

MIL-F-26862B
26 June 1970
~~SUPERSEDED~~
MIL-F-26862A (USAF)
4 September 1964

MILITARY SPECIFICATION
FIBERBOARD, SOLID, NON-CORROSIVE, FUNGI-
RESISTANT FOR INTERIOR BLOCKING APPLICATIONS

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

1. SCOPE

1.1 This specification establishes the requirements for non-corrosive and fungus resistant cushioning and blocking material for packaging and packing application.

1.2 Classification. The fiberboard shall be of the following types and classes as specified (see 6.2).

Type I - Single ply
Type II - Laminated Multiple ply

1.2.1 Classes. Type I fiberboard shall be furnished in the following classes as specified (see 6.2).

Class 1 - 1/2 inch thick
Class 2 - 3/4 inch thick

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

MMM-A-260	Adhesive, Water-Resistance for Sealing Waterproof Paper
PPP-B-576	Boxes, Wood, Cleated, Veneer, Paper Overlaid
PPP-B-585	Boxes, Wood, Wire Bound
PPP-B-591	Boxes, Fiberboard, Wood-Cleated
PPP-B-601	Boxes, Wood, Cleated Plywood
PPP-B-621	Box, Wood, Nailed and Lock-Corner

MIL-F-26862B

PPP-B-636	Box, Fiberboard
PPP-B-640	Boxes, Fiberboard, Corrugated, Triple Wall
PPP-B-1055	Barrier Material, Waterproof, Flexible
PPP-C-650	Crates, Wood, Open, Covered

Military

MIL-P-116	Preservation, Methods of
MIL-F-8261	Fungus-Resistance Tests, Aeronautical and Associated Materials, General Specification for

STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-147	Palletized and Containerized Unit Loads 40"x 48" Pallets, Skids, Runners, or Pallet-Type Bases

Federal

FED-STD-NO. 101	Preservation, Packaging, and Packing Materials - Test Procedures
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(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications The following publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issue in effect on the date of invitation for bids or request for proposal shall apply.

American Society for Testing Materials

ASTM C209-60, Standard Methods of Testing Structural Insulating Board Made from Vegetable Fibers

(Copies of ASTM publications may be obtained upon application to the American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103.)

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Rules

(Application for copies should be addressed to the Uniform Classification Committee, Room 202, Union Station, 516 West Jackson Boulevard, Chicago, ILL 60606)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2. REQUIREMENTS

3.1 Materials.

3.1.1 Fiberboard. The solid fiberboard shall be made from chemical pulp, mechanical pulp, clean waste generated from such pulp and the necessary additives to assure that the fiberboard will meet the requirements of this specification.

3.2 Construction. Solid fiberboard shall be flat molded or laminated sheets, or fabricated forms as specified (see 6.2)

3.3 Dimensions. Dimensions for sheet, laminate, and special fabricated forms shall be as specified (see 6.2).

3.3.1 Tolerance. Dimensional tolerance on length and width shall not exceed plus or minus 1/16 inch per foot.

3.3.1.1 Planing and Sanding. Planing and sanding on one side only will be permitted to maintain thickness tolerance for sheets.

3.3.2 Special fabricated forms. Fabricated forms shall conform to the design and dimensions (with tolerances) in accordance with drawings or descriptions furnished with contract or order.

3.4 Density. Unless otherwise specified in contract or order, the density of the fiberboard shall not exceed 20 pounds per cubic foot when tested in accordance with 4.4.1.

3.5 Hydrogen Ion concentration (pH). The pH value of the fiberboard shall be not less than 6.5 or more than 7.5 when tested in accordance with 4.4.2.

3.6 Acid content. The water soluble acidity of the finished material, when tested as specified in 4.4.3, shall not be more than 0.01% equivalent sulfur trioxide (SO₃).

3.7 Fungus resistance. The finished board shall not support fungus growth when subjected to test organisms and test procedures as specified in 4.4.4. When laminated material is tested, there shall be no evidence of fungus growth on the fiber of the board or on the bonding agent.

