

INCH-POUND

MIL-A-24699(SH)

24 February 1988

MILITARY SPECIFICATION
ACOUSTICAL TRANSMISSION LOSS
BARRIER MATERIAL

This specification is approved for use within 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 the requirements for two types of acoustical transmission loss barrier material (see 6.1).

1.2 Classification. Material furnished under this specification shall be one of the types in table I as specified (see 6.2.1).

TABLE I. Barrier material.

Type I: Barium sulfate-loaded vinyl with fibrous glass cloth facing

Type II: Wire-reinforced lead

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation.

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 5523, 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 5640

DISTRIBUTION STATEMENT A Approved for public release; distribution unlimited

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SPECIFICATIONS

MILITARY

- MIL-Y-1140 - Yarn, Cord, Sleeving, Cloth, and Tape-Glass.
- MIL-I-22023 - Insulation Felt, Thermal and Sound Absorbing Felt, Fibrous Glass, Flexible.

STANDARDS

FEDERAL

- FED-STD-191 - Textile Test Methods.
- FED-STD-313 - Material Safety Data Sheets Preparation and the Submission of.

MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.

2.1.2 Other Government publications. The following other Government publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

PUBLICATIONS

DEPARTMENT OF LABOR

- Code of Federal Regulations, Title 29, Part 1910.1200 - Hazard Communication Standard.

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

U.S. COAST GUARD (USCG)

- Specification 164.009 - Incombustible Materials for Merchant Vessels.

(Application for copies should be addressed to the Commandant (MMT), U.S. Coast Guard Headquarters, 400 Seventh Street, SW, Washington, DC.)

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

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DoDISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 638 - Standard Test Method for Tensile Properties of Plastics.
(DoD adopted)
- D 1117 - Standard Methods of Testing Nonwoven Fabrics.
- D 1682 - Standard Test Methods for Breaking Load and Elongation of
Textile Fabrics.
- D 2724 - Standard Methods of Testing Bonded and Laminated Apparel
Fabrics.
- D 3776 - Standard Test Methods for Mass Per Unit Area (Weight) of
Woven Fabric.
- D 3951 - Standard Practice for Commercial Packaging. (DoD adopted)
- E 90 - Standard Method for Laboratory Measurement of Airborne
Sound Transmission Loss of Building Partitions.
(DoD adopted)
- E 162 - Standard Test Method for Surface Flammability of Materials
Using a Radiant Heat Energy Source. (DoD adopted)
- E 662 - Standard Test Method for Specific Optical Density of Smoke
Generated by Solid Materials.
- F 205 - Standard Method for Measuring Diameter of Fine Wire by
Weighing.

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

(Nongovernment standards and other publications are normally available from the organizations which prepare or which 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 specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3 and 6.3).

3.2 Material. Transmission loss barrier materials shall be fabricated without the use of any type of asbestos. When specified in the contract or order, a certificate of compliance shall be prepared (see 6.2.2).

3.2.1 Type I. Type I shall be barium sulfate-loaded vinyl composition barrier material with fabric style number 1584 fibrous glass cloth facing in accordance with MIL-Y-1140.

3.2.2 Type II. Type II shall be copper wire screen mesh, hot rolled bonded to lead sheathing. The warp and fill construction of the mesh shall be 18 by 14 with a wire diameter of 0.011 inch. Adhesive shall not be used (see 4.5.1).

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3.3 Dimensions.

3.3.1 Width. Type I barrier material width shall be 26, 38, or 48 inches or as specified (see 4.5.2 and 6.2.1).

3.3.2 Length and weight of rolls (type I). The length (see 4.5.2) of each roll is determined by its overall weight with regard to surface densities (see 4.5.3) as shown in table II. The target weight per roll is 100 pounds.

TABLE II. Length and weight.

Average length (yards)	Surface density (lb/ft ²)	Maximum number of pieces per roll
10	1.5	2
15	1.0	3
20	0.75	3

3.3.2.1 Size of panels (type II). Type II panels shall be 3 feet by 4 feet or 3 feet by 8 feet or as specified (see 6.2.1).

