

(INCH-POUND)
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23 April 1993
SUPERSEDING
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MILITARY SPECIFICATION

INSULATION BLANKET, THERMAL-ACOUSTICAL

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

1. SCOPE

1.1 Scope. This specification covers the requirements of composite blankets suitable for acoustical and thermal insulation of the walls of aircraft compartments within the temperature range of -65°F to +175°F (-54°C to +80°C).

1.2 Classification. Insulation blankets are furnished in the following types, classes, and styles, as specified (see 6.2b):

* 1.2.1 Type.

Type I - Quilted blanket

Type II - Cemented blanket

* 1.2.2 Class.

Class 1 - Semi-stitched blankets

Class 2 - Fully-stitched blankets

* 1.2.3 Style.

Style A - Non-porous trim cloth

Style B - Porous trim cloth

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Warfare Center Aircraft Division Lakehurst, Code SR3, Lakehurst, NJ 08733-5100, by using the 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 is unlimited.

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 6.2c).

SPECIFICATIONS

FEDERAL

P-D-680	-	Dry Cleaning, and Degreasing Solvent
V-T-295	-	Thread, Nylon
QQ-A-250/4	-	Aluminum Alloy 2024, Plate and Sheet
UU-P-268	-	Paper, Kraft, Wrapping
PPP-B-576	-	Box, Wood, Cleated, Veneer, Paper Overlaid
PPP-B-591	-	Boxes, Fiberboard, Wood-Cleated
PPP-B-601	-	Boxes, Wood, Cleated-Plywood
PPP-B-636	-	Box, Shipping, Fiberboard
PPP-T-45	-	Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing

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MIL-B-121	-	Barrier Material, Greaseproofed, Waterproofed, Flexible
MIL-A-3316	-	Adhesives, Fire-Resistant, Thermal Insulation
MIL-C-8104	-	Cloth, Sheeting, Cotton, Treated
MIL-L-10547	-	Liners, Case, and Sheet, Overwrap; Water-Vaporproof or Waterproof, Flexible
MIL-C-22787	-	Cloth, Coated, Fuel and Flame Resistant

STANDARDS

FEDERAL

FED-STD-141	-	Paint, Varnish, Lacquer, and Related Materials: Methods of Inspection, Sampling, and Testing
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FED-STD-191 - Textile Test Methods
 FED-STD-595 - Colors used in Government Procurement

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

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the DODSSP - Customer Service, Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, 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 6.2c).

SAE COOPERATIVE ENGINEERING PROGRAM

AMS 3529 - Plastic Sheet and Film, Vinyl Copolymers
 Unplasticized
 AMS 4375 - Magnesium Alloy Sheet and Plate
 3.-A1-1.02 (AZ31B-0)

(Applications for copies should be addressed to the SAE, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 800 - Standard Specification for Glass Fiber
 Blanket Insulation (Aircraft Types)
 ASTM D 1748 - Standard Test Method for Rust Protection
 by Metal Preservatives in the Humidity
 Cabinet

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

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification Rules

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

(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 Materials. The insulation blanket shall be made from the following component materials:

3.1.1 Trim cloth.

3.1.1.1 Non-Porous (Style A). The non-porous cloth shall conform to either Type I or Type II of MIL-C-22787.

3.1.1.2 Porous (Style B). The porous cloth shall conform to MIL-C-8104 or Type III of MIL-C-22787.

* **3.1.2 Insulation batting.** Unless otherwise specified, the insulation batting shall conform to the Type I, 0.60 lbs/ft³ nominal density, water repellent glass fiber blanket of ASTM C800-89.

* **3.1.3 Impervious membrane.** The impervious membrane shall be either unsupported or supported as follows:

3.1.3.1 Unsupported. The unsupported membrane film shall be a minimum 0.003 inch thick and shall conform to the requirements of AMS 3529.

3.1.3.2 Supported. The supported membrane film shall consist of the cloth backing from 3.1.6 supported in a heat sealable polyethylene terephthalate, or equivalent, film system.

3.1.4 Adhesive. The adhesive used in the cementing operations shall conform to Type I or Type II of MIL-A-3316.

3.1.5 Thread. The thread shall be nylon conforming to Type I, Size A of V-T-295.

3.1.6 Cloth backing. The backing of the insulation blanket shall be a close woven synthetic or fibrous glass fabric and the physical properties shall be as specified in Table I.

