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INCH-POUND
MIL-S-24235C(SH)
28 December 1992
SUPERSEDING
MIL-S-24235B(SH)
21 August 1989
(See 6.7)

MILITARY SPECIFICATION

STUFFING TUBES, METAL, AND PACKING ASSEMBLIES FOR ELECTRIC CABLES, GENERAL SPECIFICATION FOR

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers metal stuffing tubes for passing electrical cables through decks and bulkheads and entering enclosed equipment on Naval ships and packing assemblies for stuffing tubes.

1.2 Classification. Metal stuffing tubes and packing assemblies shall be types as specified (see 3.1 and 6.2).

1.2.1 Military part number. The military part number shall consist of the letter "M", the basic number of the specification sheet, and an assigned dash number (see 3.1) as shown in the following example:

M	24235/1	-001
Military designator	Specification sheet number	Dash number

1.2.2 Sizes. Sizes shall be as specified (see 3.1 and 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 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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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

L-P-410	- Plastic, Polyamide (Nylon) Rigid, Rods, Tubes, Flats, Molded and Cast Parts.
FF-W-84	- Washers, Lock (Spring).
FF-S-86	- Screw, Cap, Socket-Head.
QQ-A-250	- Aluminum and Aluminum Alloy Plate and Sheet: General Specification for.
QQ-A-250/2	- Aluminum Alloy 3003, Plate and Sheet.
QQ-A-250/11	- Aluminum Alloy 6061, Plate and Sheet.
QQ-A-591	- Aluminum Alloy Die Castings.
QQ-A-601	- Aluminum Alloy Sand Castings.
QQ-C-390	- Copper Alloy Castings (Including Cast Bar).
QQ-C-465	- Copper-Aluminum Alloys (Aluminum Bronze), (Copper Alloy Numbers 606, 614, 630, and 642); Rod, Flat Products with Finished Edges (Flat Wire, Strip and Bar), Shapes, and Forgings (Use ASTM B124, B150, B169 and B283).
QQ-C-502	- Copper Rods and Shapes; and Flat Products with Finished Edges (Flat Wire, Strips and Bars).
QQ-N-286	- Nickel-Copper-Aluminum Alloy, Wrought (UNS N05500).
QQ-S-763	- Steel Bars, Wire, Shapes and Forgings, Corrosion Resisting.
QQ-W-321	- Wire, Copper Alloy.
VV-G-671	- Grease, Graphite.
WW-T-700	- Tube, Aluminum Alloy, Drawn, Seamless, 5052 General Specification for.
WW-T-700/5	- Tube, Aluminum Alloy, Drawn, Seamless, 5086.
ZZ-R-765	- Rubber, Silicone.
PPP-F-320	- Fiberboard, Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.

MILITARY

MIL-C-17	- Cables, Radio Frequency, Flexible and Semirigid, General Specification for.
MIL-R-900	- Rubber Gasket Material, 45 Durometer Hardness.
MIL-S-901	- Shock Tests, H.I. (High-Impact): Shipboard Machinery, Equipment and Systems, Requirement for.
MIL-C-915	- Cable and Cord, Electrical, for Shipboard Use, General Specification for.
MIL-R-6855	- Rubber, Synthetic, Sheets, Strips, Molded or Extruded Shapes.

