

MIL-F-17057A(Wep)

23 March 1964

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Superseding

MIL-C-17057(BaOrd)

3 March 1952

## MILITARY SPECIFICATION

Felt Sheet, Wool, Compound Impregnated, Chock Padding

This specification has been approved  
by the Bureau of Naval Weapons, De-  
partment of the Navy.

## 1. SCOPE

1.1 This specification covers requirements for pro-  
curement of compound impregnated wool felt sheet intended for chock  
padding and for anti-corrosive protective use.

## 2. APPLICABLE DOCUMENTS

2.1 The following specifications and standards form  
a part of this specification. Unless otherwise specified, the  
issue in effect on date of invitation for bids shall apply.

SPECIFICATIONSFederal

C-F-206	Felt, Sheet, Wool, Pressed
T-T-871	Twine, Cotton, Wrapping
UU-P-268	Paper, Kraft, Untreated, Wrapping
UU-P-271	Paper, Wrapping, Waterproof Kraft
UU-T-111	Tape, Paper, Gummed (Sealing and Securing)

FSC 8305

## MIL-F-17057A(Wep)

CCC-C-429	Cloth, Cotton, Osnaburg
CCC-C-467	Cloth, Jute (or Kenaf) Burlap
PPP-B-591	Boxes, Fiberboard, Wood-Cleated
PPP-B-601	Boxes, Wood-Cleated, Plywood
PPP-B-621	Boxes, Wood, Nailed and Lock-Corner

Military

MIL-B-13239	Barrier Material, Waterproof, Flexible, All Temperature
MIL-E-16663	Enamel, Semi-Gloss

STANDARDSFederal

FED-STD-191	Textile Test Methods
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Military

MIL-STD-10	Surface Roughness Waviness and Lay
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage

(When requesting any of the applicable documents, refer to both title and number. All requests should be made via the cognizant Government Inspector. Copies of this specification and other unclassified specifications and drawings required by contractors in connection with specific procurement functions should be obtained upon application to the Commanding Officer, Naval Supply Depot (Code DCI), 5801 Tabor Avenue, Philadelphia 20, Pa.

MIL-F-17057A(Wep)

All other documents should be obtained from the procuring activity or as directed by the Contracting Officer.)

2.2 Other publications - The following document forms a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

American Society for Testing and Materials

ASTM Book of Standards on Textiles

(Copies of ASTM publications may be obtained from the American Society for Testing and Materials, 1916 Race Street. Philadelphia 3, Pennsylvania.)

### 3. REQUIREMENTS

#### 3.1 Materials -

3.1.1 Carrier - Unless otherwise specified, the carrier shall be wool felt sheet conforming to Type I, Classification 8R5 of Specification C-F-206.

3.1.2 Impregnating Compound - The carrier shall be impregnated with a nondrying, nonoxidizing, water resistant, fungus resistant, anticorrosive, chromated compound having a minimum softening point of 165°F (74°C). The fungus resistant agent (which may be impregnated separately) shall be copper-8-quinolinolate, applied in solubilized or emulsion form, to provide a concentration of  $0.15 \pm .05$  percent copper in the dry treated materials (see 4.4.18 and 4.4.19.)

3.1.3 Adhesive - The compound impregnated felt sheet shall be coated, on one side only, with adhesive of the solvent-activated or of the pressure sensitive type. The adhesive shall provide the required bond without the use of auxiliary stapling.

MIL-F-17057A(Wep)

3.2 Compound impregnated felt sheet properties - The compound impregnated felt sheet shall have the properties specified in Table I when tested as specified in 4.4.5 to 4.4.8 inclusive.