3.2 Construction. The blanket construction shall be Style A conforming to Figure 1, or Style B conforming to Figure 2, and the following types and classes, as specified (see 6.2b).

TABLE I. Physical properties of cloth backing.

Characteristic	FED-STD-191 Method No.	Requirements
Weight, ounce per square yard, min	5041	2.0
Breaking strength, grab, pounds, min	5100	
Warp		8.0
Fill		8.0

3.6 Width. Unless otherwise specified (see 6.2e), the width of the assembled blankets shall be 36 ± 0.5 inches.

3.7 Thickness. Blanket thickness shall be uniform (within the tolerance) for the type specified in the contract (see 6.2b).

3.7.1 Type I. The thickness of the quilted blanket shall be the nominal thickness specified $+0.10$, -0.0 inch, when measured as specified in 4.5.1.5 (see 6.2.f).

3.7.2 Type II. The thickness of the cemented blanket shall be the nominal thickness specified ± 25 percent, when measured as specified in 4.5.1.5 (see 6.2.f).

3.8 Toxicity. Component materials used shall be of the type which do not emit toxic or noxious vapors in concentrations that will hinder the efficiency or comfort of the aircraft occupants. 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 procuring activity to the appropriate department medical service who will act as an advisor to the procuring agency.

3.9 Sound attenuation. The sound attenuation properties of the blankets shall be as specified by the acquisition activity (see 6.2i).

3.10 Thermal Properties. The thermal insulating properties of the blankets shall be as specified by the acquisition activity (see 6.2j).

3.11 Corrosion. The component materials of the blanket shall neither promote corrosion of any aircraft material which it contacts nor emit corrosive vapors which will damage any portion of the aircraft.

3.12 Fire resistance. The assembled blankets shall be fire resistant to the extent that if ignited the blanket shall not support combustion.

3.13 Vibration disintegration resistance. The blankets shall develop or exhibit no appreciable packing, disintegration, or imperfections affecting the serviceability or appearance when subjected to the Vibration Test described in 4.5.2.5. The loss in weight of material during the testing shall not exceed 0.5 percent.

3.14 Workmanship. All details of manufacture, including the component materials used and the processing of the blankets, shall be in accordance with high-grade commercial practice. The occurrence of defects in the blankets shall not exceed the quality levels specified herein.

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.

* 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 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. Quality conformance inspection (4.3).

4.3 Quality conformance inspection. Quality conformance inspection shall consist of all examinations and tests specified herein (see 6.3).

4.3.1 Inspection lot. An inspection lot shall consist of the total length, in yards, of one type, class and style made under essentially the same conditions and offered for delivery at one time. The sample unit for inspections shall be one yard.

4.3.2 Sampling.

4.3.2.1 Sampling for yard-by-yard inspection. The sample size for this inspection shall be determined in accordance with MIL-STD-105, Inspection Level II. A sufficient number of rolls shall be selected at random from each lot so that the required sample yardage will be obtained by examining approximately 25 consecutive yards of each roll. The AQL shall be 1.5 major defects and 4.0 minor defects per 100 units.

4.3.2.2 Dimensional inspection. The sample size for this inspection shall be the number of rolls selected for yard-by-yard inspection of 4.3.2.1. The samples shall be examined as specified in 4.5.1.6. A lot shall be considered unacceptable if either:

- a. The total of the actual gross lengths of the pieces in the sample is less than the total of the gross lengths marked on the piece tickets.
- b. The width of the blanket is not within the tolerance specified in 3.6, or in the contract (6.2e).

4.3.2.3 Sampling for overall inspection. The sample size for this inspection shall be an appropriate piece of blanket material, taken from each of the sample rolls selected in 4.3.2.1. The samples shall be inspected as specified in 4.5.1.3.

4.3.2.4 Sample for tests. The unit of product shall be two yards. The sample size shall be selected at random from the lot in accordance with the following:

<u>LOT SIZE (YARDS)</u>	<u>SAMPLE SIZE (UNITS)</u>
800 or less	2
801 to 22,000	3
Over 22,000	5

The lot shall be unacceptable if any unit fails to meet any of the tests specified under 4.5.2.

