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FEDERAL SPECIFICATION

BOXES, FOLDING, PAPERBOARD

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope This specification covers folding boxes made of bending grades of paperboard, and folding E flute corrugated paperboard. The appendix of this specification covers the requirements for use and assembly of boxes and closures. Boxes covered by this specification are suitable for contents weighing not more than 20 pounds (see 6.1).

1.2 Classification.

1.2.1 Varieties, processes, styles, types, and classes. Boxes shall be furnished in the following varieties, processes, styles, types, and classes as specified (see 6.2). See figures 1 through 14 for representative illustrations of folding paperboard and corrugated paperboard box styles, types, and classes (see 6.3).

Variety 1 - Non-resistant paperboard
Variety 2 - Water resistant

Process I - Coated, one side, with the resistant surface on the inside
Process II - Coated both sides

Style I - Seal end (see figure 1)

Type A - Outer flaps full overlap

Class a - Inner flaps at random but not overlapping
Class b - Inner flaps meeting minus 1/16-inch tolerance

Type B - Outer flaps meeting minus 1/16-inch tolerance

Class a - Inner flaps at random but not overlapping
Class b - Inner flaps meeting

Type C - Self sealing (see figure 1A)

Class c - Single sealed ends
Class d - Double sealed ends

Style II - Tuck end (see figure 2)

Type D - Reverse tuck

Class a - Inner flaps at random
Class e - Inner flaps specified

Type E - Straight tuck

Class a - Inner flaps at random
Class e - Inner flaps specified

Style III - Brightwood blank (see figures 3 and 3A)

Type F - One piece with cover attached

Class f - No dust flaps
Class g - Dust flaps on side panels
Class h - Dust flaps on covers

Type G - Two piece

Class i - Full telescope
Class j - Partial telescope

Sub-class 1 - No turnover on sides or ends
Sub-class 2 - With or without turnover on sides or ends
Depth of lid specified (see 3.2.1.1)

Type H - One piece tray

Style IV - Overlapping end wall (without or with double side walls)
(see figure 4)

Type I - Two piece hardware lock

Class i - Full telescope
Class j - Partial telescope
Class k - One piece tray

Type J - [illegible] end

Class i - Full telescope
Class j - Partial telescope
Class k - One piece tray

Style V - Cracker style lock end (see figure 6)
Style VI - Tube and slide (see figure 5)
Style VII - One piece folders (see figure 7)
Style VIII - Diagonal folds (see figure 8)

Type F - One piece cover attached

Class f - No dust flaps
Class g - Dust flaps on side panel
Class h - Dust flaps on cover

Type G - Two piece

Class i - Full telescope
Class j - Partial telescope

Type H - One piece tray

Style IX - Double lock end top and bottom (see figure 9)
Style X - Snap lock bottom with tuck top (see figure 10)
Style XI - Automatic fold, bottom and side glued (see figure 11)
Style XII - Center support for rolls of tape (see figures 12A, 12B, and 12C)

Type K - One piece sleeve

Class l - For width of rolls up to and including 1-inch
Class m - For widths of rolls up to and including 3-inches
Class n - For widths of rolls up to and including 4-inches

Style XIII - Hinged, full depth cover with window (see figure 13)
Style XIV - Double lock-end top and bottom (see figure 14)

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:

Federal Specifications:

L-P-504	-	Plastic, Sheet and Film Cellulose Acetate.
PPP-B-601	-	Boxes, Wood, Cleated-Plywood.
PPP-B-636	-	Boxes, Shipping, Fiberboard.

Federal Standards.

FED-STD-101	-	Preservation, Packaging, and Packing Materials: Test Procedures.
FED-STD-123	-	Marking for Domestic Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers, at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specification:

MIL-B-43666	-	Boxes, Shipping, Consolidation.

Military Standards:

MIL-STD-105	-	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	-	Marking for Shipment and Storage.
MIL-STD-147	-	Palletized Unit Loads for 40" x 48" Pallets.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activityhor as directed by the contracting officer.)

