL-STD-130. The marking shall be applied to the nozzles on plates conforming to MIL-P-514, Composition C, of Type I, Grade A, Class 1 material. Each plate shall be attached by screws, bolts, or rivets in a location where the plate will be both visible and legible.

3.12 Treatment and painting. The portions of the nozzles normally painted shall be cleaned, treated, and painted in accordance with MIL-T-704, Type A, Color No. 14087 or No. 11136, as specified (see 6.2). All threaded and sliding ferrous parts shall be zinc-plated in accordance with QQ-Z-325, Type I, Class 2. Aluminum alloy parts shall not be painted or dyed.

3.13 Type I, stream, air-aspirating, with pickup tube. The Type I nozzle shall consist of a water-discharge jet or jets, an aerating chamber, a pipe-type mixing chamber, an internally threaded coupling fitted with water strainer for attachment to a water hose, and a tube to pick up liquid foam concentrates directly from a container. The water strainer may be omitted in 1-1/2-inch nozzles, provided a 3/8-inch-diameter ball can pass through the nozzle. The pickup tube shall be 70 inches long and shall consist of a bushing for attaching to the foam nozzle, flexible tube, and a rigid extension having a pickup end for insertion into a foam-liquid can. The bushing shall have an external 3/4-inch national garden-hose thread and shall be attached to the flexible tubing. The tubing shall withstand a vacuum of 25 inches of mercury without collapsing. The rigid extension shall be 1/4-inch standard-weight pipe 15 inches long and shall be attached to the flexible tube. The pickup end shall be enlarged and castellated to promote pickup, and shall contain a corrosion-resisting steel foam strainer (or brass strainer, when brass is specified as the material for construction

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of the nozzle), having a nominal thickness of 0.025 inch and 1/16-inch-diameter holes on 1/8-inch centers. The end of the extension shall have a removable screw cap or insert to permit removal and cleansing of the foam strainer. The pickup-tube hose assembly shall be attached to the nozzle-body internal connection by the 3/4-inch, threaded external fitting. When operating at a 3-foot differential between the nozzle and the level of foam liquid at 100 psig nozzle pressure, the minimum effective range shall be 45 feet for the nominal capacities specified. The nozzle shall meet the following operating requirements when using the pickup tube or when used with premixed solution:

Thread Size (inches)	Nominal Water Capacity at 100 psig (gpm)	Expansion Factor
1-1/2	30 to 40	6 to 10
1-1/2	60 +5	6 to 10

3.13.1 Class B, without pack. The Type I, Class B nozzle (see Figure 1) shall conform to 3.13 and consist of a nozzle and pickup-hose assembly (see 6.4).

3.13.2 Class C, flexible tube applicator, 1-1/2-inch, 60 gpm (100 psig). Type I, Class C nozzle (see Figure 2) consisting of pickup tube, flexible applicator, and retaining chain, shall have a nominal 60-gpm water capacity at 100 psig (see 6.4). When specified (see 6.2), the butt end of the nozzle shall have a swivel connection with internally threaded 1-1/2 - 11-1/2 NPSH threads. A boss, threaded to receive the pickup tube specified in 3.13, shall be furnished in the nozzle body and fitted with a closure plug. A 24-inch length of 2-1/2-inch outside diameter (O.D.) flexible tubing with a permanently attached metal tip shall be mounted on a metal tube which extends from the mixing chamber. The flexible tubing shall be a spirally wound steel spring, covered with neoprene-coated cloth. The flexible tubing shall extend approximately 2 inches over the metal tubing and the tip base. The tip end shall be smooth and round; exposed portions of the tip and the mixing-chamber tube shall be 5-3/4 to 6-1/4 inches and 4-3/4 to 5-1/4 inches long, respectively. The tip base and the metal tube shall have a metal ring or clamp mounted so that it may rotate about the axis of the tube but cannot slide longitudinally, and shall be located approximately 1/4 inch from the flexible tubing. The tip ring or clamp shall have a metal eye securely mounted on it, and the metal-tube ring or clamp shall have a hook securely mounted on it. A 28- to 32-inch length of chain shall be fastened to the eye, and the free end shall be secured on the hook.