* 4.3.2.5 Packaging. A quantity of shipping containers prepared for delivery, just prior to closure, shall be selected in accordance with Inspection Level I of MIL-STD-105. The lot size for purposes of this inspection shall be the number of shipping containers. In addition, shipping containers fully prepared for delivery shall be examined for closure defects. The samples shall be inspected as specified in 4.5.1.7.

4.4 Inspection condition. Samples shall be conditioned at ambient conditions for at least 24 hours before testing. Unless otherwise specified, the physical properties specified in Section 3 apply to the average of the determinations made on a unit of the product.

4.5 Inspection methods.

* 4.5.1 Visual inspection and dimensional check.

4.5.1.1 In-process material inspection and tests. The in-process inspection and tests will be made at any point or any phase of the manufacturing process to determine whether the materials, construction, and workmanship are as specified in Section 3.

4.5.1.2 Yard-by-yard examination. Samples selected in accordance with 4.3.2.1 shall be examined for the defects identified and classified in Table II. The defects found shall be counted regardless of their proximity to each other except where two or more defects represent a single local condition of the blanket, in which case only the more serious defects shall be counted. A continuous defect shall be counted as one defect for each lengthwise yard or fraction thereof in which it occurs.

4.5.1.3 Overall inspection. Samples selected in accordance with 4.3.2.2 shall be examined for defects as listed in Table III. Each defect shall be counted no more than once in each piece examined.

4.5.1.4 Color. The color of the trim cloth shall be compared with the standard color chip specified in 3.4 and 6.2d in accordance with Method 4250 of FED-STD-141.

4.5.1.5 Thickness. To determine the thickness of the blanket, three thicknesses of material, each slightly less than one foot square, shall be piled on a flat surface and covered by an aluminum-alloy sheet 0.032 inch thick, having an area of one square foot. The distance between the flat surface and the aluminum cover sheet shall be measured at three or more points along each edge, and the average thickness of the blankets computed.

TABLE II. Classification of defects.

Defect	Major	Minor
Cut, hole or tear - any	X	
Edge cut, torn, broken - extending into body of blanket	X	
Crease or wrinkle - hard embedded		X
Spots, stains, streaks - clearly visible		X
Faulty adhesion, Heat sealing - applicable components separating	X	
Faulty stitching	X	
Any required component or part missing	X	
Assembly not constructed as specified	X	

TABLE III. Classification of defects for finished blankets.

Examine	Defect
Finished Blanket	<p>Objectionable odor (see 3.8).</p> <p>Uncleanliness throughout.</p> <p>Color off-shade - not within established tolerance.</p> <p>Edge curled, folded, rolled, slack or loopy, over more than half the piece <u>1/</u>.</p> <p>Thickness not uniform.</p> <p>Stability faulty.</p>

1/ Intermittently or continuously.

4.5.1.6 Dimensional examination. Samples selected in 4.3.2.2 shall be measured for conformance to width and length requirements in accordance with Methods 5020 and 5010 of FED-STD-191. A dimensional defect shall be defined as either:

- a. Any gross length of a roll less than the minimum roll length specified in the contract (see 6.2g).
- b. Any gross length of a piece less than the minimum piece length specified in the contract (see 6.2g).
- c. Any gross length of a piece less than the gross length marked on the piece ticket by 2 yards or more.

* 4.5.1.7 Packaging. The shipping containers selected shall be examined for conformance to the requirements of Section 5 of this specification and Table IV. There shall be no defects.

TABLE IV. Examination of packaging.

Examine	Defect
Packaging	Not level specified. Rolls not properly wound or secured. Wrapping omitted, damaged, missing or not taped.
Packing	Not level specified; container not in accordance with contract requirements. Any nonconforming component; components missing, damaged. Incomplete closure of case liner, container flaps, loose strappings. Bulged or distorted containers.
Weight	Gross weight exceeds requirement.
Count	Less than specified or indicated quantity per container.
Markings	Interior or exterior markings omitted, illegible, incorrect, incomplete or not in accordance with contract requirements. Special markings omitted or incorrect.