Laws and Regulation

21 CFR 121 - Federal Food, Drug and Cosmetic Act and Regulations Promulgated Thereunder

(The code of Federal Regulations (CFR) and Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

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

National Motor Freight Traffic Association, Inc., Agent

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Associations, Inc., Tariff Order Section, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent

Uniform Freight Classification

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

Technical Association of the Pulp and Paper Industry (TAPPI) Standards:

T-402 - Standard Conditioning and Testing Atmosphere for Paperboard, Pulp, Handsheets, and Related Products
T-433 - Water Resistance of Paper and Paperboard (Dry-Indicator Method)
T-454 - Turpentine Test for Grease Resistant of Paper
T-474 - Bending Quality of Paperboard
T-477 - Blocking Resistance of Paper and Flexible Materials
T-483 - Odor of Packaging Material

(Application for copies should be addressed to the Technical Association of the Pulp and Paper Industry, One Dunwoody Park, Atlanta, GA 30341.)

(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.)

3. REQUIREMENTS

3.1 Materials.

3.1.1 Varieties.

3.1.1.1 Variety 1, nonresistant paperboard. Variety 1 folding paperboard boxes shall be fabricated from folding grades of paperboard specified in groups I and II, or from colored paperboard specified under 3.1.5 (see 6.2), or from bending E-flute corrugated board specified in group III. The paperboard shall conform to the minimum average requirements in table I when tested as specified in 4.4.

Group I	Group II	Group III
Bending plain chip (clean).	Double kraft or jute lined chip.	E-flute corrugated 90-98 flutes per foot.
Bending news lined chip.	Bleached manila lined chip, kraft or jute back.	Facings - not less than 26 pounds per thousand square feet.
Kraft or jute lined chip.	White patent coated lined news, kraft or jute back.	Medium - not less than 21 pounds per thousand square feet.
Bleached manila lined chip.	Unbleached solid sulphate.	
	Bleached solid sulphate.	
	Clay coated lined news. (70 minimum GE brightness).	

Groups I and II paperboards, except solid sulphate shall have a reclaimed fiber content of 80 percent of the total weight of the paper stock. A minimum of 40 percent of the total weight of the paper stock shall be reclaimed fibers from sources listed in Part I below. The balance of reclaimed fibers shall be listed in Part II below. The stated reclaimed fiber content percentages are the Government's minimum requirements (see 4.1.1).

Part I - Post-consumer wastes

(a) Paper, paperboard, and fibrous wastes from factories, retail stores, office buildings, homes, etc., after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old-newspapers, old magazines; mixed waste paper; tabulating cards, and used cordage.

(b) All paper, paperboard, and fibrous wastes that enter and are collected from municipal solid waste.

Part II - Manufacturing, forest residues and other wastes

(a) Dry paper and paperboard waste generated after completion of the papermaking process (i.e. those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste, resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill papers, and rejected unused stock.

(b) Finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(c) Fibrous by-products of harvesting, manufacturing, extractive, or wood-cutting processes, flax straw, linters, bagasse, slash, and other forest residues.

(d) Wastes generated by the conversion of goods made from fibrous material, i.e., waste rope from cordage manufacture, textile mill waste, and cuttings.

(e) Fibers recovered from waste water which otherwise would enter the waste stream.

3.1.1.1.1 Thickness of paperboard in relationship to box volume and content weight. The thickness of paperboard of groups I and II of 3.1.1.1 from which a specified box is to be fabricated shall be determined in accordance with the box volume, or content weight, whichever requires the greater thickness as specified in table I. When any one of the box dimensions is greater than the sum of the other two dimensions, the next greater thickness of paperboard shall be specified (see 6.2).

3.1.1.1.2 Boxes for packaging supporting loads (see 6.1.1.1), having a content weight of 10 pounds or less. The boxes shall be fabricated from non-test paperboard (see table I) in accordance with the greater thickness specified for the box volume or content weight in table I.

3.1.1.1.3 Boxes for packaging semisupporting loads (see 6.1.1.2) having a content of 10 pounds or less. The boxes shall be fabricated from test paperboard (see table I) in accordance with the greater thickness and minimum average bursting strength designated for the box volume or content weight in table I.

3.1.1.1.3.1 Boxes for packaging semisupporting loads (see 6.1.1.2) having a content weight of over 10 pounds to 20 pounds. Boxes having a content weight of over 10 pounds to 20 pounds shall be fabricated from E-flute corrugated board (see 3.1.1.1 and table I).