TABLE I

Compound Impregnated Felt Sheet Properties

Thickness, Inch			Weight/Sq. Yd, Lbs		Breaking Strength	Compress-
Nominal	Min	Max	Min	Max	Lbs/2 In. Width	ibility, 1/ Percent
					Min	Min
1/16	0.045	0.075	0.80	1.40	15	50
1/8	0.090	0.135	1.45	2.20	30	45
3/16	0.140	0.195	2.25	2.95	45	40
1/4	0.200	0.275	3.00	3.80	60	35

1/ After accelerated ageing test,  $200 \pm 5^{\circ}\text{F}$  ( $93.3 \pm 3^{\circ}\text{C}$ ) for 48 hrs.

3.2.1 Impregnating Compound to carrier ratio - The impregnating compound to carrier weight ratio shall be not less than 0.40 (see 4.4.9).

3.2.2 Resistance to accelerated ageing - The compound impregnated felt sheet exposed to accelerated ageing, shall not become hardened or impaired in a manner which would adversely affect its serviceability (see 4.4.10).

3.2.3 Water absorption - The compound impregnated felt sheet shall show no more than a 50 percent increase in weight when tested for water absorption (see 4.4.11).

MIL-F-17057A(Wep)

3.2.4 Corrosion protection - When tested for corrosion protection, the compound impregnated felt sheet shall permit no corrosion of the metallic surfaces with which it is in contact (see 4.4.12).

3.2.5 Pliability - When tested for pliability, the compound impregnated felt sheet shall remain pliable without breaking or delaminating (see 4.4.13).

3.2.6 Fungus resistance - When tested for fungus resistance, the compound impregnated felt sheet shall show no visible fungus growth (see 4.4.14).

3.2.7 Retention of impregnation - When tested for retention of impregnation, the compound impregnated felt sheet shall show no evidence of extrusion of impregnating compound (see 4.4.15).

3.2.8 Compatibility with finished surfaces - When tested for compatibility, the compound impregnated felt sheet shall have no detrimental effect upon painted or lacquered surfaces (see 4.4.16).

3.2.9 Adhesion - When tested for adhesion, the adhesive bond between the compound impregnated felt sheet and the surface to which applied, shall be greater than the cohesive strength of the compound impregnated felt sheet (see 4.4.17).

### 3.3 Dimensions and put-up -

3.3.1 Length of rolls - As selected by the procuring activity, the compound impregnated felt sheet shall be furnished in rolls, wound as loosely as practicable, in the following nominal lengths:

<u>Thickness (inches)</u>	<u>Linear Feet</u>
1/16	100
1/8	50
3/16	50
1/4	25

## MIL-F-17057A(Wep)

3.3.2 Width - As specified by the procuring activity, material shall be furnished in widths from 1/4 to 60 inches.

3.3.3 Pre-cut pieces - As specified by the procuring activity, material shall be furnished in unit pieces from 1/4 to 6 inches wide, and from 1/4 to 30 inches long.

3.4 Tickets - Unless otherwise specified, each roll of compound impregnated felt sheet shall have a ticket attached to the selvage at the inner end of the felt with not finer than 5-ply cotton string doubled to not less than 8 inches long. The ticket shall be made of cardboard not less than 0.020 inch in thickness and the color shall be white or light in intensity to permit easy reading of printed or stamped markings. Entries on piece tickets shall be stamped or typed. Handwritten entries are prohibited. The ticket shall have a reinforced eyelet for attaching the typing cord and shall be legibly printed with water-insoluble ink with the following information:

Stock number

Nomenclature

Specification number

Yardage

Contract number and date

Contractor's name

Name of contracting agency

3.5 Workmanship - The compound impregnated felt sheet shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the acceptable quality levels specified herein.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specifications where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Compliance - Determination of compliance with provisions of this specification shall include quality conformance (lot-by-lot) inspection.

4.2.1 Quality conformance (lot-by-lot) inspection - The quality conformance inspection shall consist of examining and testing samples of compound impregnated wool felt sheet and impregnating compound from each lot for conformance to Section 3 of this specification, and examination of the sample of filled shipping containers from each lot for conformance to the packaging, packing, and marking requirements.