4.5.2 Tests.

4.5.2.1 Fire resistance test. Samples of the assembled blanket shall be tested for fire resistance in accordance with FED-STD-191 Method 5903. The blanket shall not support a flame after the burner is removed.

4.5.2.2 Corrosion.

* 4.5.2.3 Preparation of test panels. Two sets of panels of polished aluminum and polished magnesium shall be prepared. Aluminum panels shall conform to QQ-A-250/4 and magnesium panels shall conform to AMS 4375-84. Panels shall be

2 by 4 inches in width and length, respectively, and from 0.063 to 0.125 inch in thickness. Edges shall be rounded and two 0.125 inch diameter holes drilled at opposite corners of the 4 inch side. Panels shall be finished with 280-grit abrasive. Immediately prior to use, panels shall be cleaned by successive washings in solvent conforming to P-D-680 followed by boiling 95 percent methanol, and finally in boiling absolute methanol. An equal size specimen of the assembled blanket to be tested shall be attached to the panel by means of clips which will not cause or be susceptible to corrosion. The other panels shall be placed in the cabinet for comparison.

4.5.2.4 Procedure. The panels shall be suspended from 18-8 stainless steel or monel metal hooks in a humidity cabinet conforming to and operated in accordance with ASTM D1748-83. The exposure period shall be seven days at 95 percent relative humidity and $120^{\circ} \pm 2^{\circ}\text{F}$. There shall be no difference between the type or extent of corrosion of the test sample and the sample for comparison.

4.5.2.5 Vibration disintegration resistance. A specimen at least 20 inches long and 12 inches wide shall be mounted with the long side vertically clamped in such a fashion that the top and bottom shall be open and the entire panel shall be free to vibrate horizontally. The specimen shall be vibrated horizontally for 12 hours through a double amplitude of at least 0.04 inch at a frequency of 1500 cycles per minute. Before the test is begun, the specimen shall be carefully weighed, and after completion of the vibration test, the specimen shall be weighed again and examined for evidence of packing, disintegration and other imperfections.

* 5. PACKAGING

5.1 Cleaning, preservation and packaging. Cleaning preservation and packaging shall be level A or C as specified (see 6.2k).

5.1.1 Level A.

5.1.2 Unit Packaging. The amount of material and permissible number of lengths in each roll, shall be as specified by the acquisition activity (see 6.2g and 6.2h). Each roll shall be secured to prevent unwinding, loosening, or slippage during handling, shipping, and storage. The material shall be rolled on a heavy spiral fiber tube having an inside diameter of not less than 1 inch. The ends of the tube shall project not more than 0.75 inch beyond the ends of the material. The entire roll shall be wrapped with Kraft paper conforming to UU-P-268 Grade B basis weight 60 pounds and then overwrapped in waterproof barrier material conforming to MIL-B-121. Ends of the roll shall be completely covered. The wrapping shall be sealed with tape conforming to PPP-T-45.

5.1.3 Level C. The blanket material shall be packaged to afford the minimum degree of protection necessary to prevent deterioration or damage during shipment under normal environmental conditions and commercial modes of transportation.

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

5.2.1 Level A. The blanket material packaged as described in paragraph 5.1 shall be packed in overseas type exterior containers conforming to PPP-B-591, PPP-B-601, PPP-B-636, or PPP-B-576. Strapping and closures shall be in accordance with the appendix of the applicable container specification. Fiberboard containers shall not exceed the weight and dimension limits of the applicable container specification. The gross weight limit of wood and wood cleated containers shall not exceed 200 pounds. Exterior shipping containers shall be provided with a sealed waterproof case liner conforming to MIL-L-10547, and the appendix thereto.

5.2.2 Level B. The blanket material packaged as described in paragraph 5.1 shall be packed in domestic type exterior containers conforming to PPP-B-591, PPP-B-601, PPP-B-636, or PPP-B-576. Fiberboard containers shall not exceed the weight and dimension limitations of the applicable container specification. The gross weight of wood or wood cleated shipping containers shall not exceed 200 pounds.

5.2.3 Level C. The blanket material packaged as specified in 5.1 shall be packed in a manner to insure carrier acceptance and safe delivery at destination. Containers shall be in accordance with Uniform Freight Classification Rules or regulations of other carriers applicable to the mode of transportation.