3.1.1.1.4 Boxes for packaging nonsupporting loads (see 6.1.1.2) having a content weight of 10 pounds or less. The boxes shall be fabricated from test paperboard in accordance with the greater thickness and minimum average bursting strength requirements for the box volume or content weight in table I.

3.1.1.1.4.1 Boxes for nonsupporting loads (see 6.1.1.3) having a content weight of over 10 pounds to 20 pounds shall be fabricated from E-flute corrugated paperboard (see 3.1.1.1 and table I).

TABLE I. Physical requirements of nontest and test grades of paperboard and corrugated board, relationship of box volume and container weight to thickness of nontest paperboard and to thickness and bursting strength of test paperboard and corrugated board

Nontest paperboard or corrugated board (see 3.1.1.1.2) supporting loads						Test paperboard or corrugated board (see 3.1.1.1.3 and 3.1.1.1.4)			
			Basis Weight pounds per 1000 square feet 2/			Semisupporting loads (see 6.1)		Nonsupporting loads (see 6.1)	
Volume of box	Weight of contents	Thickness 2/	Group I	Group II	Group III	Thickness 2/	Minimum bursting strength 3/	Thickness 2/	Minimum bursting strength 3/
Cubic inch	Pound	Inch 1/	Pound 1/	Pound 1/	Pound	Inch 1/	Point	Inch 1/	Point
20 or less	1/4 or less	0.012	---	56	(Facings	---	---	---	---
20 or less	1/4 or less	.014	---	63	minimum)	---	---	---	---
20 or less	1/4 or less	.016	65	69	---	0.016	48	0.018	54
20+ to 40	1/4+ to 1/2	.018	72	77	---	.018	54	.020	60
40+ to 60	1/2+ to 3/4	.020	80	82	---	.020	60	.022	66
60+ to 80	3/4+ to 1	.022	85	88	---	.022	66	.024	72
80+ to 110	1+ to 1-1/4	.024	90	96	---	.024	72	.026	91
110+ to 150	1-1/4+ to 1-1/2	.026	96	104	---	.026	78	.028	98
150+ to 200	1-1/2+ to 2	.028	103	112	---	.028	84	.030	105
200+ to 250	2+ to 2-1/2	.030	111	120	---	.030	90	.032	112
250+ to 300	2-1/2+ to 3-3/4	.032	117	128	---	.032	96	.036	144
300+ to 375	3-3/4+ to 5	.036	131	144	---	.036	108	.040	160
375+ to 500	5+ to 7-1/2	.040	144	160	---	.040	120	---	---
500+ to 750	7-1/2+ to 10	.045	160	---	---	.045	144	---	---
750+ to 2500	10+ to 20	---	---	---	52	---	125	---	125

1/ Tolerance - Basis weight ± 5 percent: thickness ± 0.001 inch thru 0.026 inch and ± 0.0015 greater than 0.026 inch.

2/ Add 11 pounds to basis weight values and 0.002 inch to thickness values when paperboard is glassine lined. Use a higher capacity instrument to obtain results in thickness greater than 0.026 inches.

3/ Also applicable to glassine lined paperboard.

3.1.1.2 Variety 2, process I boxes. Variety 2, process I boxes, fabricated as specified in 3.1.1.1.1 through 3.1.1.1.4, shall have the inner surface of the box treated, coated, or laminated with a plastic sheet, to provide the resistant feature required. Weatherproof paperboard is not required. Linings and coatings shall remain continuously bonded to the paperboard. The boxes shall be water resistant to the extent that there shall be no total discoloration of the dye after not less than 120 minutes when tested as specified in table II.

3.1.1.3 Variety 2, process II boxes. Variety 2, process II boxes shall be fabricated from chemical wood pulp conforming to the requirements of table Ia with the machine direction of the paperboard running perpendicular to the score line of the box opening. The paperboard shall be coated on both sides with polyethylene. The minimum outside coating shall be 7.3 pounds per 3000 square feet and the minimum inside coating shall be 19.5 pounds per 3000 square feet. The minimum outside polyethylene thickness shall be .0005 inch and the minimum inside polyethylene thickness shall be .00135. The body seam shall be heat sealed the full depth of the box. The width of the heat seal shall not exceed 1 inch. The body seam shall not fail when examined in accordance with 4.5.6.