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3.14 Type II, stream, air-aspirating, without pickup tube. The Type II nozzle shall be used to expand foam from premix foam solution. The nozzle shall be of the rigid-pipe type and shall include an aerating chamber and a water jet or jets. A strainer for the 1-1/2-inch nozzle shall be provided except as specified in 3.13, and the strainer may be omitted for the 2-1/2-inch and larger nozzles provided a 1/2-inch ball can pass through the nozzle. The discharge capacity and range of the nozzles shall conform to Table II.

Table II. Type II Operating Requirements

Thread Size (inches)	Nominal Water Capacity at 100 psig (gpm)	Range (feet)
1-1/2	30 to 40	45
1-1/2	60 +5	45
2-1/2	120 +5	65
2-1/2	250 +5	85
3-1/2	500 +5	125
4-1/2	1000 +5	125

3.15 Type III, spray, air-aspirating, with shaper and screen. The Type III nozzle (see Figure 3) shall consist of water-solution discharge jets, an aerating chamber or an air-mixing chamber, and a spray-pattern device (see 6.4). Unless otherwise specified (see 6.2), the Type III nozzle shall be furnished with both shaper and screen. A strainer shall be provided except as specified in 3.14. Performance requirements for Type III nozzles shall be as shown in Table III.

Table III. Type III Operating Requirements

Items (Type III)	Thread Size (inches)	Nominal Water Capacity (gpm at 100 psig)	Range (minimum) (feet)	Minimum Expansion Factor	Quarter Drainage Time (minutes)
Class A, plain	3-1/2	500 +5	40	6-10	3.5 - 7.5
Class B, valved	1-1/2	60	25	6-10	3.5 - 7.5
Class B, valved	2-1/2	200 +5	70	6-10	3.5 - 7.5
Class B, valved	3-1/2	500 +5	40	6-10	3.5 - 7.5

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3.15.1 Class B, valved nozzle. A force not greater than 15 pounds, before and after 5 days exposure to salt spray (see 4.5.2.2), shall be required at the valve handle extremity to open or close the nozzle at 100 psig nozzle back pressure.

3.16 Type IV, spray, air-aspirating, variable pattern. The Type IV nozzle shall consist of water-solution discharge jets, an aerating chamber or air-mixing chamber, and a variable-pattern mechanism. A strainer shall be provided except as specified in 3.14. The discharge capacity shall be as shown in Table IV.

Table IV. Type IV Operating Requirements

<u>Item (Type IV)</u>	<u>Thread Size</u> (inches)	<u>Nominal Water Capacity</u> (gpm at 100 psig)
Class A (plain)	3-1/2	*500 +5
Class B (valved)	2-1/2	200 ± 5
Class B (valved)	3-1/2	*500 ± 5

*Alternate rating of 150 psig.

3.16.1 Class B, valved nozzle. Valved nozzles shall perform as specified in 3.15.1.

3.17 Workmanship.

3.17.1 Castings and forgings. All parts, components, and assemblies of the nozzles which include castings and forgings shall be clean of harmful extraneous material such as sand, dirt, sprues, scale, and flux. Rework shall be limited to procedures which do not reduce mechanical properties or affect function.

3.17.2 Metal fabrication. Metal used in fabrication shall be free from kinks and sharp bends. The straightening of material shall be done by methods that will not cause injury to the material. Corners shall be square and true. Flame-cutting, using tips suitable for the thickness of the steel may be employed instead of shearing and sawing. All bends shall be made with controlled means to insure uniformity of size and shape. Precaution shall be taken to avoid overheating. Heated steel shall be allowed to cool slowly. External surfaces shall be free of burrs, sharp edges, and corners, except when sharp edges or corners are required or where they are not detrimental to safety.