3.3.3 Tolerance. The tolerance for width shall not exceed plus or minus 1/4 inch.

3.4 Surface density. Values for surface density shall be as shown in table III. Tolerances for surface density shall be plus or minus 10 percent (see 4.5.3 and 6.2.1).

TABLE III. Surface density.

	Nominal surface density (lb/ft ²)		
	0.75	1.0	1.5
Type I	X	X	X
Type II		X	

3.5 Breaking strength (type I only). Tensile strength shall be as specified in table IV (see 4.5.4).

TABLE IV. Minimum breaking strength.

	Warp tensile strength (lb/in)	Fill tensile strength (lb/in)
Type I	400	300
Type II	400	300

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3.6 Tearing strength (type I only). Minimum tearing strength shall be as specified in table V (see 4.5.5).

TABLE V. Tearing strength.

	Warp tear strength (lb/in)	Fill tear strength (lb/in)
Type I	100	80
Type II	100	80

3.6.1 Rivet and grommet load bearing strength. Load bearing strength shall be not less than the values specified in table VI (see 4.5.5.1). When specified in the contract or order, a certificate of compliance shall be prepared (see 6.2.2).

TABLE VI. Rivet and grommet load bearing strength.

	Pounds of pull
Type I	180
Type II	180

3.7. Flex stiffness (type I only). Flex stiffness values shall be in accordance with table VII. In addition, the material shall show no visible rupture or cracking on the outer or inner surfaces during and following the test (see 4.5.6).

TABLE VII. Maximum flex stiffness.

°F	Inch-pounds
45	1.0
133	0.3

3.8 Peel strength (type I only). Fabric barrier 180 degree peel strength shall be in accordance with table VIII (see 4.5.7).

TABLE VIII. Minimum fabric barrier peel strength.

	With web (lb/in)	Across web (lb/in)
Type I	4	2

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3.9 Fire resistance. Flame resistance shall be as specified below. When specified in the contract or order, a certificate of compliance shall be prepared (see 6.2.2).

3.9.1 Flammability (type I). Materials shall provide a flame spread index of 30 or less (see 4.5.8.1).

3.9.2 Smoke density (type I). Materials shall not exceed the smoke density limits specified in table IX (see 4.5.8.2).

TABLE IX. Smoke density.

lb/ft ²	Rating
0.75	300
1.00	350
1.50	450

3.9.3 Toxicity. The material shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertinent to this effect shall be referred by the contracting activity to the Naval Medical Command (NAVMEDCOM) who will act as an advisor to the contracting activity.

3.9.4 Material safety data sheet. The contracting activity shall be provided a material safety data sheet (MSDS) at the time of contract award. The MSDS shall be provided in accordance with the requirements of FED-STD-313 and 29 CFR 1910.1200, Hazard Communication. When FED-STD-313 is at variance, the CFR, 29 CFR 1910.1200 shall take precedence, modify and supplement FED-STD-313. The MSDS shall be included with each shipment of the material covered by this specification (see 6.4).

3.9.5 Noncombustibility (type II). Type II material shall be noncombustible (see 4.5.8.3).

3.10 Sound transmission loss. Sound loss shall be as specified below. When specified in the contract or order, a certificate of compliance shall be prepared (see 6.2.2).

3.10.1 Type I materials. Sound transmission loss values in decibels (dB) shall be not less than the minimum values specified in tables X, XI, and XII (see 4.5.9.1).

TABLE X. Minimum sound transmission loss values in dB for type I (0.75 lb/ft² surface density).

		One-third octave band center frequency in Hz																
Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
dB	13	10	10	13	14	15	17	19	21	22	25	26	28	30	32	33	35	37

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TABLE XI. Minimum sound transmission loss values in dB for type I (1.0 lb/ft² surface density).

One-third octave band center frequency in Hz																		
Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
dB	12	12	12	14	16	17	19	21	23	24	26	28	30	32	34	36	38	39

TABLE XII. Minimum sound transmission loss values in dB for type I (1.5 lb/ft² surface density).

One-third octave band center frequency in Hz																		
Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
dB	15	14	14	18	19	20	22	24	27	28	31	32	33	36	38	40	42	43

3.10.2 Type II materials. Sound transmission loss values in dB shall be not less than the minimum values specified in table XIII (see 4.5.9.2).

TABLE XIII. Minimum sound transmission loss values in dB for type II (1.0 lb/ft² surface density).

One-third octave band center frequency in Hz																		
Hz	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
dB	15	12	18	28	34	39	43	45	50	53	56	57	57	58	60	65	67	69

3.11 Workmanship. The material shall be free of cracks, scratches, dents, imbedded particles, and other defects which could affect 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 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Responsibility for compliance. All items must 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 assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of 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).

4.2.1 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified herein.

4.3 First article inspection. First article inspection shall consist of the tests specified in 4.5 as outlined in table XIV (see 6.3). When specified in the contract or order, a first article inspection procedure and report shall be prepared (see 6.2.2).

TABLE XIV. First article inspection.

Inspections	Requirement	Test
Wire diameter	3.2.2	4.5.1
Width	3.3.1	4.5.2
Length	3.3.2	4.5.2
Surface density	3.4	4.5.3
Breaking strength	3.5	4.5.4
Tear resistance	3.6	4.5.5
Rivet and grommet load bearing	3.6.1	4.5.5.1
Flex stiffness	3.7	4.5.6
Peel strength	3.8	4.5.7
Fire resistance		
Flammability	3.9.1	4.5.8.1
Smoke density	3.9.2	4.5.8.2
Toxicity	3.9.3	-----
Noncombustibility	3.9.5	4.5.8.3
Sound transmission loss		
Type I material	3.10.1	4.5.9.1
Type II material	3.10.2	4.5.9.2
Workmanship	3.11	-----

4.3.1 Lot. A lot shall consist of all finished material of one size produced in a continuous run (or at the same time and under the same conditions) and offered for delivery at one time.

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4.3.2 The tests specified in 4.5.8 and 4.5.9 need only be conducted for one of the following reasons:

- (a) If within a 3-year period preceding the date of invitation for bids, the material has not been tested and found in conformance to 3.9 and 3.10, respectively, or
- (b) If the material offered for delivery is not manufactured the same in all respects as that previously tested.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with table XV and 4.4.2. When specified in the contract or order, a quality conformance test report shall be prepared (see 6.2.2).

TABLE XV. Quality conformance inspection.

Inspections	Requirement	Test
Group A		
Wire diameter	3.2.2	4.5.1
Width	3.3.1	4.5.2
Length	3.3.2	4.5.2
Surface density	3.4	4.5.3
Workmanship	3.11	-----
Group B		
Breaking strength	3.5	4.5.4
Tear resistance	3.6	4.5.5
Rivet and grommet load bearing	3.6.1	4.5.5.1
Flex stiffness	3.7	4.5.6
Peel strength	3.8	4.5.7

4.4.1 Lot. A lot shall consist of all finished material of one size produced in a continuous run (or at the same time and under the same conditions) and offered for delivery at one time. The sampling unit shall be one roll or panel.

4.4.2 Sampling.

4.4.2.1 Sampling for visual and dimensional examination. For visual and dimensional examination (group A of table XV), a random sample shall be selected from each lot in accordance with MIL-STD-105 at inspection level I with an acceptable quality level (AQL) of 2.5 percent defective for major defects and 4.0 percent defective for minor defects (see table XVI).

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TABLE XVI. Classification of defects.

Examine	Defect	Major	Minor
End item	Length and width not as specified.		X
	Cracks	X	
	Broken edges or corners (type II only)	X	
	Damage or defects affecting function or serviceability.	X	
	Damage or defects not affecting function or serviceability.		X

4.4.2.2 Sampling for examination for packaging. The lot size shall be the number of shipping containers in the end item inspection lot. Sampling shall be in accordance with MIL-STD-105. The AQL shall be 2.5 percent defective.

4.4.2.3 Sampling for quality conformance tests. For quality conformance inspection requiring tests (group B of table XV), a random sample shall be selected from each lot in accordance with MIL-STD-105, level S-2, with an AQL of 2.5 percent defective.

4.4.2.4 Nonconformance. If a sample fails to pass group B inspection, the contractor shall notify the qualifying activity and the cognizant inspection activity of such failure and take corrective action on the materials or processes, or both, as warranted, and on all units of product which can be corrected and which are manufactured under essentially the same materials and processes, and which are considered subject to the same failure. Acceptance and shipment of the product shall be discontinued until corrective action acceptable to the contracting activity has been taken. After the corrective action has been taken, group B inspection shall be repeated on additional sample units (all tests and examinations, or the test which the original sample failed at the option of the qualifying activity). Group A inspections may be reinstated; however, final acceptance and shipment will be withheld until group B inspection has shown that the corrective action was successful. In the event of failure after reinspection, information concerning the failure shall be furnished to the cognizant inspection activity and the contracting activity.

4.5 Tests.

4.5.1 Diameter of copper wire. Wire diameter shall be determined in accordance with ASTM F 205 (see 3.2.2).

4.5.2 Width and length. Width and length shall be determined by using a standard rule calibrated in 1/16-inch graduations (see 3.3.1 and 3.3.2).

4.5.3 Surface density. Surface density shall be determined in accordance with ASTM D 3776 (see 3.3.2 and 3.4).

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4.5.4 Breaking strength. Breaking strength shall be determined in accordance with ASTM D 1682 (see 3.5).

4.5.5 Tearing strength. Tearing strength shall be determined in accordance with ASTM D 1117 (see 3.6).

4.5.5.1 Rivet and grommet load bearing strength. Strength shall be determined using test procedures described in ASTM D 638. Test specimens shall be prepared as follows: test specimens shall be 3 inches wide and 7 inches long. Brass grommets (1/2 inch inside diameter by 1 inch outside diameter) shall be placed on the width center, 1-1/2 inches from material ends. The two grommeted ends are attached to steel hooks mounted in the tension tester jaws so that the steel hooks pass through the grommet eyelets. The tension tester is driven at a rate of 20 inches per minute and the tear-out force of the grommets in pounds of pull is recorded (see 3.6.1).

4.5.6 Flex stiffness. Flex stiffness shall be determined in accordance with FED-STD-191, test method 5206 at 45 degrees Fahrenheit (°F) and 133°F (see 3.7).

4.5.7 Peel strength. Peel strength shall be determined in accordance with ASTM D 2724 (see 3.8).

4.5.8 Fire resistance.

4.5.8.1 Flammability. Flammability shall be determined in accordance with ASTM E 162 (see 3.9.1), with the material sample positioned so the fibrous glass cloth faces the flame.

4.5.8.2 Smoke density. Smoke density shall be determined in accordance with ASTM E 662 (see 3.9.2).

4.5.8.3 Noncombustibility. Type II material shall be tested for noncombustibility in accordance with USCG 164.009 (see 3.9.5).

4.5.9 Sound transmission loss.

4.5.9.1 Type I material. Transmission loss for type I material shall be tested in accordance with ASTM E 90 (see 3.10.1).

4.5.9.2 Type II material. Type II barrier material shall be tested in accordance with ASTM E 90, except as follows: the type II material shall be mounted to a base layer of 2-inch thick, fibrous glass panel in accordance with class b of MIL-I-22023 and installed on a standard Navy bulkhead as specified in 4.5.9.2.1 (see 3.10.2).

4.5.9.2.1 Standard Navy bulkhead. The standard Navy bulkhead shall consist of a 1/4-inch aluminum plate, ribbed with 4 by 4-inch aluminum tees. The standard Navy bulkhead details are shown on figure 1 and installation guidelines are shown on figure 2.

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4.6 Toxicity. To determine conformance to requirements of 3.4, the manufacturer of the material shall disclose the formulation of his product to the Naval Medical Command, MEDCOM-242, Washington, DC 20372. The disclosure of proprietary information, which shall be held in confidence by the Naval Medical Command, shall include: the name, formula, and approximate percentage by weight and volume of each ingredient in the product; the results of any toxicological testing of the product; identification of its pyrolysis products; and any such other information as may be needed to permit an accurate appraisal of any toxicity problem associated with the handling, storage, application, use, disposal, or combustion of the material.