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MILITARY - Continued

MIL-S-8660 - Silicone Compound NATO Code Number S-736.
MIL-P-15024 - Plates, Tags and Bands for Identification of Equipment.
MIL-P-15024/5 - Plates, Identification.
MIL-R-15624 - Rubber Gasket Material, 50 Durometer Hardness (Maximum).
MIL-S-16974 - Steel Bars, Billets, Blooms and Slabs: Carbon and Alloy (For Reforging or Other Operations Before Heat Treatment), (Use DOD-F-24669/1).
MIL-I-17214 - Indicator, Permeability; Low-Mu (Go-No Go).
MIL-E-17555 - Electronic and Electrical Equipment, Accessories, and Provisioned Items (Repair Parts): Packaging of.
MIL-F-18240 - Fastener, Externally Threaded, 250°F Self-Locking Element for.
MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated.
MIL-S-21952 - Steel (HY-80 and HY-100) Bars, Alloy.
MIL-S-22698 - Steel Plate, Shapes and Bars, Weldable, Ordinary Strength, and Higher Strength: Structural.
MIL-S-23284 - Steel Forgings, Carbon and Alloy, For Shafts, Sleeves, Couplings, and Stocks (Rudders and Diving Planes).
MIL-S-24093 - Steel Forgings, Carbon and Alloy, Heat Treated.
MIL-B-24480 - Bronze, Nickel-Aluminum (UNS No. C95899), Castings for Seawater Service.
DOD-F-24669 - Forgings and Forging Stock, Steel Bars, Billets and Blooms, General Specification for (METRIC)
DOD-F-24669/1 - Forgings and Forging Stock, Steel (Carbon and Alloy), Blooms, Bars, Billets, and Slabs.
MIL-C-24707 - Castings, Ferrous, General Specification for.
MIL-C-24707/1 - Castings, Ferrous, for Machinery and Structural Applications.
MIL-C-24707/3 - Castings, Ferrous, Corrosion Resistant, Austenitic, Chromium-Nickel.
MS28775 - Packing, Preformed, Hydraulic, +275 Degree F, ("O" Ring).

HANDBOOK

MILITARY

MIL-HDBK-149 - Military Standardization Handbook, Rubber.

(See Supplement 1 for a list of associated specification sheets.)

STANDARDS

FEDERAL

FED-STD-H28 - Screw-Thread Standards for Federal Services.
FED-STD-H28/2 - Screw-Thread Standards for Federal Services, Section 2, Unified Inch Screw Threads - UN and UNR Thread Forms.

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MIL-STD-167-1 - Mechanical Vibrations of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited).

MIL-STD-889 - Dissimilar Metals.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4, Sec. D, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents 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).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

B46.1 - Surface Texture Surface Roughness, Waviness and Lay. (DOD adopted)

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

A 53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded, and Seamless.

A 108 - Standard Specification for Steel Bars, Carbon, Cold Finished, and Standard Quality.

A 322 - Standard Specification for Steel Bars, Alloy, and Standard Grades.

A 331 - Standard Specification for Steel Bars, Alloy Cold Finished.

A 441 - Standard Specification for High-Strength, Low-Alloy, Structural Manganese Vanadiumum Steel.

A 569 - Standard Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet, and Strip Commercial Quality.

B 124 - Standard Specification for Copper and Copper-Alloy Forging Rod, Bar and Shapes.

B 150 - Standard Specification for Aluminum Bronze Rod, Bar, and Shapes.

B 169 - Standard Specification for Aluminum Bronze Plate, Sheet, Strip, and Rolled Bar.

B 210 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.

B 211 - Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.

B 283 - Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed).

B 633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.

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D 2240 - Standard Test Method for Rubber Property - Durometer Hardness. (DOD adopted)

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

(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 (except for related associated detail specifications or specifications sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

3.2 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.4) in accordance with 4.3.

3.3 Materials. Materials shall be as specified (see 3.1). The contractor may select any material that will satisfactorily perform the intended function in the equipment and will otherwise comply with the requirements of this specification (see 6.2).

3.3.1 Dissimilar metals. Dissimilar metals shall be in accordance with MIL-STD-889.

3.3.2 Mercury. Mercury in any form shall not be used in shipboard equipment, including materials and parts thereof. Mercury shall not be used in manufacturing and test processes (including test equipment, such as mercury indicators) applying to the basic equipment; but may be used in the manufacturing and test processes for materials and parts provided it is used in such a way that the materials and parts themselves cannot be contaminated. No instruments containing mercury shall be used in the manufacture of testing of any equipment destined for installation on a nuclear powered ship.

3.3.3 Recovered materials. Unless otherwise specified herein, all equipment, material, and articles incorporated in the products covered by this specification shall be new and may be fabricated using materials produced from recovered materials to the maximum extent practicable without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specifically specified.