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3.17.3 Welding. The aluminum surfaces of parts to be welded shall be free from scale, paint, grease, oxide film, and other foreign matter. The welding shall be done by the inert gas, shielded arc method. Welds may be ground, filed, buffed, or chipped but shall not be hammered, and shall be free from discontinuities such as base metal cracks adjacent to or behind welds, cracks in weld metal, undercutting of base metal, lack of fusion with parent metal or between parts, lack of penetration, lack of prescribed fit, or spatter.

3.17.4 Welders. Before assigning any welder to manual welding work covered by this specification, the contractor shall provide the contracting officer with certification that the welder has passed qualification tests as prescribed by either of the following listed codes for the type of welding operations to be performed and that such qualification is effective as defined by the particular code:

AWS D1.1 Structural Welding Code, Section 5, Qualification.
ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

Contractors who make only horizontal welds need not qualify welders for "all position welding". Subject to approval by the Government, the contractor's standard welder qualification may be substituted in lieu of the above codes provided that the contractor's procedure is equivalent to the above codes. The contractor shall be responsible for determining that automatic welding equipment operators are capable of producing quality welds in accordance with AWS or ASME codes.

3.17.5 Brazing. Brazing of steel, copper alloys, and nickel alloys shall conform to MIL-B-7883 or MIL-S-6872 when using Type SN50 solder. Unless otherwise specified (see 6.2), brazing of aluminum and aluminum alloys shall not be permitted.

3.17.6 Machine work. Tolerances and gages for metal fits shall conform to the limitations specified herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Component and material inspection. The contractor is responsible for insuring that components and materials used are manufactured, examined, and tested in accordance with referenced specifications and standards, as applicable.

4.2 Classification of inspections. The inspection requirements are classified as follows:

- (a) Preproduction inspection (see 4.3).
- (b) Quality conformance inspection (see 4.4).
- (c) Inspection of packaging (see 4.6).

4.3 Preproduction inspection.

4.3.1 Examination. The preproduction nozzle shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 Tests. The preproduction nozzle shall be tested as specified in 4.5.2, as applicable. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Lot. For the purpose of inspection, a lot shall consist of all nozzles of the same type, class, and size offered for delivery at one time.

4.4.2 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105.

4.4.3 Examination.

4.4.3.1 Individual. Each nozzle shall be examined for the critical characteristics specified in 4.5.1. Presence of a critical characteristic shall be cause for rejection.

4.4.3.2 Samples. Samples selected in accordance with 4.4.2 shall be examined for the major and minor characteristics specified in 4.5.1. AQL shall be 2.5 percent defective for major characteristics and 6.5 percent defective for minor characteristics.

4.4.4 Tests.

4.4.4.1 Individual. Each nozzle shall be tested as specified in 4.5.2.4 and 4.5.2.6, as applicable. Failure of any test shall be cause for rejection.

4.4.4.2 Samples. Samples selected in accordance with 4.4.2 shall be tested as specified in 4.5.2.3, 4.5.2.5, 4.5.2.5.1, and 4.5.2.6. AQL shall be 2.5 percent defective.

4.5 Inspection procedure.

4.5.1 Examination. The nozzles shall be examined as specified herein for the following characteristics:

Critical

1. Holes in casting.

Major

101. Type, Class, and size not as specified.
102. Material not as specified.
103. Threads not as specified.
104. Thread connection gaskets missing or not as specified in Table I.
105. Lugs not as specified.
106. Handholds not as specified.
107. Nozzle components missing or not as specified.
108. Workmanship not as specified.

Minor

201. Identification marking missing, incomplete, or not legible.
202. Treatment and painting not as specified.

4.5.2 Tests.

4.5.2.1 Test conditions. Unless otherwise specified in a test, tests shall be performed without shelter and at the climatic conditions existing at the place of test. The nozzles shall operate as specified herein without maintenance other than the contractor's recommended normal scheduled maintenance as established by a maintenance schedule prepared and submitted by the contractor prior to test.

4.5.2.1.1 Test materials. Unless otherwise specified (see 6.2), for preparation of water solutions for test, foam liquid shall conform to O-F-555 and the water shall be fresh.

