

MIL-P-26342B (USAF)
 30 May 1975
 SUPERSEDING
 MIL-P-26342A (USAF)
 11 August 1969

MILITARY SPECIFICATION

PALLET BOX, FIBERBOARD, EXPENDABLE; FOR AIR SHIPMENT

1. SCOPE

1.1 Scope. This specification covers two classes of expendable, fiberboard pallet boxes, knocked down, for use as consolidation containers for domestic or overseas air shipment of supplies, and the requirements for their closure and strapping (See appendix).

1.2 Classification.

1.2.1 Classes. Pallet boxes shall be one of the following classes, as specified (See 6.2):

Class - Domestic
 Class - Weather Resistant

1.2.2 Sizes. Unless otherwise specified, pallet boxes shall be one of the following standard sizes and maximum load capacities (See 6.2).

STANDARD SIZES	PALLET, TRAY & CAP Outside LxW in Inches		BODY Depth in Inches			CAPACITY MAX. Pounds	
A1	35x35		12			500	
A2	35x35			24		500	
A3	35x35				36	500	
B1		48x40	12				800
B2		48x40		24			800
B3		48x40			36		800

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

QQ-S-781
 MMM-A-250

Strapping, Steel, Flat and Seals
 Adhesive, Water-Resistant (For Closure of
 Fiberboard Boxes)

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PPP-B-636	Boxes, Shipping, Fiberboard
PPP-F-320	Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes
PPP-P-291	Paperboard, Wrapping and Cushioning

STANDARDS

Military

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

Federal

Fed. Test Method 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.)

3. REQUIREMENTS

3.1 Material.

3.1.1 Fiberboard. The fiberboard material used to fabricate the trays, body, cap, inserts and portions of the base shall conform to class-domestic or class weather-resistant of PPP-F-320 as specified (See 6.2). The paperboard used to fabricate the posts or supports shall conform to Type III, Style I, of PPP-P-291.

3.1.2 Metal Fasteners. Metal fasteners shall conform to the requirements of PPP-B-636. The size of fasteners shall be as specified in 3.1.2.1(a) or (f) and 3.1.2.2(a) or (e) of PPP-B-636. Placement of fasteners shall be as specified in 3.3.4 herein. The fasteners shall not open or unclinch when tested in accordance with 4.4.1.

3.1.3 Adhesive. Adhesive conforming to MMM-A-250 shall be used for fabrication of posts, the securing of top deck and base to pallet posts, and to secure the manufacturer's joint.

3.2 Design and Construction. The pallet box shall consist of a base pallet, a tray, a body and a top cap. When specified (See 3.3.6 and 6.2) dividing inserts shall be provided. When required (See 3.3.3), the auxiliary tray shall be included as a component part. When specified (See 6.2), an alternate interlocking top cap and tray may be used. The requirements shall be as specified in PPP-B-636.

3.3 Dimensions. Dimensions shall conform to those specified in 1.2.2. A tolerance of $\pm 1/8$ inch is permitted.

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3.3.1 Base Pallet. The pallet shall be of the 9 post, 4 way entry type, having a top and bottom deck (see Figure 1). The top deck shall be provided with slots along its perimeter to match the corresponding drainage slots of the superimposed tray (See 3.3.2). When specified (See 6.2 and 3.3.2), the tray shall be substituted for the top deck in fabricating the base pallet. The post shall be fabricated from a strip of paperboard conforming to the requirements of PPP-P-291, Type III, Style 1. Paperboard strips shall not be less than 4 inches wide. The length of the strip shall be adequate to fabricate a 5 inch diameter post for sizes A1, A2, and A3, and a 7 inch diameter post for sizes B1, B2, and B3. During rolling operations, adhesive (See 3.1.3) shall be applied to the entire length of the corrugated side of the paperboard. Using the same adhesive, the posts shall be securely attached to the top and bottom deck. The top and bottom deck shall be the same size and thickness and fabricated from weather resistant fiberboard material, minimum requirement is grade V3C in accordance with the requirements of PPP-F-320. When loaded, the minimum clearance for forklift entry shall be 3-5/8 inches and the width of the opening for the entry shall be minimum 7 inches.