3.8 Dusting. The weight loss of the fiberboard through dusting shall not exceed 1.0% of the original weight when tested in accordance with 4.4.5.

3.9 Strength Properties.

3.9.1 Transverse load without rupture. The minimum permissible values for transverse load without rupture shall be 14 pounds for 1/2 inch fiberboard and 21 pounds for 3/4 inch fiberboard in the dry condition when tested in accordance with 4.4.6.

3.9.2 Deflection at breaking load. The minimum permissible values for deflection at breaking load shall be 0.25 inch for 1/2 inch fiberboard and 0.19 inch for 3/4 inch fiberboard when tested in accordance with 4.4.7.

MIL-P-26862B

3.10 Bonding agent. The bonding agent used in laminating two or more homogeneous sheets or layers of material to a specified thickness shall be water-resistant, fungistatic and noncorrosive. There shall be no evidence of delamination of the bonded board.

3.11 Workmanship. Fiberboard shall be uniform in color, texture, and density, and shall be free from defects that may affect its serviceability.

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 in the contract or order, the supplier 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.

4.2 Classification of inspection. The inspection and testing of fiberboard material shall be classified as acceptance tests.

4.2.1 Inspection. Sampling for inspection shall be performed in accordance with the provisions set forth in MIL-STD-105, except where otherwise specified.

4.3 Component and material inspection. In accordance with 4.1, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.3.1 Inspection of the end item.

4.3.1.1 Examination of the end item. The end item shall be examined in accordance with the classification of defects, inspection levels and acceptable quality levels (AQLs) set forth below. The lot size, for the purpose of determining the sample size in accordance with MIL-STD-105, shall be expressed in units of forms or sheets of fiberboard for examination under 4.3.1.2 and 4.3.1.3 in units of bundles for examination under 4.3.1.4 and in units of shipping containers for examination under 4.3.1.5.

4.3.1.2 Examination of the end item for defects in appearance, construction, and workmanship. The sample unit for this examination shall be one form or sheet of fiberboard.

Examine	Defect	Major Minor
Appearance and formation	Not type specified. Not formed without the use of skin surface films.	X

MIL-F-26862B

Examine	Defect	Major	Minor
Workmanship	Color, texture or formation not uniform and homogeneous.	X	
	Special fabricated forms do not conform to design drawings when specified.	X	
	Presence of mold or other fungus growth.	X	
	Dirt, grit, grease, dust, or other foreign matter on sheets or forms.	X	
	Ragged, uneven, or crushed edge.	X	
	Torn, split, or punctured sheet or form.	X	
	Any structural weakness in molded form caused by method of fabrication.	X	

4.3.1.3 Examination of the end item for dimensional defects. The sample unit for this examination shall be one form or sheet of fiberboard.

Examine	Defect	Major	Minor
Length or width	Varies from specified dimensions by more than plus or minus 1/16 inch per foot.	X	
Trim	Not square; i. e., the difference between the length of two diagonals exceeds 1/16 inch.	X	

4.3.1.4 Examination of the end item count per bundle. The sample unit for this examination shall be one bundle of forms or sheets. The average count per bundle shall be not less than the specified or indicated quantity.

4.3.1.5 Examination of preparation for delivery. An examination shall be made to determine that materials, workmanship, contents, weight, and markings comply with the requirements of section 5 of this specification. The sample unit shall be one shipping container, fully packed, selected just prior to the closing operation. Shipping containers fully prepared for delivery shall be examined for closure defects.

Examine	Defect	Major	Minor
Materials	Any packaging or packing component or material missing, damaged, or not as specified.	X	

MIL-F-26862B

Examine	Defect	Major	Minor
Workmanship	Inadequate application of component or material such as inadequate or incomplete closure of container flap or barrier material, when specified; inadequate, loose or crooked strapping, when applicable; bulge or distortion of shipping container.	X	
Contents	Number of bundles per shipping container less than quantity specified or indicated	X	
Weight (Bundle, container and pallet as applicable)	Gross weight exceeds requirements	X	
Marking (interior and exterior)	Omitted, incomplete, incorrect, illegible or not in accordance with requirements	X	

4.3.1.6 Inspection levels and acceptable quality levels (AQLs) for examination. The inspection levels for determining the sample size and the acceptable quality levels (AQLs), based on defects per 100 units, shall be as follows:

Examination Paragraphs	Inspection Levels	AQL
4.3.1.2	S-4	4.0
4.3.1.3	S-1	4.0
4.3.1.4	S-2	—
4.3.1.5	S-2	4.0

4.3.2 Testing of end item. The end item shall be tested for the applicable characteristics as indicated in table I for each lot presented for examination, for each type and class of the same material. The sample unit for test shall be two sheets or forms. Each sample unit for test shall be drawn from different packages or bundles and, insofar as practicable, shall be taken from different shipping containers for a better representation of the lot. Five sample units, randomly selected, shall be tested with no evidence of failure to meet the requirements specified in section 3.

4.4 Test methods.

4.4.1 Density. The density shall be determined in accordance with method 4008 of Federal Test Method Standard No. 101. Density is to be based on non-laminated material only.

4.4.2 Hydrogen Ion concentration (pH) The pH values shall be determined in accordance with Method 6002 of Federal Test Method Standard No. 101

*4.4.3 Acid content. Acid content tests shall be determined in accordance with Method 6002 of Federal Test Method Standard No. 101.

TABLE 1

INSTRUCTIONS FOR TESTING

CHARACTERISTIC	Specification Reference		Requirements		Number Determinations Per Sample Unit	Results Reported as	
	Requirement	Test Method	Applicable to Individual Unit	Lot Average		Pass or Numerically Failed 2/ to nearest 3/	
Density	3.4	4.4.1	-	X	Avg of 3	-	0.1 pound/cu ft
Hydrogen ion concentration (pH)	3.5	4.4.2	-	-	Avg of 2 on composite 1/ Avg of 2 on composite 1/ 2	-	0.1 pH value
Acid content	3.6	4.4.3	-	-		-	0.1 percent
Surge resistance	3.7	4.4.4	X	-		X	-
Dusting	3.8	4.4.5	-	-	Avg of 2 on composite 1/	-	0.1 percent
Strength							
Transverse load	3.9.1	4.4.6	-	X	Avg of 3	-	0.1 pounds
Short direction	3.9.1	4.4.6	-	X	Avg of 3	-	0.1 pounds
Deflection at breaking load							
Long direction	3.9.2	4.4.7	-	X	Avg of 3	-	0.01 inch
Short direction	3.9.2	4.4.7	-	X	Avg of 3	-	0.01 inch
Thickness							
a. Average	2.3.1	4.4.8	-	X	Avg of 5	-	0.001 inch
b. Variation	3.3.1	4.4.8	X	-	5	X	-

NOTES:

- 1/ The composite sample shall consist of representative pieces taken from all of the sample units.
- 2/ When failure is indicated, report either description of failure or numerical point of failure, as applicable.
- 3/ Test reports shall include all values which results are based.

MIL-P-26862B

4.4.4 Fungus resistant. The fungus resistance tests shall be in accordance with MIL-F-8261.

4.4.5 Dusting. Dusting shall be determined in accordance with Method 4011, procedure A of Federal Test Method Standard No. 101.

4.4.6 Transverse load without rupture. Transverse load without rupture shall be tested in accordance with ASTM C209-60 covered in paragraph 10 to 13 inclusive.

4.4.7 Deflection at breaking load. Deflection at breaking load shall be tested in accordance with ASTM C209-60 as covered in paragraph 16 and 17.

*4.4.8 Thickness. Thickness shall be determined in accordance with Method 1003 of Federal Test Method Standard No. 101.