4.5.2.2 Corrosion. Subject the nozzle to salt spray for a period of 5 days in accordance with ASTM B117. Examine the nozzle and subject the nozzle to the tests specified in 4.5.2.3 through 4.5.2.8.

4.5.2.3 Discharge capacity. The discharge capacities shall be determined in accordance with the method prescribed in NFPA National Fire Code. Capacities other than those specified in 3.13, 3.14, 3.15, or 3.16 shall constitute failure of this test.

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4.5.2.4 Hydrostatic pressure. Hydrostatic pressure tests shall be conducted using commercial or equivalent hydrostatic testing apparatus. The nozzles shall be hydrostatically tested at 1-1/2 times the specified operating pressure. Any deformation of the nozzles or leakage shall constitute failure of this test.

4.5.2.5 Foam expansion. Flowmeters, tanks, drainage pans, and other apparatus used in the foam expansion test shall be calibrated (or capacities calculated as required) before tests. Foam expansion other than that specified in 3.10 shall constitute failure of this test.

4.5.2.5.1 Foam quarter-drainage time. The procedure and details of determining foam quarter-drainage shall be in accordance with NFPA National Fire Code, Volume 1, No. 11. Nonconformance to the drainage time requirements specified in 3.10 or Table III shall constitute failure of the tests.

4.5.2.6 Nozzle range. Range shall be determined with the apparatus and facilities specified by NFPA, and the range will be that distance beyond which 85 percent of the net foam produced in the test falls. The nozzle holder may be oscillated through a horizontal angle of 20 degrees during the determination so that a wider foam blanket, and hence more easily calculated volume of foam, will be produced. Nonconformance to 3.13, Table II, or Table III, as applicable, shall constitute failure of this test.

4.5.2.7 Vacuum, for Type I, flexible tube only. Apply a vacuum of not less than 25 inches of mercury to the flexible pickup tube, with one end effectively sealed. Collapse of the tube shall constitute failure of this test.

4.5.2.8 Pull (valved nozzles only). Operate the nozzle at 100 psig nozzle back pressure and note the force required to open and close the valve at the handle extremity. Nonconformance to 3.15.1 shall constitute failure of this test.

4.5.2.9 Shock. The nozzle shall be dropped onto a hard surface (such as a concrete slab) from a height of 30 inches, once for each position specified below. Nonconformance to 3.7 shall constitute failure of this test.

- (a) Longitudinal axis horizontal.
- (b) Longitudinal axis at 60 degrees from vertical (tip end down).
- (c) Longitudinal axis at 60 degrees from vertical (butt end down).

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4.5.2.10 High temperature. The nozzle shall be subjected to high temperatures in accordance with MIL-E-5272, Procedure II. At 71° C, moving parts of the nozzle shall be operated, and any sticking, binding, or any other malfunction shall constitute failure of this test.

4.6 Inspection of packaging. The preservation, packing, and marking for Level A or B shall be examined and tested to determine conformance with the quality assurance provisions of MIL-P-775. The commercial preservation, packing and marking shall be examined to determine compliance with MIL-STD-1188.

5. PACKAGING

5.1 Preservation. Preservation shall be Level A or Commercial, as specified (see 6.2).

5.1.1 Level A. Nozzles shall be preserved in accordance with the Level A preservation and packaging requirements of MIL-P-775.

5.1.2 Commercial. Nozzles shall be preserved in accordance with MIL-STD-1188.

5.2 Packing. Packing shall be Level A, Level B, or Commercial as specified (see 6.2).

5.2.1 Level A. Nozzles shall be packed in accordance with the Level A packing requirements of MIL-P-775.

5.2.2 Level B. Nozzles shall be packed in accordance with the Level B packing requirements of MIL-P-775.

5.2.3 Commercial. Nozzles shall be packed in accordance with MIL-STD-1188.

5.3 Marking.

5.3.1 Military. Marking for military levels of protection shall be in accordance with the requirements specified in MIL-P-775.