3.3.2 Tray. The tray shall be the same size as the top deck of the pallet and shall fit over the outside faces of the body extending upward a minimum of 3 inches. When fitted over the body, the fit shall be a smooth, tight fit with the flaps fastened to the outside along the longest dimension (see Figure 1). The tray shall have drainage slots as shown in Figure 1. The slots shall be 3/8 inch wide and 3/4 inch long, $\pm 1/16$ inch, on all sides and bottom, as shown. They shall be spaced not less than 10 inches nor more than 12 inches apart around the perimeter of the tray. If the tray is not substituted for the top deck on the pallet, then the top deck of the pallet shall be slotted for drainage also.

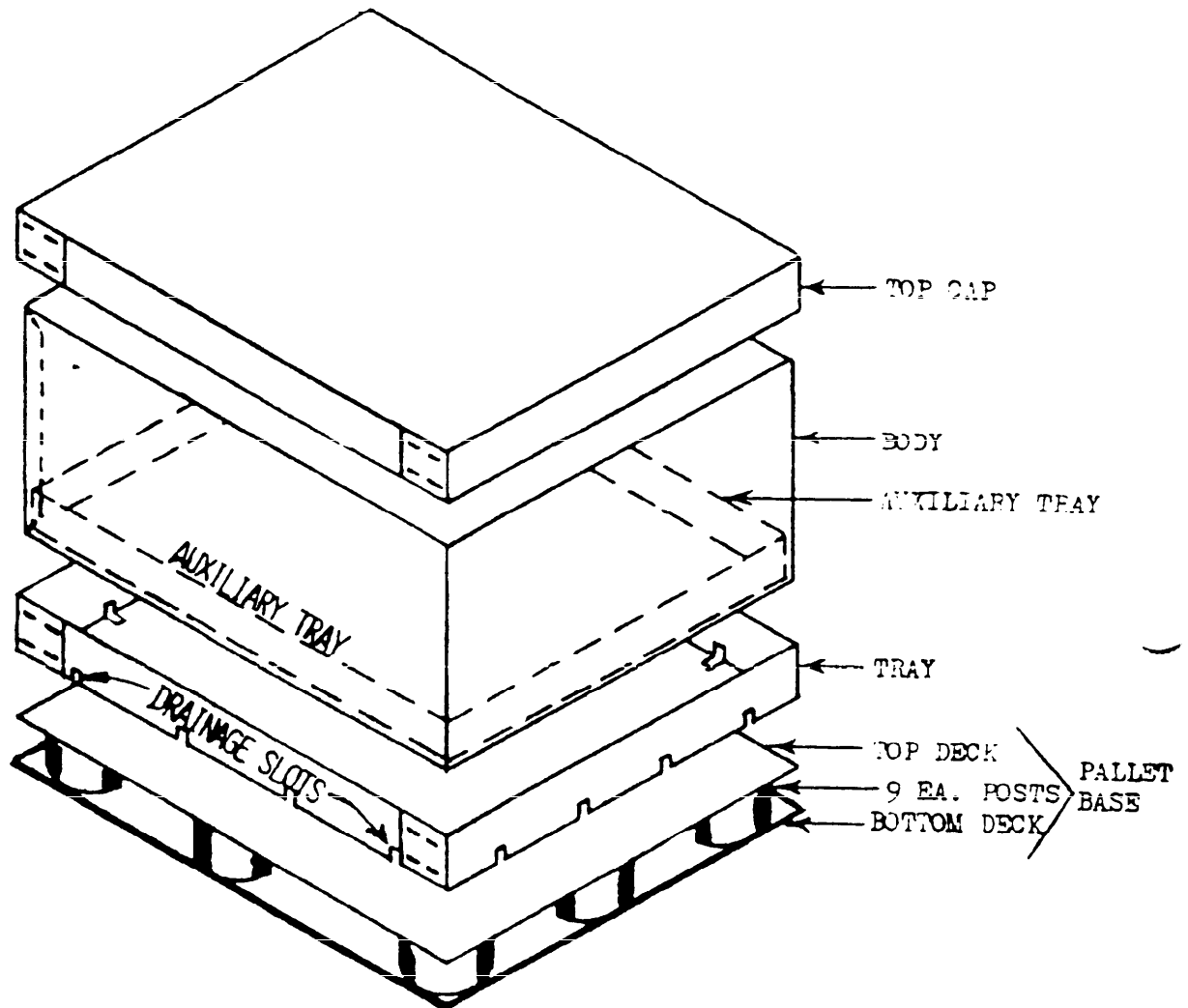
3.3.3 Auxiliary Tray for Class Weather-Resistant. Class weather-resistant pallet boxes shall contain an auxiliary tray as shown in Figure 1. The length and width of this tray shall be within the inside dimensions of the body and have a minimum height of 3 inches.

3.3.4 Body. The body shall consist of a square or rectangular sleeve with the lap (manufacturer's) joint on the inside. The lap shall be a minimum of 2 inches and shall be secured by stitching, stapling, or taping. The fasteners (stitches or staples) for the body (manufacturer's) joint shall be applied diagonally at about 45 degrees. Spacing of these fasteners shall be not more than one (1) inch between the lower tip of one staple to the top tip of the staple directly below. The first and last staple shall be placed 1/2 ($\pm 1/8$) inch from the end of the lap. The overall length and width of the body shall be within the inside dimension of the tray. The depth shall be as specified in 1.2.2.

3.3.5 Top Cap. The cap shall be an inverted tray (See 3.3.2), less drainage slots, that will extend downward a minimum of 3 inches over the faces of the body.

3.3.6 Dividing Inserts (partitions). When specified, inserts shall be provided for the partitioning of the body interior into compartments (See 6.2). The inserts shall be fabricated from 200-pound, A or C

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NOTE: AUXILIARY TRAY IS REQUIRED FOR
CLASS-WEATHER RESISTANT ONLY.

FIGURE 1.
COMPONENT PARTS OF FIBERBOARD PALLET BOX.

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flute fiberboard conforming to PPP-F-320, and shall conform to the details specified in Figure 2. When two or more layers of partitions are required, separator(s) (flat sheet) of the same material as the inserts and having a length and width corresponding to the inside dimensions of the body shall be provided between the stacked inserts.

3.4 Performance.

3.4.1 Four-Point Concentrated Load for Pallet Base. The pallet base shall withstand the specified concentrated load for 10 minutes and shall maintain a minimum 3-5/8 inch vertical clearance for forklift entry when tested in accordance with 4.4.2.

3.4.2 Top Superimposed Load for Assembled Pallet Box. The empty pallet box (without inserts) shall support the specified superimposed load for 10 minutes when tested in accordance with 4.4.3.

3.5 Workmanship. The pallet box shall be free from evidence of inferior workmanship, such as surface scuffing, blisters, imperfect adhesion, ragged cuts, and other defects which may affect its serviceability and appearance.

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. 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 the pallet boxes shall be classified as acceptance tests.

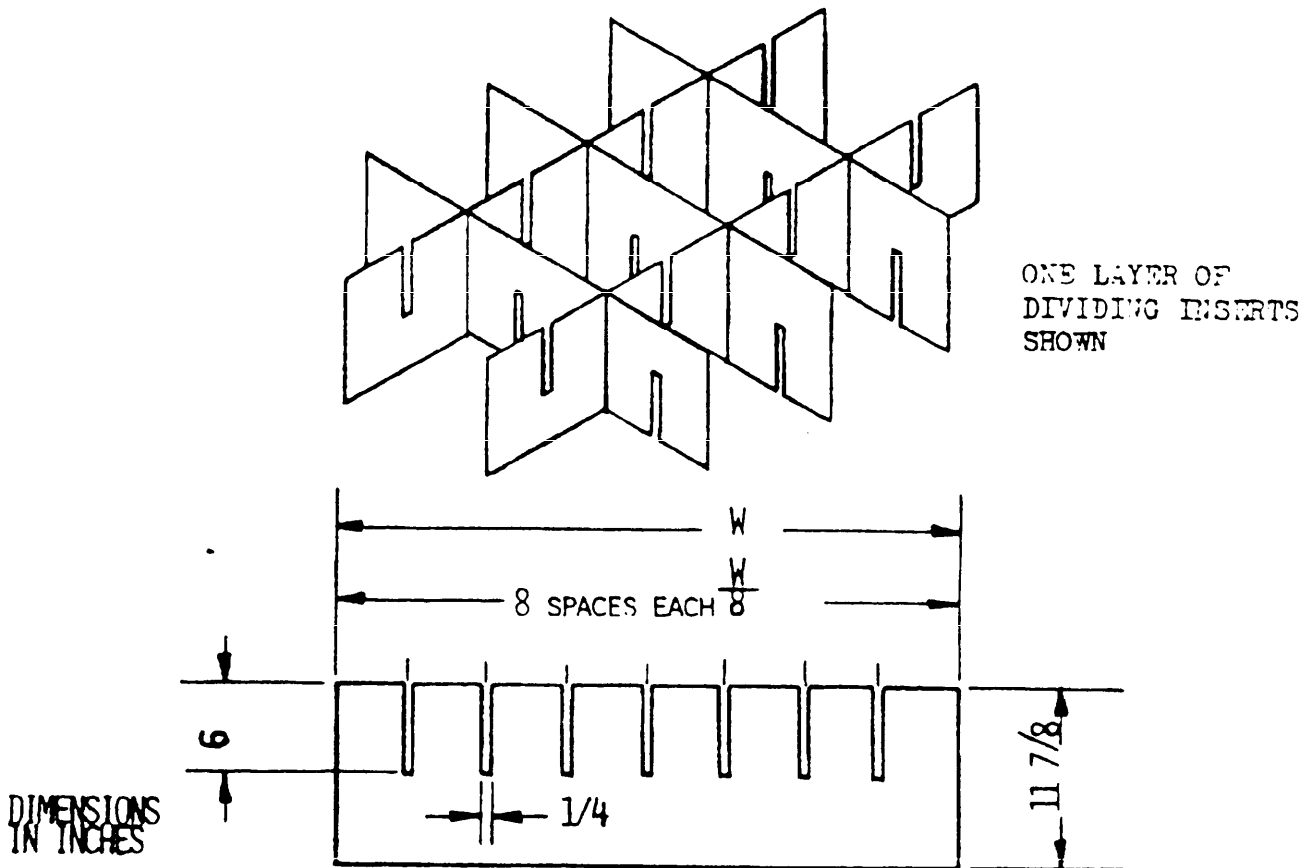
4.2.1 Inspection. Sampling for inspection shall be performed in accordance with the provisions set forth in MIL-STD-105, except where otherwise specified.

4.3 Component and Material Inspection. In accordance with 4.1 above, 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 Testing of Components. Testing shall be performed on the components indicated in Table 1 for the applicable characteristics specified therein. The sample unit and sample size to be tested, randomly selected, shall be as shown in Table 1.

4.3.2 Inspection of the End Item.

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- W = LENGTH OF INSERT WHICH SHALL CORRESPOND TO THE INSIDE DIMENSION OF THE BODY.
- W₃₅ = SIZE OF INSERT CORRESPONDING TO 35-INCH OUTSIDE DIMENSION.
- W₄₀ = SIZE OF INSERT CORRESPONDING TO 40-INCH OUTSIDE DIMENSION.
- W₄₈ = SIZE OF INSERT CORRESPONDING TO 48-INCH OUTSIDE DIMENSION.

NUMBER OF INSERTS REQUIRED FOR EACH PALLET SIZE

PALLET SIZE NUMBER	INSERT SIZE NUMBER		
	W ₃₅	W ₄₀	W ₄₈

A1	5	---	---	FOR 1 LAYER
A2	10	---	---	FOR 2 LAYERS
A3	15	---	---	FOR 3 LAYERS
B1	---	3	2	FOR 1 LAYER
B2	---	6	4	FOR 2 LAYERS
B3	---	9	6	FOR 3 LAYERS

FIGURE 2
REQUIREMENTS FOR DIVIDING INSERTS, (PARTITIONS)

4.3.2.1 Examination of the End Item. Examination of the end item shall be in accordance with the classification of defects, inspection levels and acceptable quality levels (AQLs) set forth below. A random sample of pallets, including cap, body, tray, pallet, and dividing inserts, shall be selected from each lot for each class and size offered for acceptance for visual and dimensional characteristics.

4.3.2.2 Examination of the End Item for Sporadic Type of Defects in Appearance, Construction, and Workmanship. The sample unit for the examination shall be one complete box, including cap, body, tray, inserts, and pallet:

EXAMINE	DEFECT
CONDITION (Cap, body, tray, inserts and pallet)	Tear, split, or puncture (affecting serviceability).
	Unduly dirty, stained or scuffed.
	Unduly ragged, uneven, or crushed edges.
	NOTE: Defect of crushed edge shall not apply to area of manufacturer's joint.
	Edge or ply separation more than 1/2 inch for fiberboard. (Examine visually, measure if in doubt.)
SCORING (Cap, body and tray)	Outer component ply or facing split completely through when folded in normal manner during assembly of cap, body or tray.
METAL FASTENERS (Staple or stitching wire)	One or more required fastenings not completely within overlap area; does not pass completely through all pieces to be fastened; not well clinched; visibly cracked or rusted. Not flush with the fiberboard.

4.3.2.3 Examination of the End Item for Overall Type of Defects. The sample unit for the examination shall be one complete box, including cap, body, tray, inserts and pallet:

EXAMINE	DEFECT
CAP, BODY, TRAY INSERTS & PALLET	
TYPE OF BOARD	Not in accordance with PPP-F-320.

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TABLE I - TESTING OF COMPONENTS AND MATERIALS

Component and characteristic	Basic specification requirements paragraph	Test Method specification	Requirements applicable to		Results reported numerically to nearest	Sample unit	Sample size
			Individual unit	Lot average			
Stitching wire <u>2</u> /	3.1.2	Visual <u>1</u> /	-	-	-	-	-
Thickness	-	-	X	-	0.001 inch	2 inches	5 each
Width	-	-	X	-	0.001 inch	-	-
Metal fasteners <u>2</u> /	3.1.2	Visual <u>1</u> /	-	-	-	1 staple	5 each
Thickness	-	-	X	-	0.001 inch	-	-
Width	-	-	X	-	0.001 inch	-	-
Crown width	-	-	X	-	0.001 inch	-	-

1/ Determination shall be made by use of a properly calibrated micrometer of a suitable type.

2/ Failure of more than one unit to meet the applicable requirements shall be cause for rejection.

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CONDITION OF BOARD	Not new.
SCORING AND SLOTTING	Poor scoring, making it excessively difficult to fold - cap, body, and tray into required position.
	Does not set up properly due to improper scoring or slotting.

4.3.2.4 Examination of the End Item for Count Per Bundle. The sample unit for this examination shall be one bundle of boxes, including cap, body, tray, inserts and pallet. The count per bundle shall be not less than the specified or indicated quantity of complete boxes, including components as required.

4.3.2.5 Examination of Preparation for Delivery. An examination shall be made to determine that packaging, packing, and markings comply with the requirements of section 5 of this specification. The sample unit for this examination shall be one pallet box prepared for delivery.

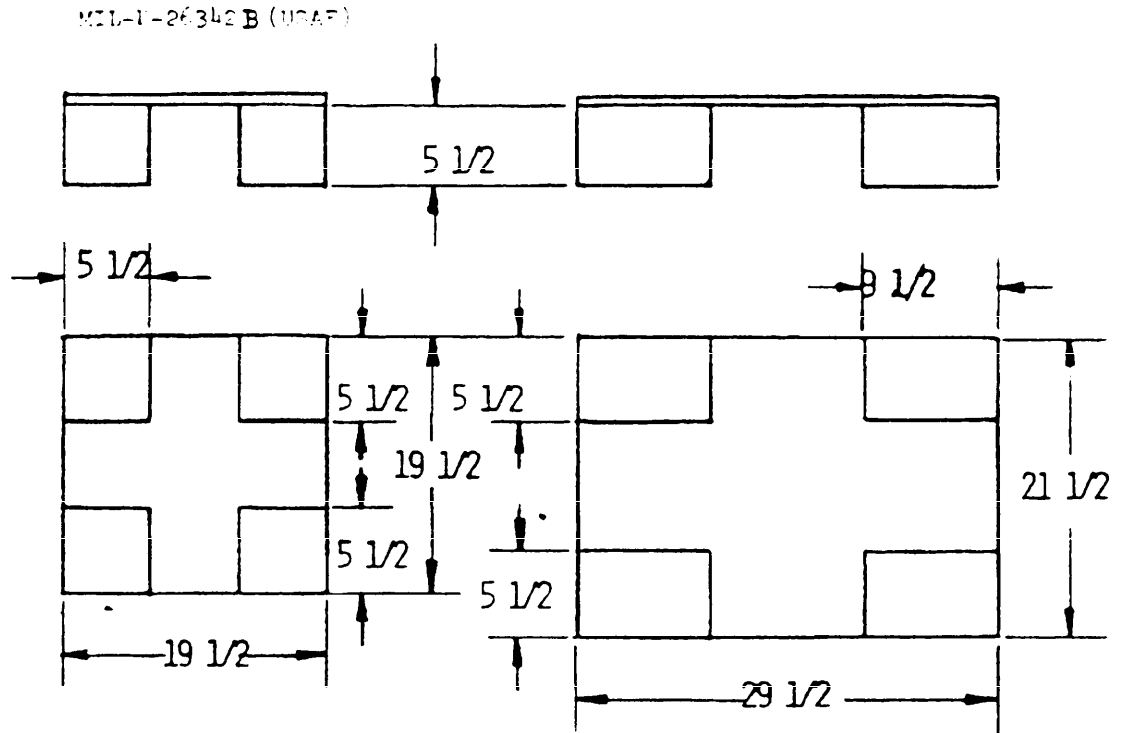
4.3.2.6 Inspection Levels and Acceptable Quality Levels (AQLs) for Examination. The inspection levels, for determining the sample size, and the acceptable quality levels (AQLs), expressed in defects per 100 units, shall be in accordance with 4.3.2.2, inspection level II, with an AQL of 6.5 defects.

4.3.3 Testing of the End Item. End items having joints secured with metal fasteners (See 3.1.2) shall be tested for clinching or opening of the fastener (See 4.4.1). The inspection level shall be S-2 with an AQL of 4.0 defects, expressed in terms of defects per hundred units.

4.4 Tests.

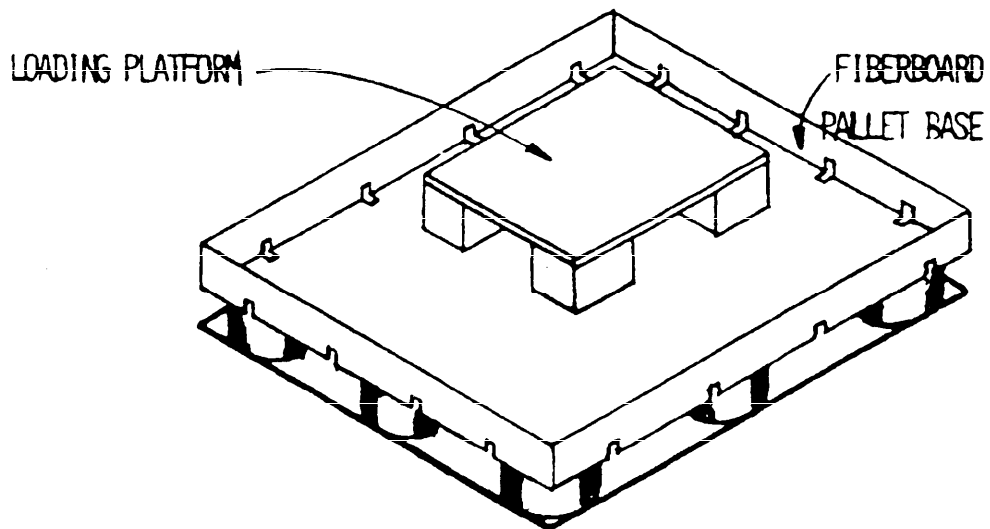
4.4.1 Clinch Test. Metal fasteners (stitches or staples) shall not pull through the fiberboard by unclenching or opening when the manufacturer's joint is ruptured by tensile loads on adjacent panels. The load may be applied manually or by any tensioning device. The load at rupture or opening of the fastener shall be not less than 100 pounds per linear inch of joint.

4.4.2 Four-Point Concentrated Load Test for Pallet Base. The pallet base, including the separate tray if employed, shall be placed on its bottom on a flat, level, concrete floor, or equivalent, and load-tested as follows: Place a loading platform on the center of the base with its length parallel with the length of the base as shown in Figure 3. The loading platform shall consist of a piece of 3/4 inch plywood with 4 wood blocks, 1 under each corner, conforming to dimensions specified on Figure 3. A concentrated load of 500 pounds for sizes A1, A2, and A3, and 800 pounds for sizes B1, B2, and B3 shall be applied for a period of ten minutes. Care should be used to apply the test load uniformly and without impact. After the test, the minimum vertical



FOR PALLET SIZES
A1, A2 & A3

FOR PALLET SIZES
B1, B2 & B3



DIMENSIONS IN INCHES

FIGURE 3

FOUR-POINT CONCENTRATED LOAD TEST FOR EXPENDABLE FIBERBOARD PALLET.

clearance for forklift entry shall measure 3-5/8 inches. The base shall not buckle or undergo permanent deformation.

4.4.3 Top Superimposed Load Test for Assembled Pallet Box. The empty (without inserts) pallet box, closed and strapped as for shipment (See 20.1) shall be placed on a flat, level, concrete floor, or equivalent, and tested in accordance with method 5016 of Federal Test Method Std. No. 101 with the exception that formula will be $W = 200 \times A \times S$.

5. PREPARATION FOR DELIVERY

5.1 Packing.

5.1.1 Level B. Pallet boxes shall be packed, knocked down, flat, in bundles. Flat steel strapping that conforms to QQ-S-781, type 1, class A or B shall be used. The minimum size of strapping shall be 3/8 by 0.015 inch. Bundles shall be bound with 2 straps over top, sides, and bottom and 2 strap over the top, ends, and bottom. Protective strips of not less than 200 pound test fiberboard shall be placed under all straps at the edges of the bundle.

5.1.2 Level C. Pallet boxes shall be packed, knocked down, flat, in bundles, tightly crosstied with twine, acceptable to common carrier, for safe transportation at the lowest rate to the point of distribution.

5.2 Markings. Bundles of pallet boxes shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. Expendable, fiberboard, pallet boxes described herein are intended for use as containers for consolidating many small items for shipment by air.

6.2 Ordering data. Procurement documents should specify the following:

- a. Title, number, and date of this specification.
- b. Class and Size (see 1.2).
- c. Whether dividing inserts are required (see 3.3.6).
- d. Place of inspection when other than place of manufacture (see 4.1).
- e. Level of packing (see section 5).
- f. Whether an interlocking top cap and tray are required (see 3.2).
- g. Whether the tray will be substituted for the top deck (see 3.3.1).

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Custodians:

Air Force - 69

Review Activities:

Air Force - 11, 70, 71, 82, 84

User:

Air Force - 82

Army - GL

Preparing Activity:

Air Force - 69

Project Nr: 8115-F269

APPENDIX

CLOSURE AND STRAPPING

10. SCOPE

10.1 This appendix covers requirements for closure and strapping of expendable, fiberboard, pallet boxes for air shipment.

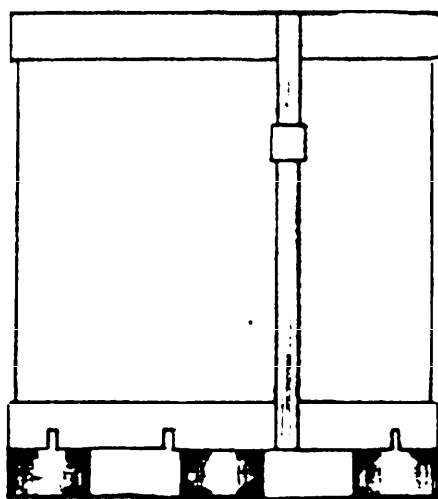
20. REQUIREMENTS

20.1 Strapping. Packed and closed fiberboard pallet boxes shall be strapped with nailless flat steel strapping with formed edges conforming to QQ-S-781. The size shall be 3/4 by 0.015 inch with a minimum tensile strength of 80,000 psi.

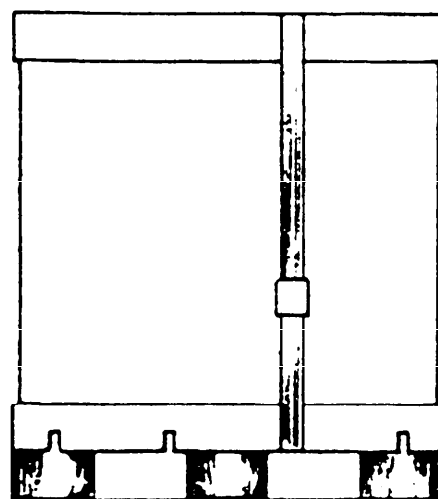
20.1.1 Location and Number of Straps. Two girthwise straps shall be applied to sizes A1, A2, and A3. They shall be perpendicular to each other on the top and bottom and shall be placed approximately 1/2 inch from each edge of the center row of posts (see Figure 4). Three girthwise straps shall be applied to sizes B1, B2, and B3. Two straps shall go around the top, sides, and bottom at the center of the forklift finger areas and one strap shall go around the top, ends, and bottom. This one strap shall be placed approximately 1/2 inch from one edge of the center row of posts (see Figure 4).

20.1.2 Application. Straps shall be applied straight and sufficiently tensioned to imbed into the edges of the pallet box, but not to the extent of cutting, tearing, or otherwise damaging the fiberboard or crushing contents. Exposed ends of strapping shall not be of a hazardous length.

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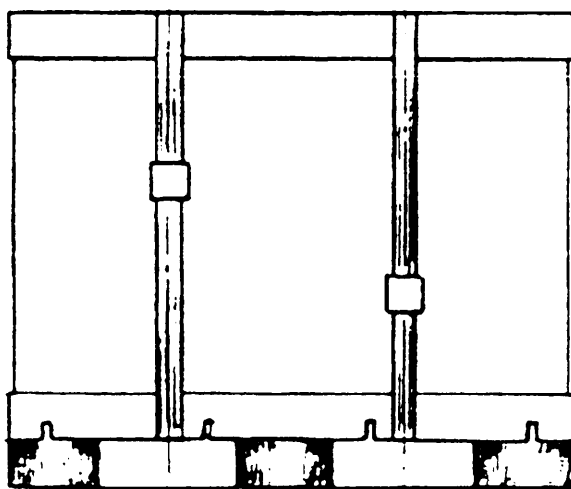


1/2 IN
LENGTH 35"

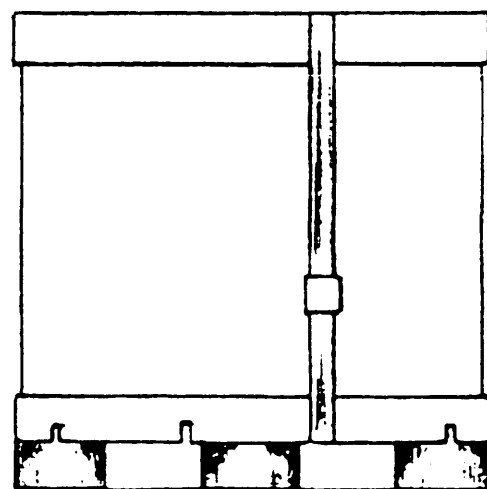


1/2 IN
WIDTH OR END 35"

PALLET SIZES A1, A2, A3



LENGTH 48"



1/2 IN
WIDTH OR END 40"

PALLET SIZES B1, B2 & B3

FIGURE 4
DETAILS OF STRAPPING PALLET BOXES.

FOLD

HQ AFIC/DSP
WPAFB, OH 45433
OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

POSTAGE AND FEES PAID
DEPARTMENT OF THE AIR FORCE
DOD-318



HQ AFIC/DSP
Bright-Huttonson, WPAFB, OH 45433

FOLD

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Appro
No 22-R25

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DOCUMENT IDENTIFIER AND TITLE

MIL-P-26342B (USAF), Pallet Box, Fiberboard, Expendable; for Air

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

 DIRECT GOVERNMENT CONTRACT SUPPLIER

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PRODUCTION USE?

A. GIVE PARAGRAPH NUMBER AND WORDING

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY DOCUMENT REQUIREMENT CONSIDERED TOO RIGID

3. IS THE DOCUMENT RESTRICTIVE?

 YES NO (If "Yes", in what way?)

4. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

TELEPHONE NO

DATE

DD FORM 1426
1 JAN 72

REPLACES EDITION OF 1 JAN 66 WHICH MAY BE USED

C 1