TABLE Ia. Physical requirements for variety 2, process II polyethylene coated paperboard

Basis weight pounds per 1000 square feet	Thickness (inches)	Minimum stiffness (Taber Units)
105 ± 5%	.028 ± .001 (after coating)	700 (machine direction) 315 (cross machine direction)

3.1.2 Adhesives and cohesives used in the fabrication of boxes.

3.1.2.1 Variety 1 using group III (see 3.1.1.1) material for fabrication of boxes. The adhesive shall be that which is commercially used by the corrugated fiberboard box industry. The adhered areas of the box shall show no bond failure greater than 5 percent when tested as specified in 4.5.2.

3.1.2.2 Variety 1 using groups I and II (see 3.1.1.1) materials for fabrication of boxes. The adhesive shall be that which is commercially used by the folding paperboard box industry. The adhered areas of the box shall show no bond failure greater than 5 percent when tested as specified in 4.5.2.

3.1.2.3 Variety 2, process I, groups I and II water resistant boxes. When microcrystalline wax is used as an adhesive to effect the water resistance requirement, the wax shall have a melting point of not less than 150°F. when tested as specified in 4.5.1. There shall be no delamination of the paper from the paperboard when tested as specified in 4.5.1. The adhesive used in the fabrication of water resistant boxes shall be water resistant to the extent that there shall be not more than 5 percent failure of the bonded area when tested as specified in 4.5.3.

3.1.2.4 Cohesive applicable to style I, type C, variety I self-sealing boxes (see figure 1A). When specified (see 6.2), cohesive shall be applied to the box blank in accordance with the application designated in figure 1A. The cohesive flap area shall create a bond between the applicable flap areas immediately upon contact of the areas during the box forming operation. The cohesive shall be applied so that the cohesive areas of one blank do not contact cohesive areas of an adjacent blank when properly stacked for packing. Cohesive areas shall not adhere to uncoated areas of a box blank. The cohesive area on the shorter flaps shall extend from edge to edge of the flap widthwise, and from the score line to within approximately 1/8-inch of the outer edge lengthwise. The cohesive area on the longer flaps shall extend from edge to edge of the flap widthwise, and from the outer edge of the flap to the dimensions for the applicable width of the cohesive band lengthwise. The cohered joints of the box shall be moisture resistant to the extent that there shall be no more than 5 percent area failure of the joint when tested as specified in 4.5.2.

3.1.3 Bending quality. Paperboard 0.026 inch thick and less shall show no visual surface ruptures along the crease line, and paperboard thicker than 0.026 inch and E-flute corrugated board shall show no visual continuous surface rupture greater than 1/4 inch in length when tested as specified in table II.

3.1.4 Food packaging. When boxes, in accordance with this specification, are used for the packaging of food products, the materials used shall conform with the Federal Food, Drug, and Cosmetic Act and Regulations Promulgated Thereunder (see 6.2).

3.1.4.1 Odor. The paperboard and its components used in the fabrication of boxes shall be free of foreign odor when tested as specified in 4.5.7.

3.1.5 Color of paperboard boxes.

3.1.5.1 Military requirements. The color of paperboard for fabrication of boxes, except for variety 1, group III shall be a dull, nonreflecting khaki, dark gray, or olive color lined one or two sides as specified (see 6.2).

Unless otherwise specified (see 6.2), the color of variety 1, group III shall be natural kraft. The coloring shall be accomplished in the stock preparation operation. Alternatively, for variety 2, process II boxes, the coloring may be printed over the plastic coating. The shade of color shall be a commercial match of the sample submitted with the contract or order.

3.1.5.2 Civil agencies. The color of paperboard used for the fabrication of boxes for civil agencies shall be the natural shade of the grade of paperboard used in the fabrication of the boxes.

3.1.6 Blocking resistance, variety 2, process I. Paperboard used for variety 2, process I boxes shall show no tendency to block in not less than 1 hour under conditions of 120°F. and 75 percent relative humidity when tested as specified in 4.5.7.

3.1.7 Curl. Paperboard from which all varieties of folding boxes, except variety 1, group III, are fabricated, shall be flat to the extent that there shall be no edge greater than 1/8-inch when tested as specified in 4.5.4.

3.2 Construction.

3.2.1 Box dimensions. Dimensions of folding boxes shall be in accordance with the volume of material to be packaged therein. When dimensions are specified (see 6.2) they shall be the inside measurements of the box in the sequence of length, width, and depth ± 1/16-inch tolerance.