4.7 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment 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 Preservation. Not required.

5.2 Packing - commercial. Packing shall conform to ASTM D 3951 and as specified herein.

5.2.1 Rolls. Rolls of transmission loss material shall be individually packed in fiberboard boxes. Boxes shall be reinforced with nonmetallic strapping or filament reinforced pressure-sensitive tape. Packed rolls shall be palletized and secured on commercial pallets. The gross weight of pallets shall not exceed 2,500 pounds.

5.2.2 Panels. Panels of transmission loss material shall be laid flat, interleaved with paper sheets and packed in commercial wood boxes with nominal 3- by 4-inch wood skids. The gross weight of boxes shall not exceed 2,500 pounds.

5.3 Marking. In addition to any special marking specified (see 6.2.1), each roll box, palletized load, and panel box shall be marked in accordance with ASTM D 3951 and shall include bar code marking of MIL-STD-129.

6. NOTES

6.1 Intended use. Barrier materials furnished under this specification are intended for application to plane and curved ship structures and machinery surfaces in order to attenuate airborne noise. Type I material is the top or middle layer of thermal, acoustic, or fire insulation materials which are attached to the deck, bulkhead, overhead, or machinery casing surfaces. Standard application details are contained in Naval Sea Systems Command (NAVSEA) drawings 804-5773931 and 804-5773932. The type II material (see 1.2) intended as middle layer (sandwich) components of composite treatments use an insulation material for the lower layer and a faced panel or metal sheathing as the upper layer. Type II treatment is used where Coast Guard approval is required.

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6.2 Ordering data.

6.2.1 Acquisition requirements. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Type required (see 1.2).
- (c) When first article inspection is required (see 3.1).
- (d) Width of barrier material if other than specified (see 3.3.1).
- (e) Size of type II panels (see 3.3.2.1).
- (f) Surface density required (see 3.4).
- (g) Whether special marking is required (see 5.3).

6.2.2 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD FAR Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data specified below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

<u>Paragraph no.</u>	<u>Data requirement title</u>	<u>Applicable DID no.</u>	<u>Option</u>
3.2, 3.6.1, 3.9, and 3.10	Certificate of compliance	DI-E-2121	-----
4.3	First article inspection procedure	DI-T-4901	-----
4.3	First article inspection report	DI-T-4902	-----
4.4	Inspection and test reports	DI-T-5329	-----

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DoD 5010.12-L., AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.2.2.1 The data requirements of 6.2.2 and any task in sections 3, 4, or 5 of this specification required to be performed to meet a data requirement may be waived by the contracting/acquisition activity upon certification by the offeror that identical data were submitted by the offeror and accepted by the Government under a previous contract for identical item acquired to this specification. This does not apply to specific data which may be required for each contract regardless of whether an identical item has been supplied previously (for example, test reports).

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6.3 First article. When a first article inspection is required, the items should be a first article sample. The first article should consist of one unit. The contracting officer should 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.

6.4 Material safety data sheets. Contracting officers will identify those activities requiring copies of completed Material Safety Data Sheets (MSDS) prepared in accordance with FED-STD-313. The pertinent Government mailing addresses for submission of data are listed in appendix B of FED-STD-313. In order to obtain the MSDS, FAR clause 52.223-3 must be in the contract.

6.5 Subject term (key word) listing.

Breaking strength
Flex stiffness
Peel strength
Surface density
Tearing strength
Warp

Preparing activity:
Navy - SH
(Project 5640-N107)

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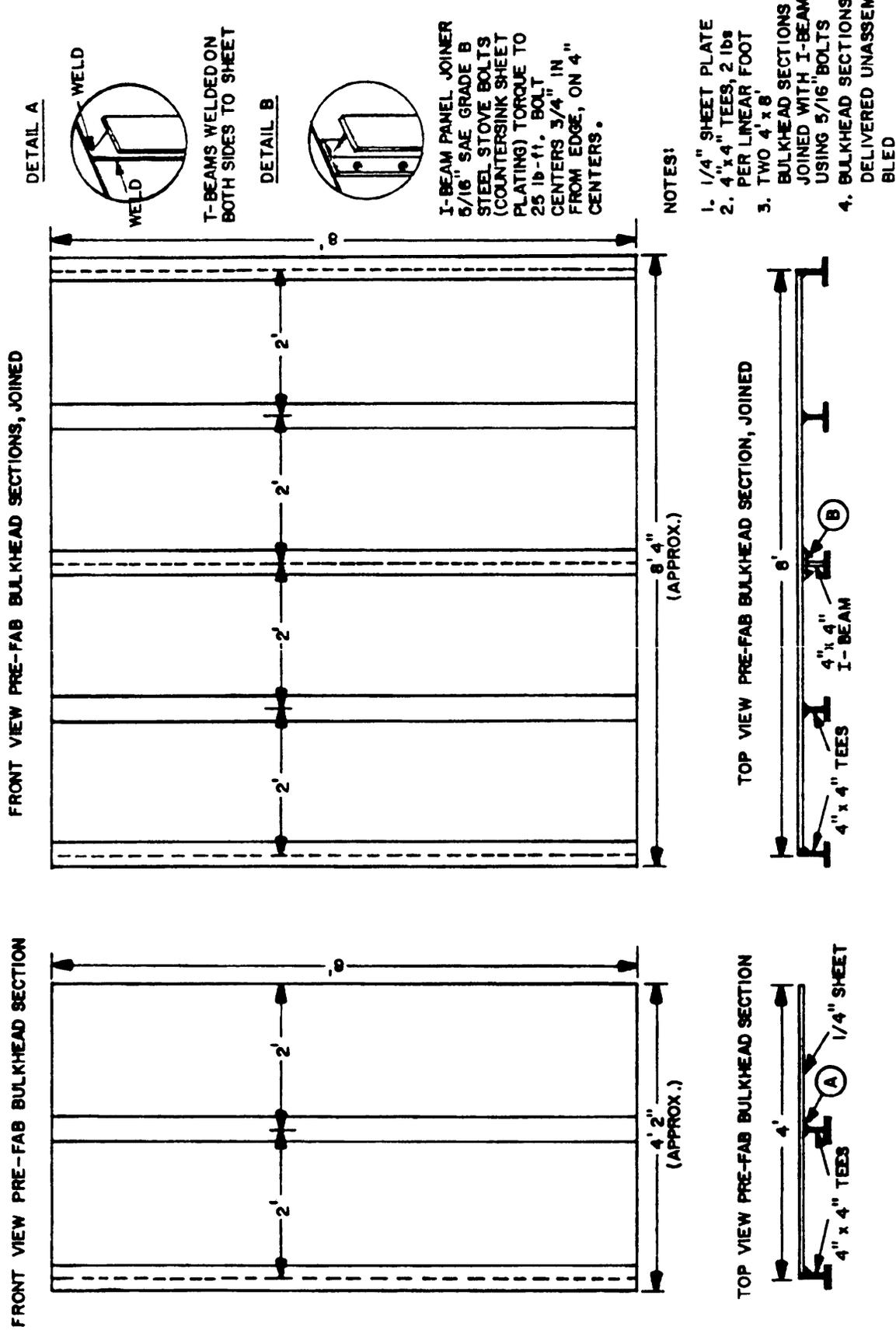
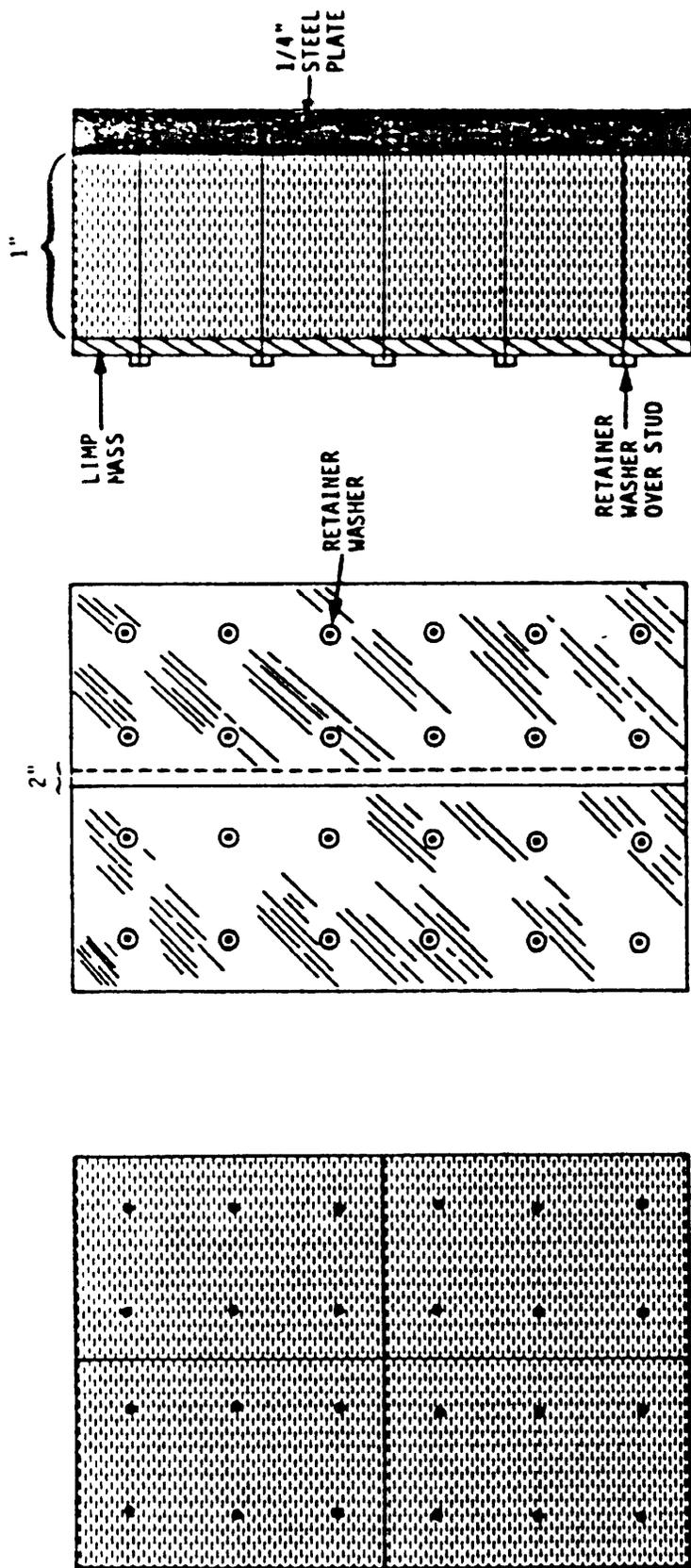


FIGURE 1. Navy bulkhead standard.

SH 131689

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UNDERLAYMENT

One-inch, unfaced fibrous glass impaled on studs. Butt joint on all seams; 2' x 3' x 1" panels shown.

LIMP MASS LAYER

Type 11 limp mass layer mounted over fibrous glass underlayment. Retainer washers used to secure limp mass in place; 26-inch wide limp mass material shown with 2-inch overlap on seam.

SIDE VIEW

NOTE:

Stud spacings shall not exceed 12-inch centers and shall not be more than 6 inches from the edge of the treatment.

FIGURE 2. Material installation guidelines.

INSTRUCTIONS: In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (*DO NOT STAPLE*), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification 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.

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-A-24699(SH)		2. DOCUMENT TITLE ACOUSTICAL TRANSMISSION LOSS BARRIER MATERIAL	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION <i>(Mark one)</i>	
b. ADDRESS <i>(Street, City, State, ZIP Code)</i>		<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER <i>(Specify):</i> _____	
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER <i>(Last, First, MI) - Optional</i>		b. WORK TELEPHONE NUMBER <i>(Include Area Code) - Optional</i>	
c. MAILING ADDRESS <i>(Street, City, State, ZIP Code) - Optional</i>		8. DATE OF SUBMISSION <i>(YYMMDD)</i>	