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3.4 Design and construction. The stuffing tubes, packing assemblies, and accessories (fitters and dummy plugs) shall be of the design, construction, and physical dimensions as specified (see 3.1).

3.4.1 Small miscellaneous hardware. Miscellaneous hardware such as screws and attachment chains shall be of a good commercial grade, corrosion-resistant or protected against corrosion. Self-tapping screws or other self-tapping devices shall not be used in the assembly of components.

3.4.2 Threads. Unless otherwise specified, threads shall be unified form (UN), class 2A or 2B as specified in FED-STD-H28 and FED-STD-H28/2. The nominal size and threads per inch shall be as specified in the applicable specification sheet.

3.4.3 Gland nuts. Gland nuts may be machined from wrought material or cast with an octagon-shaped head.

3.4.4 Castings. Cast components, such as split-type stuffing tube bodies or gland nuts, shall be free from cold shuts, blow holes, or any other imperfections that may in any way affect the strength or serviceability of the casting. Any fins or burrs on casting surfaces shall be removed.

3.4.5 Forming and machining operations. Forming and machining operations shall be completed before any specified plating or finish is applied.

3.4.6 Sharp edges. Sharp edges and corners shall be given a slight radius.

3.4.7 Surface finish of tube bodies and gland nuts. Unless otherwise specified (see 3.1), machined tube bodies and gland nuts shall have a maximum surface roughness of 250 microinches. Surface finish shall be in accordance with ANSI B46.1. Cast surfaces need not be machined and shall have a surface texture commensurate with the type of casting.

3.4.8 Pressureproof bulkhead stuffing tubes (submarines).

3.4.8.1 Material control. The contractor shall provide and maintain an objective quality evidence of chemical analysis and physical properties of tube body material per heat from the mill, traceable from the part number on the final product (see 4.5 and 6.3).

3.4.8.2 Tube body. For special applications requiring an extended tube body, the center section and the overall length dimension and material for submarine pressureproof bulkhead stuffing tubes shall be as specified (see 3.1 and 6.2).

3.4.8.3 Lock washer. Lock washer edges shall have a radius of approximately 1/32 inch, applied by tumbling or other means.

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3.4.9 Ballast tank stuffing tubes. Unless otherwise specified (see 6.2), ballast tank stuffing tubes shall be of the materials specified on the applicable specification sheet.

3.4.9.1 Packing gland retainer screws. Packing gland retainer (cap) screws shall meet the torque requirements of MIL-F-18240.

3.4.10 Enclosure stuffing tubes. Unless otherwise specified (see 6.2), enclosure stuffing tubes shall be of the material specified on the applicable specification sheet.

3.4.11 Deck and bulkhead stuffing tubes (surface ships). The material for the deck and bulkhead stuffing tubes shall be as specified on the applicable specification sheet.

3.4.11.1 Split tube body. A split-type tube body shall be cast as separate halves.

3.4.11.2 Gland nut. Gland nuts for split stuffing tube applications may be cast as two separate halves, or a whole gland nut may be halved by a 1/32 inch maximum saw cut for each half. Each half shall have its thread edges slightly chamfered to ensure proper mating with the stuffing tube assembly.

3.4.11.3 Gland ring. Gland rings shall be furnished split for split stuffing tubes. Whole gland rings may be halved by a 1/32 inch maximum saw cut for each half.

3.4.12 Weather deck outlets. Weather deck outlet components shall be nonmagnetic and of the materials specified on the applicable specification sheet.

3.4.12.1 Stuffing tube and stuffing tube cap assembly. The stuffing tube shall be coupled with the stuffing tube cap assembly by a 0.090 inch minimum, square, phosphor bronze wire. This coupling arrangement shall permit the stuffing tube cap assembly to rotate freely about the stuffing tube. The contractor may use another method of coupling the tube and cap, providing the strength of the joint is at least the equivalent of the present design.

3.4.12.2 Cap assembly. The cap assembly shall maintain integrity of the outlet when the electrical plug is removed. A chain, 9 inches in length, shall be securely attached to the cap by a method that will permit swivel movement of the cap.