5. PREPARATION FOR DELIVERY

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

5.1.1 Level A. Fiberboard shall be unit protected and packaged in accordance with Method III of MIL-P-116 and as follows:

5.1.1.1 Sheets and laminates. Sheets and laminates shall be bundled; bundles shall be secured by any suitable means. Bundles shall be protected from damage by the use of edge and corner protectors during securing operation and shipment.

*5.1.1.2 Special forms. Forms shall be packaged in bundles as specified for sheets and laminates or in weather resistant fiberboard boxes conforming to the requirements of PPP-B-636. Bundle size, weight, etc., shall be as specified in the contract or order (see 6.2).

*5.1.2 Level C. Fiberboard shall be packaged in a manner which will afford adequate protection against deterioration and physical damage during shipment from supply source to the first receiving activity for immediate use, or controlled humidity storage. This level may be the suppliers commercial practice when such meets the requirements of this level.

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

*5.2.1 Level A. Except for fiberboard packaged in weather resistant boxes with waterproof closure, fiberboard packaged as specified in 5.1 shall be packed in an overseas type weather resistant shipping container conforming to the requirements of any one of the following specifications: PPP-B-640, PPP-B-601, PPP-B-591, PPP-B-576, PPP-B-621, and PPP-B-585. Case liner shall be used on packages shall be wrapped prior to packing. Material for liner or wrap shall conform to the requirements of PPP-B-1055 and all seams shall be sealed with adhesive conforming to the requirements of MMM-A-260. When using weather resistant fiberboard boxes, the only packing required is to make a waterproof closure.

*5.2.2.1 When specified, the fiberboard container shall be a grade V3c, V3s or V4s, fabricated in accordance with PPP-B-640 and PPP-B-636 and closed in accordance with the appendix thereto (see 6.2).

MIL-P-263623

5.2.2 Level B. Except for fiberboard packaged in boxes, fiberboard packaged as specified in 5.1 shall be packed in domestic type containers conforming to the requirements of any one of the following specifications: PPP-B-640, PPP-B-601, PPP-B-636, PPP-B-591, or PPP-B-576.

5.2.3 Level C. Fiberboard shall be packed in a manner which affords adequate protection against damage during direct shipment from the supply source to the first receiving activity for immediate use. This level shall conform to applicable carrier rules and regulations and may be the suppliers commercial practice if such meets the requirements of this level.

5.3 Palletized unit loads. When specified, palletized unit loads shall conform to the applicable requirements of MIL-STD-147. When level "A" packing is specified, fiberboard shall be wrapped with waterproof barrier conforming to the requirements of PPP-B-1055. The gross weight of a palletized load shall not exceed 1200 pounds.

5.4 Marking. In addition to any special markings required in contract or order, interior and exterior containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The fiberboard covered by this specification is intended for use in packaging Government property where a non-corrosive, fungus resistant material is needed to afford protection against vibration and impact damage during shipment and handling.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Selection of applicable Type and Class (see 1.2).
- c. Form and dimensions (see 3.2 and 3.3).
- d. Drawings for special fabricated forms (see 3.3.2).
- e. Levels of packaging and packing fiberboard sheets, pads, partitions, shapes, etc., (see 5.1 through 5.3).
- f. When weather resistant grade fiberboard shipping containers are required for level "B" packing (see 5.2.2.1).

Custodians:

Air Force - 69
Navy - SA

Review Activities:

Air Force - 70, 71, 82, 84, 85
Army - GL, SM
Navy - AS

User:

Army - MU,
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Preparing Activity:

Air Force - 69

Project Number: 8135-0293

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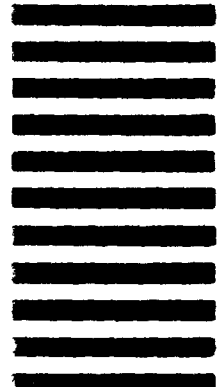
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c Reason/Rationale for Recommendation			
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