4.3 Sampling and acceptability criteria - Quality conformance inspection samples shall be taken from each lot of compound impregnated felt sheet. A lot shall consist of compound impregnated felt sheet produced under essentially the same conditions and in a single production run. Unless otherwise specified the lot size shall be expressed in units of 1 yard each.

4.3.1 Sample for yard-by-yard examination - The unit of product for this examination shall be one linear yard. A sample size for the yard-by-yard examination shall be selected in accordance with Standard MIL-STD-105, Inspection Level II, with an acceptable quality level of 2.5 for major defects and 6.5 for minor defects per 100 units (hards). Table II shows the number of rolls which shall be randomly selected from each lot. The required sample yardage to be examined shall comprise an approximately equal number of yards out of each selected roll.

4.3.2 Sample for overall examination and dimension examinations - A sample size and acceptance number for the overall examination (see 4.4.3) and dimension examination shall be in accordance with Table II. The unit of product for these examinations shall be one roll.

MIL-F-17057A(Wep)

TABLE II

Sample Size and Acceptance Number

<u>Lot Size in Yards</u>	<u>Sample Size in Rolls</u>	<u>Maximum No. of Defects Acceptable in Sample</u>
Up to 1300 <u>1</u> /	3	0
1301 to 3200	5	0
3201 to 8000	7	0
8001 to 22,000	10	0
22,000 to 110,000	15	0
110,000 and over	25	1

1/ If a lot contains fewer than 3 rolls, each roll in the lot shall be examined.

4.3.3 Sample for tests - The unit of product shall be 1 yard. The sample shall be in accordance with the following:

<u>Lot Size (Yards)</u>	<u>Sample Size (Units)</u>
800 or less	2
801 to 22,000 (inclusive)	3
Over 22,000	5

The lot shall be unacceptable if one or more units fail to meet any requirement specified.

4.3.3.1 The sample for tests shall include a 2 square foot sample of the untreated wool felt, 20 square feet, approximately, of the impregnated and adhesive coated material taken from a single lot prior to slitting; and 10 square feet, approximately, of the same material taken immediately prior to the application of adhesive. Samples shall be cut across the web and shall be taken not less than two feet from the end of the piece.



The adhesive coated sample shall have a minimum length of 80 inches and a minimum width of 35 inches; the sample without adhesive shall have a minimum length of 40 inches and a minimum width of 35 inches.

4.3.3.2 A sample of the impregnating compound representing each lot, shall be selected in accordance with ASTM Method E28 (Softening Point).

4.3.4 Sampling for packaging, packing, and marking examination - The sample unit shall be one shipping container fully prepared for delivery. The lot size shall be the number of containers in the inspection lot. The sample size shall be determined in accordance with Standard MIL-STD-105, inspection level L-4, and the acceptable quality level shall be 4.0 percent defective.

4.4 Inspection methods - Unless otherwise specified, inspection shall be conducted in accordance with provisions of Standard MIL-STD-105. Test conditions and methods shall be as described in Standard FED-STD-191, wherever applicable. Unless otherwise specified, the physical and chemical requirement values specified in Section 3 apply to the average of the determinations made on a unit of the product.

4.4.1 Yard-by-yard examination - In each roll of compound impregnated felt sheet selected, an approximately equal number of yards comprising the sample shall be subjected to the examination. The defects found shall be identified and classified in accordance with Table III. 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 compound impregnated felt sheet, in which case only the more serious defect shall be counted. A continuous defect shall be counted as one defect for each yard or fraction thereof in which it occurs.

MIL-F-17057A(Wep)

TABLE III

Classification of Defects

	<u>Major</u>	<u>Minor</u>
Holes caused by treatment operation	X	
Cut or tears caused by treatment operation	X	
Weak places	X	
Extraneous foreign matter	X	
Overall application of compound not uniform		X
Crease-embedded		X

4.4.2 Overall examination - The required number of rolls of compound impregnated felt sheet in the sample (see 4.3.2) shall be examined for defects as listed in Table IV. Each defect listed in Table IV shall be counted no more than once in each roll examined.