3.4.12.3 Nonmagnetic parts. When tested as specified in 4.7.2, nonmagnetic metal parts shall indicate, prior to assembly, a permeability level less than 2.0.

3.4.13 Packing assemblies. A packing assembly shall consist of all the components specified on the applicable specification sheet. Unless otherwise specified (see 3.1), packing assemblies or prefabricated packing shall not be furnished as part of the stuffing tube assembly.

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3.4.13.1 Molded parts. Flash shall be removed from molded parts and the width of the flash edges made thereby shall be not greater than 1/32 inch.

3.4.13.2 Grommets. Unless otherwise specified (see 6.2), grommets shall be molded of synthetic rubber (neoprene) and shall have the durometer hardness specified on the applicable specification sheet when tested as specified in 4.7.1.

3.4.13.3 Grommet plates, split washers, and gland rings. Edges of grommet plates, split washers, and gland rings shall have a radius of approximately 1/32 inch to prevent cable or grommet damage. This may be accomplished by tumbling at the option of the contractor.

3.5 Marking.

3.5.1 Metal parts. Metal parts shall have the information shown on the applicable specification sheet permanently marked in 1/8-inch high letters by stamping, engraving, or a similar process.

3.5.2 Molded parts. Molded parts shall have the information shown on the applicable specification sheet molded in 1/8-inch high letters. The contractor may elect to indelibly stamp nylon washers in lieu of molding. Molded assemblies and parts may be marked in accordance with the applicable superseded drawing where the tooling has been built with identification markings of the superseded drawing, except the marking of this specification shall be used when the tooling requires reworking or replacing. When marked in accordance with the superseded drawing, the assemblies and parts shall be indelibly stamped with the applicable part number of this specification.

3.6 Workmanship. Stuffing tubes shall be finished in a workmanlike manner and shall be free from cracks, chipped edges or surfaces, uneven surfaces, dents and heat marks. Threaded parts shall show no evidence of cross threading, mutilation, or detrimental or hazardous burrs. All welds and brazes shall be free of defects such as cracks, porosity, undercuts, voids, and gaps. There shall be no burn-through. Fillets shall be uniform and smooth. Angular or thickness misalignment, warpage, or dimensional change due to heat from the operation shall be within permitted tolerances. There shall be no damage to adjacent parts resulting from the welding or brazing. They shall be free from burrs and from unsightly finish caused by chipping, filing, or grinding without subsequent buffing or polishing. Packing assemblies shall be free of voids, pin holes, flash or other imperfections which may impair their serviceability.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

(a) First article inspection (see 4.3).
(b) Quality conformance inspection (see 4.4).
(c) Material control objective quality evidence (see 4.5).

4.3 First article inspection. First article inspection shall be performed on sample units which have been produced with manufacturing equipment and procedures normally used in production. Acceptance shall be allowed for sizes of the individual parts that make up the stuffing tube assembly of the type tested and accepted (see 4.3.2).

4.3.1 Sample size. Two stuffing tubes of each type shall be subjected to first article inspection. One tube shall be one of the two smallest sizes and the other tube shall be one of the two largest sizes specified on the applicable specification sheet.

4.3.2 Inspection requirements. The samples shall be subjected to the inspections specified in table I in the order shown.

TABLE I. First article inspection.

Inspection	Requirement	Test method
Visual and dimensional examination	3.1, 3.3, 3.4, 3.5, and 3.6	4.6.1
Durometer hardness 1/	3.4.13.2	4.7.1
Permeability 2/	3.4.12.3	4.7.2

1/ Required only for synthetic rubber (neoprene) grommets.
2/ Required only for weather deck outlets.

4.4 Quality conformance inspection.

4.4.1 Inspection of product for delivery. Inspection of product for delivery shall consist of groups A and B inspection.

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4.4.1.1 Lot. For purposes of quality conformance inspection in accordance with 4.4.2 and 4.4.3, a lot is defined as aoo stuffing tubes or packing assemblies covered by one single specification sheet, produced in one facility, using the same material and production processes, and being offered for delivery at one time. Lot size shall not exceed 10,000 stuffing tubes or packing assemblies.