3.2.1.1 Lid dimensions. Lids applicable to two piece boxes shall be the depth specified (see 6.2) ± 1/16-inch tolerance, except that the lids for style III, type G, class j sub-class 2 (see figure 3A) shall be 1 ± 1/16-inch deep unless otherwise specified (see 6.2). The length and width of the lid shall be based on the box manufacturer's dimensions, in accordance with the thickness of paperboard being used for box fabrication. The fit of the lid to the box shall be snug without destructive binding.

3.2.1.2 One piece cover attached box. For a one-piece box with attached cover, the length of the tuck and dust flaps shall be as specified (see 6.2). The cover shall be hinged along the length dimension of the box. When specified (see 6.2), the hinged cover shall be perforated along the dimension of the hinged score line.

3.2.1.3 Tuck end boxes. The length of the tuck for a tuck end style box shall be as specified (see 6.2). The tucks shall be either reverse or straight tucks as specified (see 1.2 and 6.2) and may be modified with notched tucks, pye locks, split locks, locked inner flaps, tongue and tuck, or combination of these on top or bottom as illustrated in figure 2.

3.2.1.4 Locks. Notched tucks, tear slots, pye locks, et cetera, shall be dimensioned at the option of the boxmaker to effect the most economical utilization of board

3.2.1.5 Outer flaps. For styles I, IX, X, and XI, the outer flaps shall be along the lengthwise edges of the box. For style I, type A, the length of the outer flaps shall be the same as the width of the box, and shall not project beyond the end of the box when set up. For style I, type B, the outer flaps shall meet when closed, plus zero or minus 1/16-inch.

3.2.1.6 Inner flaps. For style I, type A, the length of the inner flaps at random shall be at the option of the boxmaker, but shall not overlap. For style I, type B, the inner flaps shall be the same length as the outer flaps. For style II, type D or E, the inner flaps for class a shall be at random at the option of the boxmaker, and for class e shall be the length as specified (see 6.2).

3.2.1.7 Seal end, self-sealing boxes (style I, type C). This box shall be in accordance with figure 1A.

3.2.1.7.1 Class c, single sealed end box. The length of the longer outer flap shall be the same dimension as the width of the box. The length of the shorter flap and both inner flaps shall be 1/2 the length of the longer outer flap $\pm$ 1/16-inch.

3.2.1.7.2 Class d, double sealed end box. The length of the longer inner and longer outer flaps shall be the same dimension as the width of the box. The length of the shorter inner and shorter outer flap shall be 1/2 the length of the longer flaps $\pm$ 1/16-inch.

3.2.1.8 Style XIII boxes (see figure 13). Style XIII boxes shall be provided with a window fabricated from cellulose acetate conforming to type I, 100 gauge of L-P-504. The window shall be of one piece construction located in the hinged cover and one side. A 1 $\pm$ 1/4 inch border shall be provided between the window and the outer edges of the hinged cover and side. The box shall be one piece folder with full depth outside cover, unfolded construction for automatic or manual set-up. A locking element shall be provided within the side opposite the hinge. Boxes shall be hinged along and open on the long dimension.

3.2.1.9 Style XIV (see figure 14). Style XIV boxes shall be provided with 1 $\pm$ 1/16-inch tucks and dust flaps on cover. The boxes shall be double lock end blank opening on the long dimension. The cover shall fit snugly without destructive binding.

3.2.2 Creasing and cutting. Creasing shall be uniform, and the crease shall be of the depth and width conforming to the thickness of the paperboard being scored in accordance with commercial practice. Edges shall be clean cut.

3.2.2.1 Diagonal fold and automatic fold boxes. For diagonal fold style boxes, scoring of the folding lines will be permitted when the thickness of the board is 0.028 inch or greater.

3.2.2.2 Flap offset creases for style I boxes. In order to reduce sifting, when style I boxes are to be used for powdered or granular material (see 6.2), the score lines of the inner flaps shall be offset below the score lines of the outer flaps at a distance equal to the thickness of the paperboard being used.