TABLE IV

Overall Defects

Rancid or unclean odor

Ticket or tag not attached

Marking incorrect, incomplete or illegible

4.4.3 Dimensions examination - Each length of compound impregnated felt sheet in the sample (see 4.3.2) shall be counted and measured. Width and length shall be measured as specified in Methods 5020 and 5010 of Standard FED-STD-191. Any gross length or width of a roll found to be less than the minimum number of pieces per roll specified in the contract, any gross length of a piece found to be less than the minimum length of the shortest piece in the roll as specified in the contract, or any gross length found to be less than the gross length marked on the piece ticket by 2 yards or more shall be considered a defect. The minimum number defects allowable is shown in Table II. The lot

MIL-F-17057A (Wep)

shall be unacceptable if the total of the actual gross lengths of pieces in the sample is less than the total of the gross lengths marked on the price tickets. The lot shall be unacceptable if the width of the compound impregnated felt sheet is not within tolerances specified.

4.4.4 Packaging, packing, and marking examination - Each sample shipping container fully prepared for delivery shall be examined to determine compliance with the packaging, packing, and marking requirements of this specification. Examination shall be made for the following defects:

Marking, exterior and interior	Missing, incorrect; illegible; of improper size, location, or method of application.
Materials	Component materials non-conforming, missing, damaged, or otherwise defective affecting serviceability.
Workmanship	Inadequate application of components such as incomplete closure of case liners, container flaps, loose strappings, inadequate stapling, bulging or distortion of container.
Weight	Gross weight exceeds requirement.

4.4.5 Thickness - The thickness shall be measured by a dial micrometer consisting of a anvil, with a minimum diameter of 2 inches, for supporting the specimen; a circular presser foot, having an area of  $1 \pm 0.0025$  square inch (1.129 inches in diameter), acting under a dead weight load of  $10 \pm 0.5$  ounces; and a dial graduated to read directly in thousandths of an inch. The anvil shall have a flat horizontal surface, and in measuring large pieces

## MIL-F-17057A(Wep)

of felt, the anvil shall be in the same place as the supporting table. The presser foot shall be of sufficient thickness to insure rigidity and the edges shall be rounded off with a radius of  $0.015 \pm 0.001$  inch. The surfaces of the presser foot and anvil shall be parallel to within 0.001 inch. Less than 0.5 ounce shall be required to overcome friction and to produce perceptible motion of the presser foot when counterbalanced. The load shall be applied gradually and without shock. The thickness reading shall be taken at least 10 seconds after the load is applied.. If a piece has a minimum linear dimension of less than 1 inch, the thickness shall be measured by cutting to fit and closely nesting a sufficient number of pieces to give a minimum linear dimension of  $1 \frac{1}{8}$  inches. The parts shall not be nested so tightly that they bulge. The thickness shall be the average of six determinations.

4.4.6 Weight - The weight per unit area shall be determined by weighing two 1-foot squares cut from the test piece, averaging their weight, and converting it by calculation to weight per square yard.

4.4.7 Breaking strength - Test specimens shall be 2 by 10 inches, four cut longitudinally and four cut transversely from the test sample. A pendulum type machine shall be used, the jaws through which the load is applied shall move at a uniform rate of  $12 \pm 2$  inches per minute. The test specimen shall be placed symmetrically in the jaws (smooth to prevent cutting) with the long dimension parallel to and the short dimension at right angles to the direction of application of the load. The breaking strength shall be the average of eight determinations.