5.3 Marking. In addition to any special marking required by the contract or order, shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

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

6.1 Intended use. The blankets covered by this specification are intended for use in the soundproofing and thermal insulation of aircraft.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification.
- b. Type, class and style desired (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 and 2.2).
- d. Color and gloss requirements, if other than specified (see 3.4).
- e. Width, if other than specified (see 3.6).
- f. Thickness (see 3.7).

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- g. Quantity (length) required.
- h. Roll length required.
- i. Sound attenuation (see 3.9).
- j. Thermal insulating properties (see 3.10).
- k. Selection of applicable levels of packaging and packing (See 5.1).

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.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4.3.3	DI-NDTI-80809A	Test/Inspection Report	Para 10.2.7.1

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.

* 6.4 Subject term (key word) listing.

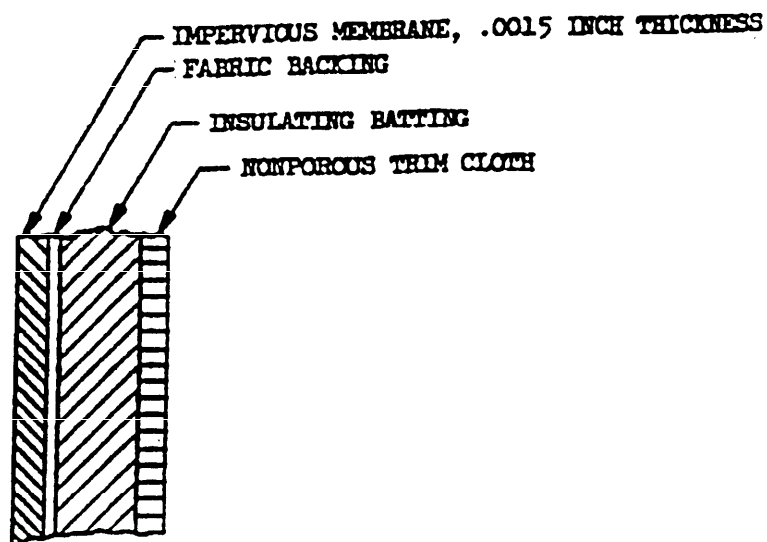
Barrier
Bulkhead
Cover
Padding
Panel
Wall

* 6.5 Changes from previous issue. The outside margins of this specification have been marked "*" to indicate where changes (deletions, additions, etc.) from the previous issue have been made. This has been done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content as written irrespective of the marginal notations and relationship to the last previous issue.

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

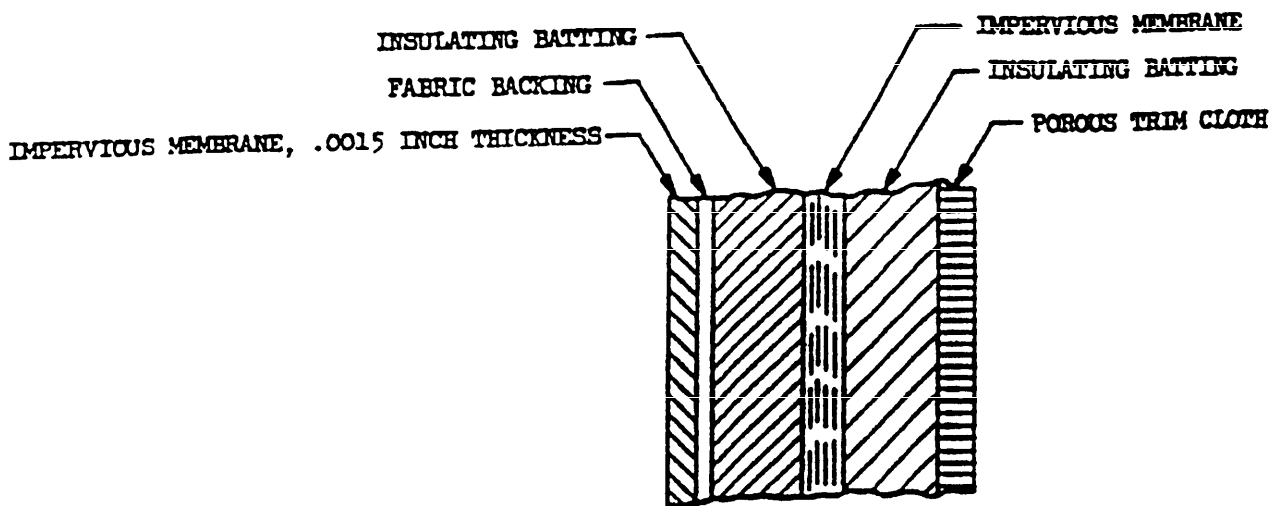
Preparing activity:
Navy - AS
Project No. 5640-0536