3.2.3 Thumb notches. When specified, styles II, III, VIII, and XI boxes shall be made with thumb notches (see 6.2).

3.3 Printing. Printing, when required, shall be as specified (see 6.2).

3.4 Workmanship. Folding boxes shall be free from dirt, tears, scabs, blows, and, as applicable, unsecured cover paper, and shall conform to the quality provisions and requirements of this specification.

3.5 Appendix. When this specification is referenced in documents for the packaging of an item or items, the requirements of the appendix of this specification shall be mandatory.

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.

4.1.1 Certification The contractor shall certify in writing to the contracting officer or his authorized representative that the material offered to the Government contains the minimum percentage of recycled fibres specified in 3.1.1.

4.2 Inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.2 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 Inspection of the end item.

4.3.1 Examination of the end item. The end item shall be examined for defects as set forth in the applicable paragraphs at the inspection levels and acceptable quality levels (AQL's) in 4.3.1.5. A random sample shall be drawn from each lot of material for each variety, style, type, class, and thickness for examination of visual and dimensional characteristics. The lot size for purposes of determining the sample size in accordance with MIL-STD-105 shall be expressed in units of boxes for examination under 4.3.1.1 through 4.3.1.3, and in units of shipping containers or bundles for examination under 4.3.1.4.

4.3.1.1 Examination for defects in appearance and workmanship. The sample unit shall be one box and lid or tray as applicable. No more than one sample unit shall be selected from any one container or bundle. The inside and outside of the box and lid shall be examined.

Examine	Defect
Appearance	Variety, style, type, or class not as specified (see 1.2.1 and figures 1 through 14). Not color specified for groups I and II boxes (see 3.1.5.1 and 3.1.5.2). Variety 1, group III board not E-flute corrugated board (see 3.1.1.1). Style XIII box window not cellulose acetate, not properly located, locking devices missing, not hinged on long dimension (see 3.2.1.8). Style XIV boxes, tucks or dust flaps missing, openings not on long dimension, cover fit not as specified (see 3.2.1.9). Thumb notches missing as applicable (see 3.2.3).
Workmanship	Tears, scuffs, distortion, scabs, blows, score lines ragged, broken. Edges not clean cut. Surfaces not clean. Flaps project beyond edge of box, creasing not uniform. Lid, as applicable, not snug fit. Cohesive not applied as specified (see 3.1.2.4). Color not one side or two sides, as applicable (see 3.1.5.1).

4.3.1.2 Examination for dimensional defects. The sample unit shall be one box, box and lid, or one tray as applicable.

Examine	Defect
Box and lid	Thickness of groups I and II paperboard not as specified in table I. For styles I, IX, X, and XI, outer flaps project beyond edge of box (see 3.2.1.5). Inner flaps overlap, not same length as outer flaps, as applicable (see 3.2.1.6). Class c single sealed end box and class d double sealed end box, longer outer flap not the same dimension of the width of box, shorter flaps not 1/2 the length of longer flaps. Style XIV boxes, tuck and dust flaps not 1 ± 1/16-inch in length (see 3.2.1.9). Not within specified tolerance, when applicable (see 3.2.1 and 6.2).

4.3.1.3 Examination for defects in construction. The sample unit shall be one box and lid or tray as applicable.

Examine	Defect
Box and lid or tray	Thumb notches missing, when applicable (see 3.2.3). Printing not as specified, when required (see 3.3). Liners not securely laminated, as applicable (see 3.1.2.3). Inside box surfaces not resistant surface, as applicable (see 3.1.1.2). Inside and outside surfaces not resistant surface as applicable (see 3.1.1.2).

4.3.1.4 Examination of preparation for delivery. The sample unit shall be one shipping container selected just prior to the closing operation. Closed shipping containers shall be examined for closure defects.

Examine	Defect
Packing (as applicable)	Unlike boxes packed together in same shipping container (see 5.2). Contents do not fit snugly in shipping containers (see 5.1.1). Weight of contents greater than 65 pounds (see 5.2.1.1).
Marking	Omitted, incomplete, incorrect, illegible, or not in accordance with specification (see 5.4).

4.3.1.5 Inspection levels and AQL's for examination. Inspection levels for determining sample size and AQLs expressed in defects per hundred units, shall be as follows:

Examination paragraph 1/	Inspection levels	AQLs
4.3.1.1	S-3	2.5
4.3.1.2	S-2	2.5
4.3.1.3	S-2	2.5
4.3.1.4	S-1	4.0

1/ The same sample units shall be used for examination under 4.3.1.2 and 4.3.1.3 and shall be those randomly selected under 4.3.1.1.