4.4.1.2 Sample size for quality conformance inspection. As a minimum, the contractor shall randomly select a sample quantity from each lot of completed stuffing tubes or packing assemblies in accordance with table II and subject them to the examinations of 4.6.1 and the tests of 4.7.1 and 4.7.2. The sample size for all inspections and tests depends on the lot size, with one exception. Durometer hardness shall always be tested on five pieces per lot regardless of size. If one or more samples fail any examination or test, the entire lot is rejected. The contractor has the option of screening 100 percent of the rejected lot for the defective characteristic(s) or providing a new lot, which shall be tested in accordance with the sampling plan herein. The contractor shall maintain for a period of three years after contract completion, records of inspections, tests, and any resulting rejections.

TABLE II. Sample size for quality conformance inspections and tests.

Lot size	Sample size	
	Sampling plan group A and packaging [1]	Sampling plan group B [2]
2 to 8	All	3
9 to 15	8	3
16 to 25	8	3
26 to 50	8	5
51 to 90	8	6
91 to 150	12	7
151 to 280	19	10
281 to 500	21	11
501 to 1200	27	15
1201 to 3200	35	18
3201 to 10,000	38	22

1/ Used for Group A inspections and for inspection of packaging.
2/ Varying sample size applicable to permeability test only. The durometer hardness test shall be applied to five samples per lot regardless of size.

4.4.2 Group A inspection. Group A inspection shall consist of the inspection specified in table III.

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TABLE III. Group A inspection.

Inspection	Requirement	Inspection method
Visual and dimensional examination	3.1, 3.3, 3.4, 3.5, and 3.6	4.6.1

4.4.3 Group B inspection. Group B inspection shall consist of the tests specified in table IV with samples selected from lots that have passed group A inspection. Sample size shall be in accordance with table II, group B.

TABLE IV. Group B inspection.

Inspection	Requirement	Test method
Durometer hardness 1/	3.4.13.2	4.7.1
Permeability 2/	3.4.12.3	4.7.2

1/ Required only for synthetic rubber (neoprene) grommets.
2/ Required only for weather deck outlets.

4.5 Material control objective quality evidence. Each bulkhead pressureproof stuffing tube shall be accompanied by material control objective evidence that the material conforms to all the requirements of the applicable specification sheet. The following information shall be a part of the objective evidence:

(a) Military part number (for example M24235/1-000).
(b) Contract number.
(c) Contractor's identity.
(d) Material certification with a statement to the effect that objective evidence is on file in support of material identification and heat treatment, traceable from the lot (see 3.4.8.1).
(e) Government procurement quality assurance representative.
(f) Signature or symbol of the Defense Contract Administration Services Management Area (DCASMA) representative.

The contractor shall pack one copy of the objective quality evidence with the item and retain a duplicate copy on file. The cognizant inspection service is authorized to withhold shipment until the required objective quality evidence is in accordance with this specification. Failure to provide acceptable objective quality evidence shall be cause for rejection of the material. Material control objective quality evidence in support of product quality shall be maintained by the contractor until completion of the contract and then turned over to the designated Government representative.

4.6 Examination.

4.6.1 Visual and dimensional examination. Samples shall be visually examined to verify that the materials, design, construction, physical dimensions, marking and workmanship are as specified in the applicable requirements (see 3.1, 3.3, 3.4, 3.5 and 3.6).

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4.7 Tests.

4.7.1 Durometer hardness. Sample grommets shall be subjected to the type A durometer test specified in ASTM D 2240 to verify compliance with the requirements of 3.4.13.2.

4.7.2 Permeability. Weather deck outlet metal parts shall be tested with a low-Mu permeability indicator conforming to MIL-I-17214 to verify compliance with the value specified in 3.4.12.3.

4.8 Inspection of packaging. Sample packs and the inspection of packaging (preservation, packing and marking) for shipment, stowage, and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition. For the extent of applicability of the packaging or preparation for delivery requirements of referenced documents listed in section 2, see 6.5.)