Review activities:
Air Force - 11



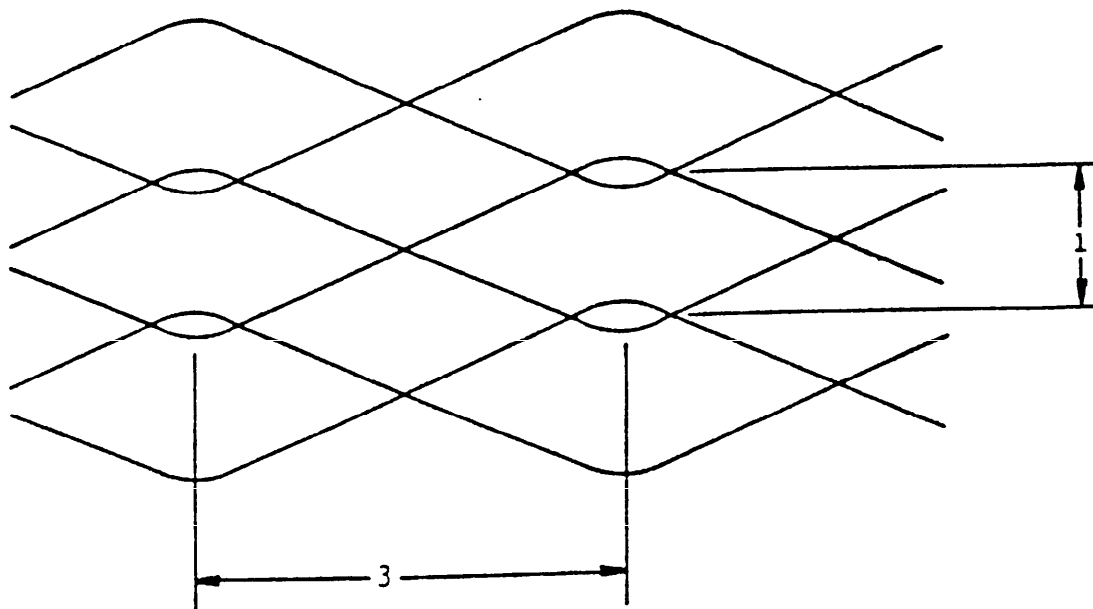
- 1/ Optional construction is cloth backing supported in a heat sealable plastic (See 3.1.3.2).

FIGURE 1. Composite blanket with Nonporous trim cloth.



- 1/ Optional construction is cloth backing supported in a heat sealable plastic (See 3.1.3.2).

FIGURE 2. Composite blanket using a porous trim cloth.



DIMENSIONS IN INCHES.

FIGURE 3. Quilting pattern.

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.
2. 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-I-7171D

2. DOCUMENT DATE (YYMMDD)

93/04/23

DOCUMENT TITLE

INSULATION BLANKET, THERMAL-ACOUSTICAL

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

REASON FOR RECOMMENDATION

SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

(1) Commercial

(2) AUTOVON

(If applicable)

3. DATE SUBMITTED (YYMMDD)

PREPARING ACTIVITY

a. COMMANDING OFFICER, NAVAL AIR
WARFARE CENTER AIRCRAFT DIVISION LAKEHURST
SYSTEMS REQUIREMENTS DEPARTMENT

b. TELEPHONE (Include Area Code)

(1) Commercial

(908) 323-7488

(2) AUTOVON

624-7488

c. ADDRESS (Include Zip Code)

CODE SR3

LAKEHURST, NJ 08733-5100

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