5.3.2 Commercial. Commercial packing shall be in accordance with MIL-STD-1188.

6. NOTES

6.1 Intended use. The foam nozzles are intended for use in generating foam to extinguish fires involving oils, greases, or flammable, volatile liquids.

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6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Type, class, and size required (see 1.2).
- (c) Time frame required for submission of preproduction model, and number of nozzles required (see 3.2).
- (d) When 1-1/2-inch threads shall have 11-1/2 threads per inch (NPSH) (see 3.4 and 3.13.2).
- (e) When lugs are required (see 3.6).
- (f) Whether aluminum, brass, or zinc-plated malleable iron or zinc-plated steel nozzles are required (see 3.5).
- (g) When material for Types I and II nozzles shall be corrosion resistant and material for Types III and IV shall conform to ASTM B 584, Alloy 836 (see 3.5).
- (h) When operating pressure is to be 225 psi (see 3.5).
- (i) Whether Color No. 14087 or 11136 is required (see 3.12).
- (j) When Type III nozzle is to be furnished without shaper or without screen (see 3.15).
- (k) When brazing of aluminum and aluminum alloys is permitted (see 3.17.5).
- (l) Test solution materials, if other than as specified (see 4.5.2.1.1).
- (m) Degree of preservation and degree of packing required (see 5.1 and 5.2).

6.3 Preproduction model. Any changes or deviations of production nozzles from the approved preproduction model during production will be subject to the approval of the contracting officer. Approval of the preproduction model will not relieve the contractor of his obligation to furnish nozzles conforming to this specification.

6.4 Information figures. Figures 1, 2, and 3 show types of nozzles which have been found acceptable; however, the figures are included for illustration only and are not intended to preclude the furnishing of other nozzles which conform to this specification.

6.5 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the specification (see 3.3).

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6.6 Shipboard use. Aluminum nozzles or nozzles with aluminum parts are not to be used aboard ship.

Custodians:

Army - ME

Navy - YD

Preparing activity:

Army - ME

Project 4210-0331

Review activities:

Navy - SH

DSA - CS

User activity:

Navy - CG

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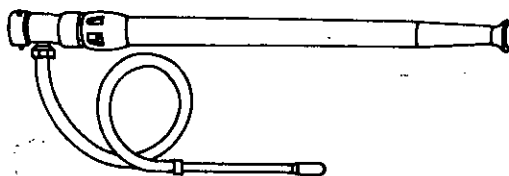


Figure 1. NOZZLE, TYPE I CLASS B

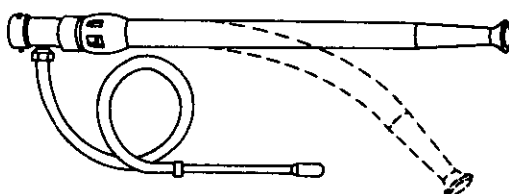


Figure 2. NOZZLE, TYPE I CLASS C

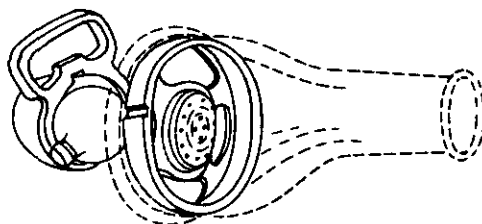


Figure 3. NOZZLE, TYPE III

CX1919

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSALOMB Approval
No. 22-R255

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DOCUMENT IDENTIFIER AND TITLE

MIL-N-12279F Nozzles, Fire Hose, Foam

NAME OF ORGANIZATION AND ADDRESS**CONTRACT NUMBER****MATERIAL PROCURED UNDER A**☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT**1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?****A. GIVE PARAGRAPH NUMBER AND WORDING:****B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES****2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID****3. IS THE DOCUMENT RESTRICTIVE?**☐ YES ☐ NO (If "Yes", in what way?)**4. REMARKS****SUBMITTED BY (Printed or typed name and address - Optional)****TELEPHONE NO.****DATE****DD FORM 1426**
1 JAN 72

REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED