

INCH-POUND

MIL-P-24583B(SH)
22 August 1991
 SUPERSEDING
 MIL-P-24583A(SH)
 6 April 1990
 (See 6.5)

MILITARY SPECIFICATION

PACKING MATERIAL, GRAPHITIC OR CARBON BRAIDED YARN

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 establishes the requirements for staple or continuous filament graphitic or carbon yarn packing. Packing is for steam valve service on naval ships.

1.2 Classification. The material shall be of the following types, classes and grades, as specified (see 3.1 and 6.2).

- Type I - Continuous filament graphitic or carbon yarn
- Type II - Staple graphitic or carbon yarn
- Class 1 - For use where detrimental material and lubricant content of the packing need not be controlled beyond normal manufacturing limits.
- Class 2 - For use where detrimental material content must be controlled to limits specified herein.
- Class 3 - For use where detrimental material content need not be controlled beyond normal manufacturing limits, and stuffing box temperatures do not exceed 260 degrees Celsius ($^{\circ}\text{C}$) (500 degrees Fahrenheit ($^{\circ}\text{F}$)).
- Grade I - Treated with corrosion inhibitor
- Grade N - No corrosion inhibitor

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.

AMSC N/A

FSC 5330

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

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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

PPP-F-320 - Fiberboard: Corrugated and Solid, Sheet Stock (Container Grade) and Cut Shapes.

MILITARY

MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated.

STANDARDS

MILITARY

MIL-STD-2073-1 - DOD Materiel Procedures for Development and Application of Packaging Requirements.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, 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 SOCIETY FOR TESTING AND MATERIALS (ASTM)

C 135 - Standard Test Method for True Specific Gravity of Refractory Materials by Water Immersion.
 C 561 - Standard Test Method for Ash in a Graphite Sample.
 C 562 - Standard Test Method for Moisture in a Graphite Sample.
 C 816 - Test Method for Sulfur in Graphite by Combustion-Iodometric Titration Method.

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- C 889 - Standard Test Methods for Chemical and Mass Spectrographic Analysis of Nuclear-Grade Gadolinium Oxide (Gd_2O_3) Powder.
- D 129 - Test Method for Sulfur in Petroleum Products (General Bomb Method).
- D 512 - Standard Test Methods for Chloride Ion in Water. (DoD adopted)
- D 1179 - Test Methods for Fluoride Ion in Water.
- D 1234 - Standard Method of Sampling and Testing Staple Length of Grease Wool.
- D 3178 - Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke.
- D 3761 - Test Method for Total Fluorine in Coal by the Oxygen Bomb Combustion/Ion Selective Electrode Method.
- D 3951 - Standard Practice for Commercial Packaging. (DoD adopted)
- D 4239 - Test Method for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods.

(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, specification sheets or MS standards), 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 Material. The material shall be as specified in 3.1.1 through 3.1.2.3.

3.1.1 Yarn.

3.1.1.1 Type I. Type I packing shall be made of continuous filament graphitic or carbon yarn.

3.1.1.2 Type II. Type II packing shall be made of staple graphitic or carbon yarn. Staple is defined as yarn fabricated using fibers of 2 inch length or longer.

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3.1.1.3 Class 1. Class 1 packing shall be made of type I or II yarn with a pure graphitic dispersion or carbon dispersion.

3.1.1.4 Class 2. Class 2 packing shall be made of type I yarn with a pure graphitic dispersion or carbon dispersion.

3.1.1.5 Class 3. Class 3 packing shall be made of type I or II yarn with a pure graphitic or carbon dispersion and shall be coated with polytetrafluoroethylene (PTFE) (see 4.3.9).

3.1.2 Coatings and corrosion inhibiting treatments.

3.1.2.1 Grade I. Grade I packing shall be provided with a powdered zinc corrosion inhibiting treatment (2 percent Zn, by weight, minimum). If no grade is specified, grade I packing shall be provided.

3.1.2.2 Grade N. Grade N packing shall not contain corrosion inhibiting additives.

3.1.2.3 Coatings. Binders may be utilized. Any binder shall comply with 3.4.3. A PTFE coating in accordance with 3.4.2 shall be provided on class 3 packing only. No other coating or lubricant shall be used.

3.2 Construction. Packing shall be braided for sizes 1/4 inch and over to a diagonal interlocking through-body-to-surface construction. This construction shall use either single or multiple strands on 12, 18, 20, 24 or 36 diagonal and additional center-corner-stuffer strands as necessary to produce a dense square packing with good dimensional stability. Sizes 1/8 through 3/16 inch only may be square braided (see 4.2.3.2).

3.3 Sizes and mass. Packing shall be furnished in the sizes shown in table I, as specified (see 6.2). Packing shall be formed approximately square in cross section within the dimensional tolerance of table I (see 4.3.1). The mass per linear foot shall be not less than that shown in table I (see 4.3.2).

3.4 Chemical and physical properties. The properties of the finished packing shall conform to the requirements of table II. Class 2 material shall also conform to the requirements of table III.

3.4.1 Dispersion. Dispersion shall be lubrication grade graphite or carbon.

3.4.2 PTFE coating (class 3 only). The coating shall be from a dispersion of PTFE and shall not exceed 10 percent by mass of the yarn (see 4.3.8).

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3.4.3 Prohibited additions. There shall be no intentional additions of any of the detrimental materials of table III or antimony, arsenic, bismuth, cadmium, lead, tin or zinc (grade N only) during the manufacture or packaging of the product.

3.4.4 Braid geometry retention. Untaped, cut ends shall not unravel more than 1/8 inch with the packing dry or wet.

3.5 Put-up. Unless otherwise specified (see 6.2), packing shall be uniformly coiled on spools or reels in accordance with table IV.

3.6 Mercury exclusion. During manufacturing, fabrication, handling, packaging, and packing, the packing material shall not come in contact with mercury or mercury containing compounds.

3.7 Workmanship. The packing shall be free from extraneous material and visible defects that may affect its serviceability (see 4.2.3).

TABLE I. Sizes and mass of packing.

Nominal size (inches)	Tolerance (inches)	Minimum mass (lb/linear ft)
1/8	± 1/64	.0045
5/32	± 1/64	.007
3/16	± 1/64	.009
7/32	± 1/64	.013
1/4	± 1/64	.017
9/32	± 1/32	.021
5/16	± 1/32	.026
11/32	± 1/32	.032
3/8	± 1/32	.038
13/32	± 1/32	.044
7/16	± 1/32	.052
15/32	± 1/32	.059
1/2	± 1/32	.067
17/32	± 1/32	.076
9/16	± 1/32	.085
19/32	± 1/32	.095
5/8	± 1/16	.105
11/16	± 1/16	.127
3/4	± 1/16	.152
13/16	± 1/16	.178
7/8	± 1/16	.206
15/16	± 1/16	.237
1	± 1/16	.270
1 1/4	± 1/16	.421

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TABLE II. Chemical and physical properties.

Property	Value	Test
Carbon assay, type I and II	95 percent min, by mass	4.3.3
Ash	1 percent max, by mass	4.3.4
Specific gravity	1.38 min	4.3.5
Moisture content	3 percent max	4.3.6
Compression recovery	25 percent min	4.3.10

TABLE III. Detrimental materials (class 2 only).1/

Element	Maximum allowable impurity levels in parts per million (p/m)
Mercury (Hg)	10
Sulfur (S)	750
Total halogens (chlorine, bromine and fluorine)	500
Chlorine (Cl)	250
Bromine (Br)	250
Fluorine (F)	250

1/ See 4.3

TABLE IV. Put-up

Packing size (inches)	Package (net mass) (lbs)
1/8 through 11/32	1, 2 or 3 lb spools
3/8 through 19/32	2, 3, or 5 lb spools
5/8	3, 5, 10, or 25 lb reels
11/16	3, 5, 10, or 25 lb reels
3/4	5, 10, or 25 lb reels
13/16	5, 10, or 25 lb reels
7/8	5, 10, 25, or 50 lb reels
15/16	5, 10, 25, or 50 lb reels
1	10, 25, or 50 lb reels
1 1/4	10, 25, or 50 lb reels

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

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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 the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

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 Quality conformance inspection. Quality conformance inspection shall be in accordance with table V and 4.2.2 (see 6.3).

TABLE V. Quality conformance inspection.

Inspection	Requirements	Tests
Sizes and mass	3.3	4.3.1 and 4.3.2
Carbon assay	Table II	4.3.3
Ash	Table II	4.3.4
Specific gravity	Table II	4.3.5
Moisture content	Table II	4.3.6
Detrimental materials (class 2 only)	Table III	4.3.7
PTFE coating	3.4.2	4.3.8
Workmanship	3.7	4.2.3
Compression recovery	Table II	4.3.10
Braid geometry retention	3.4.4	4.3.11

4.2.1 Lot. Unless otherwise specified herein, a lot shall consist of all finished packing of one size, class and grade produced in a continuous run or at the same time under the same conditions. The sampling unit shall be one spool or reel of packing, as applicable.

4.2.2 Sampling. Sampling shall be as specified in 4.2.2.1 and 4.2.2.2.

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4.2.2.1 Sampling for visual and dimensional examination. As a minimum, the contractor shall randomly select a quantity of sampling units from each lot of graphitic or carbon braided yarn packing material in accordance with table VI and subject them to the examinations of 4.2.3.1 and 4.2.3.2. The sample size depends on the lot size. If one or more defects are found in any sample, the entire lot shall be rejected. The contractor has the option of screening 100 percent of the rejected lot for the defected characteristics or providing a new lot, which shall be selected 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 VI. Sampling for visual and dimensional examinations.

Lot size	Sample size
2 to 50	5
51 to 90	7
91 to 150	11
151 to 280	13
281 to 500	16
501 to 1200	19
1201 to 3200	23
3201 to 10,000	29
10,001 to 35,000	35
35,001 to 500,001 (and above)	40

4.2.2.2 Sampling for tests. A single random sample shall be selected from each lot.

4.2.3 Examinations. The units shall be examined for visual defects as specified in 4.2.3.1 and 4.2.3.2.

4.2.3.1 Visual defects. Each unit selected in accordance with 4.2.2.1 shall be surface examined to determine conformance to the requirements that do not require tests (see 3.7). The presence of corrosion inhibitor on grade I packing shall be confirmed. Any unit containing one or more visual defects shall be rejected, and if the number of defective units in the sample exceeds the acceptance number for that sample, this shall be cause for rejection of the lot which it represents.

4.2.3.2 Construction. The diagonal interlocking through-body-to-surface or square braided (for sizes 1/8 through 3/16 inch) patterns shall be examined visually. In addition, a 1 to 2 inch length of sample being examined shall be unbraided and strands (not yarn plies or ends) counted and compared to the numbers specified in 3.2.

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4.2.4 Quality conformance tests. The sample selected in accordance with 4.2.2.2 shall be tested as specified in 4.3. Unless otherwise specified herein, all testing shall be conducted on final braided and processed yarn, including any binders, coatings or corrosion inhibitors. If sample does not conform to all the test requirements, this shall be cause for rejection of the lot which it represents.

4.3 Tests. Tests shall be conducted as specified in 4.3.1 through 4.3.11.

4.3.1 Size. Before unbraiding, the size shall be determined by measuring each sample selected for visual examination (see 4.2.3.2 and table I). A steel rule with 1/32 inch divisions accurate to 1/32 inch or a steel slide caliper with 1/32 inch and 1/64 inch divisions shall be used (see 3.3).

4.3.2 Mass. The mass shall be determined using a specimen at least 2 feet in length for measurement in conjunction with the values of table I. The specimen shall be measured using a steel rule with 1/32 inch divisions accurate to 1/32 inch. The mass shall be determined to the nearest 0.005 pound (see 3.3).

4.3.3 Carbon assay. The sample shall be dried to a constant mass at $149 \pm 3^{\circ}\text{C}$ ($300 \pm 5^{\circ}\text{F}$) before testing. For grade I packing only, the test may be conducted prior to the corrosion inhibiting treatment or the added mass of the corrosion inhibitor may be determined and subtracted from the base mass of the sample. The percent carbon shall be based upon mass of the dried sample. This determination shall be made in accordance with ASTM D 3178 or an alternate method of analysis with equal or improved accuracy and precision (see table II).

4.3.4 Ash content. The ash content shall be determined in accordance with ASTM C 561 (see table II).

4.3.5 Specific gravity. The specific gravity shall be determined in accordance with ASTM C 135, modified as follows (see table II):

A 50 gram sample shall be prepared for grinding by unbraiding, cutting, slicing, or otherwise reducing the braided packing to pieces not larger than 1/8 inch.

4.3.6 Moisture content. The moisture content shall be determined in accordance with ASTM C 562 (see table II).

4.3.7 Detrimental material tests. For determination of the detrimental materials listed in table III for class 2 only, the test methods of table VII or alternate methods of equal or improved accuracy and precision shall be used (see 6.3):

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TABLE VII. Detrimental material tests.

Element	Preparation/Analysis Test Methods
Chlorine (Cl), Bromine (Br)	(1) Pyrohydrolysis (ASTM C 889)/ Ion Chromatographic Analysis
Fluorine (F)	(2) ASTM D 129/ASTM D 512 (1) Pyrohydrolysis (ASTM C 889)/ Selective Ion Electrode or Ion Chromatographic Analysis (2) ASTM D 129/ASTM D 1179 (3) ASTM D 3761 (sample preparation and analysis)
Sulfur (S)	(1) High temperature combustion in 100% Oxygen/Non- Dispersive Infrared Analysis or Ion Chromatographic Analysis (2) ASTM C 816 (sample preparation and analysis) (3) ASTM D 4239 Method #3 (sample preparation and analysis)
Mercury (Hg) (None intentionally added)	(1) Direct analysis of volatile elements (Hg) by Emission Spectrographic Method
NOTE: Where two preparation or analysis test methods are specified, either one is acceptable.	

The vendor shall provide certification that the limits of table III have been met and that low melting metals (Sb, As, Bi, Cd, Pb, Sn and Zn [Zn for grade N only]) have not been added as intentional constituents. In lieu of specific test results for the lot to be delivered, certifications may be based on tests of both raw materials and production lots of similar finished packing material over an extended time period (not exceeding three years between tests). Any change to manufacturing processing which affects product composition, including changes to raw material, binders or inhibitors (grade I) shall require additional testing to form the basis for future certifications.

4.3.8 Analysis for PTFE coating. A 5 gram specimen of packing shall be placed in a crucible and heated at $104 \pm 1^\circ\text{C}$ ($220 \pm 2^\circ\text{F}$) to constant mass (original dry mass) at room temperature. Then the specimen shall be heated at $316 \pm 5.5^\circ\text{C}$ ($600 \pm 10^\circ\text{F}$) for 24 hours, cooled, and the mass determined. The same specimen shall then be heated at $482 \pm 14^\circ\text{C}$ ($900 \pm 25^\circ\text{F}$) for 3 hours, cooled, and the mass determined. After the 482°C (900°F) heating, the crucible mass shall be redetermined without the specimen unless a platinum crucible was used. The new mass of the crucible shall be used to determine the mass of the residue after heating. Heating shall be done in a ventilated hood to avoid exposure

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to toxic vapors. The percentage of PTFE shall be calculated as follows, based on an average of three determinations (see 3.4.2).

$$\text{Percent PTFE} = \frac{100 (F-N)}{W}$$

Where:

W = Average original dry mass of specimens after extraction

F = Average mass of residue in crucibles after heating at 316°C (600°F)

N = Average mass of residue in crucibles after heating at 482°C (900°F)

4.3.9 Staple fiber lengths. Staple fiber length shall be determined in accordance with ASTM D 1234 (see 3.1.1).

4.3.10 Compression recovery. Three specimens, each 1.75 ± 0.125 inch long, shall be prepared from the sample and the results of the following test of each specimen averaged for comparison with the compression recovery limit of table II.

4.3.10.1 Center the specimen on a flat plate which is larger than the specimen and has its upper surface perpendicular ($\pm 2^\circ$) to the load to be applied. Place a flat plate of similar size on top of the specimen so that its lower surface is parallel ($\pm 2^\circ$) to the upper surface of the bottom plate. The upper plate shall weigh 5 ± 1 pounds. Both plates shall be rigid and maintained parallel during the testing. After the weight of the upper plate has been applied to the specimen for at least 15 seconds, measure and record the thickness (P) of the preloaded specimen. Several measurements about the circumference of the test plate should be taken and averaged for this, and subsequent, measurements.

Apply the major load, by either the top or bottom plate, along an axis passing through the center of the specimen in a slow, uniform manner so that the major load is attained within 20 ± 5 seconds. The major load is that load which will produce a stress of 4500 pounds per square inch ± 10 percent on the area of the specimen initially in contact with the lower test plate.

Maintain the major load for at least 60 seconds and measure and record the thickness (M) of the fully loaded specimen.

Immediately remove the major load and after about 60 seconds measure and record the recovered thickness (R) under the original preload.

Calculate the percent compression recovery (PCR) as follows:

$$\text{PCR} = ((R - M)/(P - M)) * 100$$

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4.3.11 Braid geometry retention. Cut a $2 \pm 1/16$ inch length packing. (The ends shall not be taped prior to or after cutting). Soak the test piece in room temperature tap water for 15 minutes, minimum. The yarn shall not unravel at the ends more than a total of 0.25 inches (0.125 inches at either end).

4.4 Inspection of packaging. Sample packages and packs, and the inspection of the 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.)

5.1 General.5.1.1 Navy fire-retardant requirements.

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

Levels A and B	- Type II - weather resistant.
	Category 1 - general use.
Level C	- Type I - non-weather resistant.
	Category 1 - general use.

- (b) Fiberboard. Fiberboard used in the construction of class-domestic, non-weather resistant fiberboard, cleated fiberboard boxes including interior packaging forms shall meet the flame spread index and the specific optic density requirements of PPP-F-320 and amendment thereto.

5.2 Preservation. Preservation shall be level A, C, or commercial as specified (see 6.2).

5.2.1 Level A. Packing, put-up as specified in 3.5, shall be protected by placing a wrap of greaseproof barrier material over the packing material and between the flanges of the spool or reel. The wrap shall be secured, utilizing pressure-sensitive tape. Packing material furnished in put-up form other than on spools or reels shall be completely wrapped in barrier material and secured with tape as specified herein. The greaseproof barrier herein is not required when the unit container selected (see 5.2.1.1) is treated for greaseproofness or is inherently greaseproof.

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5.2.1.1 Unit pack. Unit packs (unit containers) shall conform to MIL-STD-2073-1; appendix F, table I. Unless otherwise specified (see 6.2), container selection shall be at the contractor's option. Containers shall be of type weather resistant and conform to closure method V in accordance with the appendix of the box specification.

5.2.2 Level C. Graphitic and carbon braided yarn shall be preserved as specified for level A except that the unit containers specified in 5.2.1.1 shall be of the non-weather resistant type, class, or variety as applicable. Fiberboard box closure shall be in accordance with method I of the box specification, using pressure sensitive tape.

5.2.3 Commercial. Commercial preservation shall be in accordance with ASTM D 3951.

5.3 Packing. Packing shall be level A, B, C, or commercial, as specified (see 6.2).

5.3.1 General. Shipping containers shall contain identical quantities of identical material and shall be of minimum weight and cube, similar construction, and of uniform size.

5.3.2 Levels A, B, and C containers. Material preserved as specified (see 5.2) shall be packed in shipping containers for the level of packing specified (see 6.2), in accordance with MIL-STD-2073-1; appendix C, table VII. Unless otherwise specified (see 6.2), container selection shall be at the contractor's option.

5.3.2.1 Caseliners, closure and gross weight. Caseliner, closure, and gross weight shall be as specified in 5.3.2.1.1, 5.3.2.1.2, 5.3.2.1.3.

5.3.2.1.1 Caseliners. Unless otherwise specified (see 6.2), level A shipping containers containing level C or commercial unit pack containers shall be provided with waterproof caseliners in accordance with MIL-STD-2073-1.

5.3.2.1.2 Closure. Container closure, reinforcing, or banding shall be in accordance with the applicable container specification or appendix thereto except that class weather resistant fiberboard boxes shall be closed in accordance with method V and reinforced with nonmetallic or tape banding, and non-weather resistant fiberboard boxes shall be closed in accordance with method I using pressure sensitive tape.

5.3.2.1.3 Weight. Wood, plywood, and cleated type containers exceeding 200 pounds gross weight shall be modified by the addition of skids in accordance with MIL-STD-2073-1 and the applicable container specification or appendix thereto.

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5.3.3 Commercial. Material preserved as specified (see 6.2) shall be packed for shipment in accordance with ASTM D 3951 and herein.

5.3.3.1 Container modification. Shipping containers exceeding 200 pounds gross weight shall be provided with the minimum of 3- by 4-inch nominal wood skids laid flat, or a skid- or sill-type base that will support the material and facilitate handling by mechanical handling equipment during shipment.

5.4 Marking. Marking shall be as specified in 5.4.1.

5.4.1 Levels A, B, C, and commercial. Item description marking shall include, as a minimum, the size, type, class and grade of the graphitic or carbon braided yarn packing. In addition to any special marking required (see 6.2), level A, B, and C interior packs and shipping containers shall be marked in accordance with MIL-STD-2073-1, appendix F, and commercial interior packs and shipping containers shall be marked in accordance with ASTM D 3951. In addition, bar coding shall be applied in accordance with the marking requirements of MIL-STD-2073-1.

6. NOTES

6.1 Intended use. Type I and type II packings are intended for general shipboard service as anti-extrusion rings used in conjunction with corrugated ribbon or preformed ring graphitic packing material in valves. Grade I packing is intended for use in valves with non-corrosion resistant (for example, carbon steel, 400 series stainless steel) stem and packing gland parts.

6.1.1 Class 1. Class 1 packing is intended for use in superheated steam, feed-water, and condensate systems.

6.1.2 Class 2. Class 2 packing is intended for use in saturated steam, feed-water, and condensate systems in special applications.

6.1.3 Class 3. Class 3 packing is intended for use in steam, feed-water, and condensate systems with stuffing box temperatures limited to 260°C (500°F).

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Class and grade required (see 1.2).
- (c) Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- (d) Size required (see 3.3).

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- (e) Put-up, if other than required by table III (see 3.5).
- (f) When fire-retardant materials are not required (see 5.1.1).
- (g) Level of preservation and level of packing required (see 5.2, 5.2.1, 5.2.2, 5.2.3, 5.3, 5.3.2 and 5.3.3).
- (h) Container selection, if other than contractor's option (see 5.2.1.1 and 5.3.2).
- (i) When caseliners are not required (see 5.3.2.1.1).
- (j) Special markings required (see 5.4.1).

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.

<u>Reference Paragraph</u>	<u>DID Number</u>	<u>DID Title</u>	<u>Suggested Tailoring</u>
4.2	DI-RELI-80939	Test and inspection report	----

The above DID was 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.

6.4 Subject term (key word) listing.

Carbon assay
Center-corner-stuffer strands
Mass
PTFE coating
Reflux condenser

6.5 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. Material provided to previous revisions, and not marked to indicate the grade classification added by this revision, shall be considered to be grade N.

Preparing activity:
Navy - SH
(Project 5530-N149)

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.

The submitter of this form must complete blocks 4, 5, 6, and 7.

3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-P-24583B(SH)	2. DOCUMENT DATE (YYMMDD) 1991 August 22
3. DOCUMENT TITLE PACKING MATERIAL, GRAPHITIC OR CARBON BRAIDED YARN			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code)	7. DATE SUBMITTED (YYMMDD)
		(1) Commercial	
		(2) AUTOVON (if applicable)	
8. PREPARING ACTIVITY			
a. NAME Technical Point of Contact (TOPC): Mr. Richard Dempsey (SEA 51432) SE ADDRESS ALL CORRESPONDENCE AS FOLLOWS:		b. TELEPHONE (Include Area Code)	(2) AUTOVON
		(1) Commercial	(2) AUTOVON
		703-602-0147 (TOPC)	8-332-0147
c. ADDRESS (Include Zip Code) Commander, Naval Sea Systems Command Department of the Navy (SEA 55Z3) Washington, DC 20362-5101		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	