4.4.8 Compressibility - Two steel plates, 2 by 6 inches containing two  $\frac{1}{2}$  inch bolt holes centered  $1\frac{1}{2}$  inches from either end and 1 inch from the sides shall be used. The two test plates shall be bolted together without the test specimen and the overall thickness of the plates (measurement "A") determined by micro-meters midway between the bolts. The plates shall be disassembled; reassembled with a specimen of the felt, 2 by 6 inches, aged as specified in 4.4.10, placed between them; the bolts inserted and the nuts drawn up finger tight. The overall thickness (measurement "B") shall again be determined midway between the bolts. The nuts shall then be drawn up, using a torque wrench to 250 inch

MIL-F-17057A(Wep)

pounds torque and the overall thickness (measurement "B<sub>1</sub>") again determined midway between the bolts. The compressibility shall be determined by the following equation:

$$\text{Compressibility (percent)} = \frac{B - B_1}{B - A} \times 100$$

Compressibility shall be the average of six determinations.

4.4.9 Impregnating compound to carrier ratio - The ratio of impregnating compound to felt carrier shall be determined by obtaining the difference in weight in pounds per square yard of the untreated and treated felt, and dividing this difference by the weight in pounds per square yard of the untreated felt.

4.4.10 Resistance to accelerated aging - Four test strips, 2 by 6 inches, shall be exposed to circulating room air in an electrically heated oven, maintained at a temperature of 200° ± 5°F (93.3° ± 3°C) for a period of 48 ± 1 hours. At the end of this period the test specimens shall be examined visually and manually.

4.4.11 Water absorption - Test specimens shall be 3 by 3 inches cut from the test material before application of the adhesive. The water bath shall be a liter beaker containing approximately 800 milliliters (ml) of water. The test pieces shall be weighed, immersed in water at 80 ± 2°F (26.7° ± 1°C) for twenty minutes, removed from the water bath, blotted free of surface water, and reweighed. Immersion shall be accomplished by weighing the test piece with a sufficiently heavy metal object so attached with a string that the test piece freely assumes a vertical position, the length of the string to be such that the piece is located approximately centrally in the water bath. Removal of surface water after immersion shall be accomplished by placing the test piece between two sheets of blotting paper on a solid horizontal surface and drawing a roller weighing 1 kilogram (kg) (eg. a round steel bar, 3 inches long, 1 3/4 inches diameter) over the assembly once and back. This entire operation should be performed as rapidly as possible, and the roller should be so moved that the weight upon the blotter is that of the roller alone unaugmented by any external pressure. Water absorption shall be the average of the two determinations.

MIL-F-17057A(Wep)

$$\frac{\text{Increase in weight} \times 100}{\text{Original dry weight}} = \text{percent water absorbed}$$

4.4.12 Corrosion protection - Test panels shall be 4 by  $1\frac{1}{2}$  by  $\frac{1}{4}$  inches of low carbon cold rolled steel, 7075 aluminum alloy, Navy brass, and phosphate treated steel. These shall be assembled, sandwich-wise, separated each from the next by strips of the test material, 1 by 4 inches (without adhesive). The order of the panels shall be steel, brass, aluminum, and phosphate treated steel. The assembly shall be bolted together with two suitable 5/16-inch bolts drawn to 100 inch-pounds torque. The assembly shall be placed in synthetic sea water in such a manner that  $\frac{1}{2}$  of each plate and of each test strip is immersed. The test shall be continued for 48 hours at a temperature of  $150 \pm 2^{\circ}\text{F}$  ( $66 \pm 1^{\circ}\text{C}$ ) with the test assembly inverted every 12 hours. After 48 hours, the test apparatus shall be disassembled and the panel surfaces contacting the test material examined for corrosion. The original level of the sea water solution shall be maintained throughout the test by periodic additions of distilled water. The composition of the synthetic sea water shall be as follows:

	<u>Grams per liter</u>
Magnesium chloride ( $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ ) . . . . .	22.0
Calcium Chloride ( $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ ) . . . . .	3.2
Anhydrous sodium sulphate ( $\text{Na}_2\text{SO}_4$ ) . . . . .	8.0
Sodium chloride ( $\text{NaCl}$ ) . . . . .	50.0

4.4.13 Pliability - Six test strips, 1 by 6 inches, of the finished material shall be exposed to a temperature of  $32 \pm 1^{\circ}\text{F}$  ( $0 \pm 0.6^{\circ}\text{C}$ ) for 24 hours. While cold, the specimens shall be examined manually and visually for change in pliability or for any tendency to break or delaminate.