5.1 Packaging requirements. The packaging (preservation, packing and marking) requirements shall be in accordance with MIL-E-17555 for the level of preservation (A, B, C, or Commercial), the level of packing (A, B, C, or Commercial), and marking (see 5.1.1) and other packaging acquisitioning options therein, as specified (see 6.2). In addition, for Navy acquisitions, the following applies:

(a) Navy fire-retardant requirements.

(1) Lumber and plywood. Unless otherwise specified (see 6.2), all lumber and plywood including laminated veneer materials used in shipping container and pallet construction, members, blocking, bracing, and reinforcing shall be fire-retardant treated materials conforming to MIL-L-19140 as follows:

Level A and B	- Type II	- weather resistant
	Category I	- general use
Level C	- Type I	- non-weather resistant
	Category I	- general use

(2) Fiberboard. Fiberboard used in the construction of interior (unit and intermediate) and exterior fiberboard boxes including interior packaging forms shall conform to the class-domestic/fire retardant or class-weather resistant/fire retardant materials equipment as specified (see 6.2), of PPP-F-320 and amendments thereto.

5.1.1 Packs containing neoprene parts. Packs containing neoprene parts shall contain the cure date and precautionary markings as specified in MIL-R-6855.

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6. NOTES

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

6.1 Intended use. Stuffing tubes are intended for use in making watertight electrical cable penetrations through hulls, decks, bulkheads and into electrical equipment.

6.2 Acquisition requirements. Acquisition documents must specify the following:

(a) Title, number, and date of this specification.
(b) Title, number, and date of the applicable specification sheet and the type, size and part number.
(c) Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1 and 2.2).
(d) When first article inspection is required (see 3.2).
(e) Selection of material (see 3.3, 3.4.9 and 3.4.10).
(f) Dimensions for special applications requiring extended tube bodies and material for submarine pressureproof bulkhead stuffing tube (see 3.4.8.2 and the applicable specification sheet).
(g) When grommets are not to be molded of synthetic rubber (see 3.4.13.2).
(h) Level of preservation, packing and other packaging acquisitioning options required (see 5.1).
(i) When fire-retardant treated lumber and plywood is not required (see 5.1(a)(1)).
(j) Class of fire retardant fiberboard required (see 5.1(a)(2)).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/ provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
3.4.8.1 and 4.5	UDI-H-26373	Records objective quality evidence: for submarine safety/material certification.	-----
4.3.1	DI-RELI-80939	Test and Inspection report	-----

The above DID's were those cleared as of the date of this specification. The current issue of DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

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6.4 First article. When first article inspection is required, the contracting officer should provide specific guidance to offerors whether the item(s) should be a preproduction sample, a first article sample, a first production item, a sample selected from the first production items, a standard production item from the contractor's current inventory (see 3.1), and the number of items to be tested as specified in 4.3. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.5 Sub-contracted material and parts. The packaging or preparation for delivery requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.6 Subject term (key word) listing.

Dissimilar metals
Gland nut
Grommet
Kick-pipe
Permeability
Pressureproof bulkhead

6.7 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.

Preparing activity:
Navy - SH
(Project 5975-N078)

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
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1. DOCUMENT NUMBER: MIL-S-24235C(SH)
2. DOCUMENT DATE (YYMMDD): 92-12-28
3. DOCUMENT TITLE: STUFFING TUBES, METAL, AND PACKING ASSEMBLIES FOR ELECTRIC CABLES, GENERAL SPECIFICATION FOR

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

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a. NAME *(Last, First, Middle Initial)*

b. ORGANIZATION

c. ADDRESS *(Include Zip Code)*

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(2) AUTOVON *(If applicable)*

7. DATE SUBMITTED *(YYMMDD)*

8. PREPARING ACTIVITY

a. NAME Technical Point of Contact (TPOC):
Mr. Mike Mitrakas (SEA 05E23)
PLEASE ADDRESS ALL CORRESPONDENCE AS FOLLOWS:

b. TELEPHONE *(Include Area Code)*
(1) Commercial: (703) 602-2474
(2) AUTOVON: 8-332-2474

c. ADDRESS *(Include Zip Code)*
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