4.3.1.6 Examination of shipping containers. When shipping containers or unitized containers are required to be in accordance with PPP-B-601 or PPP-B-636, examination for construction, closure, and reinforcement shall be in accordance with the applicable specifications, except that inspection levels shall be as specified for 4.3.1.4.

4.3.1.7 Examination of palletization. An examination shall be made to determine that palletization is in compliance with 5.3. Defects shall be scored as specified below. The sample unit for this examination shall be one palletized unit load ready for shipment. The lot shall be the number of palletized loads ready for shipment. The inspection level shall be S-1 with an AQL of 6.5 expressed in terms of defects per hundred units.

Examine	Defect
Finished dimension	Length, width, or height exceeds maximum requirements.
Palletization	Not as specified. Pallet pattern not as specified. Interlocking of loads not as specified. Loads not bonded with required straps as specified.
Weight	Exceeds maximum load limit.

4.4 Testing of the end item. The end item shall be tested for the applicable characteristics as indicated in table II, from each lot presented for examination of each variety, style, type, and class of box. The sample unit shall be one complete box. Five sample units shall be selected from each lot. The lot shall be rejected if the lot average of one or more unit requirements fail to meet requirements, as applicable. Prior to testing, except for submerging for glue joint water resistant tests, and body seam heat-seal test, the specimens shall be conditioned according to TAPPI Method T-402.

TABLE II. Component end item testing instructions

Characteristics	Requirement paragraph	Test method or ref. para.	Requirements applicable to: Lot avg.	Requirements applicable to: Unit req.	Results reported numerically to nearest 1/
Basis weight 2/	3.1.1.1	5022*	X		Pounds per 1000 square feet
Thickness 2/ 3/	3.1.1.1	1003*	X		0.0001 inch
Bursting strength	3.1.1.1	2007*	X		Point
Water resistant paperboard	3.1.1.2	T-433**	X		Minute
Melting point of wax	3.1.2.3	4.5.1***	X	X	
Moisture resistance of box glue joint					
Commercial glue joint	3.1.2	4.5.2***		X	1 percent
Waterproof glue joint	3.1.2	4.5.3***		X	1 percent
Cohesive glue joint	3.1.2	4.5.2***		X	1 percent
Bending quality	3.1.3	4.5.5***		X	1/16 inch
Blocking resistant	3.1.6	223*		X	Degree
Curl 2/	3.1.7	4.5.4***		X	1/32 inch
Body seam heat seal	3.1.1.3	4.5.6		Y	Pass or fail

1/ Report all values upon which results are based.

2/ To the extent possible, specimens shall be taken from one box When not practical due to box size, specimens shall be taken from paperboard components.

3/ This test not applicable for corrugated board.

* Denotes test methods of FED-STD-101.
** Denotes test methods of TAPPI.
*** Denotes test methods of section 4 of this specification

4.5 Tests.

4 5.1 Melting point test of wax adhesive (see 3.1.2.3). The test specimen shall be not less than 3 by 3-inches square. Place the specimen in a constant

temperature oven at 145° ± 3°F. tolerance for a period of not less than 120 minutes. During the heating cycle, the specimen shall rest on a place with the laminated side of the specimen facing up and free from contact with any other surface. After 120 minutes remove the specimen from the oven and visually examine for any delamination of the lining paper from the paperboard.

4.5.2 Moisture resistance of commercial adhesive (see 3.1.2) and cohesives (see 3.1.2.4) used in the construction of variety 1 paperboard boxes. The fabricated box shall be placed in storage for not less than 72 hours at 90 percent relative humidity and 100°F. Adhesive joints shall be visually examined for adhesive failure. Report the area percentage of delamination.

4.5.3 Water resistance of waterproof adhesive used in the construction of variety 2, process I paperboard boxes (see 3.1.2.3). The test specimen shall be one complete corner glue flap of the end item. Totally submerge the specimen in distilled water at room temperature for a period of not less than 120 minutes. After the soaking period, remove the specimen from the water bath and blot well to remove excessive water. With the thumb gently flex the edge of the sample to determine glue joint delamination. Examine the specimen for any delamination of the glue area. Report the percentage of the delaminated area in proportion to the total bonded area.