4.4.14 Fungus resistance - The fungus resistance of the material shall be determined as specified in Standard FED-STD-191, Method 5751, qualitative procedure.

MIL-F-17057A(Wep)

4.4.15 Retention of impregnation - A 2 by 6 inches test strip of the compound impregnated felt sheet shall be placed between two steel panels 2 by 6 by  $\frac{1}{2}$  inches thick similar to those used in the compressibility tests (4.4.8). The apparatus shall be assembled as specified in 4.4.8 and the test strip compressed to the minimum compressibility value for the nominal thickness tested. The assembly shall be placed in an electrically heated air oven and held for 24 hours at  $150 \pm 2^{\circ}\text{F}$  ( $65.6 \pm 1^{\circ}\text{C}$ ). At the end of 24 hours, the assembly shall be disassembled and examined for extrusion of the compound on the non-adhesive side. The test shall be run in triplicate.

4.4.16 Compatibility with finished surfaces - Three steel test panels, as described in 4.4.12, shall be coated on both sides, by spraying as specified in Method 2131 of Standard MIL-STD-141; with semi-gloss air drying enamel conforming to Specification MIL-E-16663. These panels shall then be air dried for 24 hours in a well ventilated room, or chamber, free from drafts or dust and not in the direct rays of the sun. The temperature of the room shall be  $73.5 \pm 2^{\circ}\text{F}$  ( $23 \pm 1^{\circ}\text{C}$ ) and the relative humidity  $50 \pm 4$  percent. As assembly of the painted panels and the test material prepared as in 4.4.12 shall be held for 72 hours at  $115 \pm 2^{\circ}\text{F}$  ( $46 \pm 1^{\circ}\text{C}$ ). The test apparatus shall then be disassembled and the panel-test material interfaces examined visually for any indication of objectionable change. Any softening, peeling, blistering, or substantial color change shall be considered an indication of incompatibility. Any deposit which cannot be readily removed with one stroke by wiping with a cloth saturated with a solvent such as kerosene or stoddard solvent shall be considered evidence of incompatibility.

4.4.17 Adhesion - Adequacy of the adhesive bond shall be tested as follows: Twenty test strips 1 by 6 inches of the test material shall be applied, according to directions for use in practice, to 10 wood (moisture content 18% min) and 10 steel (roughness height rating of 63 in accordance with Standard MIL-STD-10) surfaces in such a manner that 5 inches of the test strip

## MIL-F-17057A(Wep)

adheres to the surface with 1 inch free. All assemblies shall be permitted to stand undisturbed at room temperature for 24 hours. Ten of the assemblies shall then be placed in an air circulating electrically heated oven and held at  $120 \pm 2^{\circ}\text{F}$  ( $48.9 \pm 1^{\circ}\text{C}$ ) for an additional 48 hours. The ten assemblies not exposed to elevated temperature shall be tested as follows at the end of the 24 hours; the other ten shall be given the same test after the additional 48 hours (plus a 30 minute cooling period at room temperature). The free end of each test strip shall be grasped with pliers or equivalent, of such a size and in such a manner, that the strip is caught across its entire width with the line marking the end of the jaw at right angles to the long dimension of the test strip, one half inch from the free end. A pull of steadily increasing force, without twisting shall be applied at right angles to the wood or steel surface until either the test piece delaminates or is pulled from the other surface. The latter result in any case shall be considered indicative of inadequate adhesion.

4.4.18 Softening point of the impregnating compound - The softening point of the impregnating compound shall be determined with Ring and Ball Apparatus in accordance with ASTM Method Designation E28.

4.4.19 Copper-8-quinolinolate - The copper-8-quinolinolate content of the compound impregnated felt sheet shall be determined in accordance with Method 2061 of Standard FED-STD-191.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging - Packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A - The compound impregnated felt sheet shall be wound open width on a convolute shipboard tube. The ends of the tube shall be flush with or extend not more than 1 inch beyond each side of the width of the rolled felt. Pre-cut compound impregnated felt sheets shall be neatly stacked in a bundle. Each roll or bundle shall be completely inclosed in two thicknesses of 60-pound basis weight kraft paper conforming to grade B of Specification UU-P-268. The paper wrapping shall be



MIL-F-17057A(Wep)

secured with 2-inch minimum width gummed paper tape conforming to class 3 of Specification UU-T-111.

5.1.2 Level C - The compound impregnated felt sheet shall be packaged in accordance with the industry's practice.

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

5.2.1 Level A - Each roll or bundle of compound impregnated felt sheet, packaged as specified in 5.1, shall be completely overwrapped with waterproof barrier-material conforming to class B-2 of Specification UU-P-271 of type CW-1 of Specification MIL-B-13239. All joints, seams, and closures of the wrap shall be effectively sealed so as to provide a water resistance equal to that provided by the barrier-material. Each overwrapped roll or bundle of compound impregnated felt sheet shall be wrapped and sewn in cotton osnaburg cloth conforming to Type I, class 2, finish A of Specification CCC-C-429 or jute (or kenaf) burlap cloth conforming to class 1 of Specification CCC-C-467. The wrapping shall be securely sewn with 16-ply cotton twine conforming to Specification T-T-871, with approximately one stitch to the inch and every third stitch knotted. Five inches of surplus covering shall be gathered together on each of the four corners and securely sewn into ears for handles. In lieu of the sewn wrapping, the cloth covering may be in bias-sewn tubing form or bags (tubing presewn one end) with closure effected by securing each open end with two wire ties. The first wire tie shall be applied as close to the roll or bundle as possible. The second wire tie shall be applied approximately 1 inch from the first wire tie, with the twisted ends positioned opposite to the ends of the first wire tie. The wire ties shall be not less than 6-inch long 15-gage soft iron or steel with a  $\frac{1}{2}$ -inch diameter formed eye at each end. Alternatively, shipping containers may be used that conform to overseas type of Specification PPP-B-591 or PPP-B-601; or class 2, style 2 or 4 of Specification PPP-B-621. Each shipping container shall be closed and flat steel strapped in accordance with the appendix of the applicable container specification. The net weight of rolls and bundled sheets of compound impregnated felt sheet in a cloth covering or shipping container shall not exceed 200 pounds, except where the prescribed length allowance of an individual roll exceeds this weight.

MIL-F-17057A(Wep)

5.2.2 Level B - Each roll or bundle of compound impregnated felt sheet, packaged as specified in 5.1, shall be wrapped or bagged in cloth covering as specified in 5.2.1, except that the waterproof barrier-material shall not be required. Alternatively, shipping containers may be used that conform to domestic type, style A or B of Specification PPP-B-591 or PPP-B-601; or class 1, style 2 or 4 of Specification PPP-B-621. The net weight of rolls and bundled sheets of felt in a cloth covering or shipping container shall not exceed 200 pounds, except where the prescribed length allowance of an individual roll exceeds this eight.

5.2.3 Level C - The compound impregnated felt sheet, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination. Shipments shall be in accordance with Uniform Freight Classification Rules or regulations other carriers applicable to the mode of transportation.

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

## 6. NOTES

6.1 Intended use - The compound impregnated felt sheet covered by this specification is intended to be applied to chock surfaces in such a way that, interposed between the chock and the part to be supported, it affords padding and anti-corrosive protection.

6.2 Ordering data - Procurement documents should specify the following:

- a. Title, number and date of this specification
- b. Whether the material is to be furnished in rolls or pre-cut pieces.
- bl. Thickness and width, if rolls are required

MIL-F-17057A (Wep)

- b2. Thickness, width, and length, if pre-cut pieces are required
- c. Quantity required
- d. Selection of applicable levels of packaging and packing.