4.5.4 Curl test (see 3.1.7). The test specimen shall be not less than 6- x 6-inches. The specimen shall contain no creases. After conditioning to equilibrium under standard conditions, the specimen shall be laid on a flat, smooth, dry surface. Measure the highest distance from the surface of the plane to the underside of the specimen to the nearest 1/32-inch.

4.5.5 Bending quality test (see 3.1.3). The test specimen shall be unprinted, rectangular or square sheets at least 2-1/8 inches wide and long, and cut in the principal directions of the paperboard. At least two specimens shall be tested. They shall be conditioned according to TAPPI Standard T-402 m. Under pressure of the fingers, bend and crease a corner of the specimen flat at an angle of 45° to the machine or cross direction, so that the crease is 3 ± 1/8 inches long. Bend and crease the specimen once so that the inside surfaces are in contact, and then bend and crease the specimen once in the same fold with the outside surfaces in contact. (The inside surface refers to the side that would normally face the inside of a carton made of the paperboard). Observe the crease line for conformance with the requirements of 3.1.3.

4.5.6 Body seam heat seal test (see 3.1.1.3). The body seam shall be examined for heat seal separation at point of contact by placing the paperboard box in a cold box with a temperature of minus 20°F. ± 2°F. for a minimum of 2 hours.

4.5.7 Paperboard tests. Paperboard shall be tested in accordance with the following methods of the TAPPI·

T-402 - Standard Conditioning and Testing Atmosphere for Paper, Board, Pulp, Handsheets, and Related Products.
T-443 - Water Resistance of Paper and Paperboard (Dry-Indicator Method).
T-454 - Turpentine Test for Grease Resistance of Paper.
T-474 - Bending Quality of Paperboard.
T-477 - Blocking Resistance of Paper and Flexible Materials.
T-483 - Odor of Packaging Material.

5. PREPARATION FOR DELIVERY

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

5.1.1 Level A. Folding boxes of like description, shall be packaged in a close-fitting box conforming to grade W5c of PPP-B-636. Each box shall be closed in accordance with method IV and waterproofed in accordance with method V as specified in the appendix of PPP-B-636. The quantity per package shall be in accordance with the manufacturer's commercial practice, except that the maximum weight of the box and contents shall not exceed 65 pounds.

5.1.2 Level B. Folding boxes of like description, shall be packaged as specified in 5.1.1, except that grade 200 corrugated boxes shall be used. The boxes shall not be waterproofed and closure shall be in accordance with method I of PPP-B-636.

5.1.3 Level C (commercial packaging). Folding boxes shall be packaged to afford adequate protection against physical damage during shipment from the supplier to the first receiving activity. The package and the quantity per package shall be in accordance with the manufacturer's commercial practice.

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

5.2.1 Level A. Unless otherwise specified (see 5.2.1.1), folding boxes, of like description, packaged as specified in 5.1.1 or 5.1.2, shall be packed in a close-fitting shipping container conforming to overseas type, style I or J of PPP-B-601. The shipping container shall be closed and strapped in accordance with the appendix of the box specification. The weight limitation of the container specification shall not be exceeded. When specified (see 6.2), packages of different description may be packed together.

5.2.1.1 When specified (see 6.2), folding boxes of like description shall be packed in a close-fitting fiberboard box conforming to style RSC, grade V2s of PPP-B-636. The weight of contents shall not exceed 65 pounds.

5.2.2 Level B. Unless otherwise specified (see 5.2.2.1), folding boxes packaged as specified in 5.1.1 shall require no additional packing.

5.2.2.1 When specified (see 6.2), two hundred and fifty folding boxes or other quantity as specified (see 6.2), of like description shall be packed in a close-fitting fiberboard shipping container conforming to style RSC, type CF (variety SW) or SF, class domestic, grade 275 of PPP-B-636. The shipping container shall be closed in accordance with method I of PPP-B-636.

5.2.3 Level C (commercial pack). Folding boxes shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. Containers shall be in accordance with Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.

5.3 Unitization. When specified (see 6.2), level A or B packs shall be unitized by palletizing or consolidation. Palletization shall be in accordance with MIL-STD-147 and consolidation shall be in containers conforming to any style or class, as applicable of PPP-B-601, or MIL-B-43666.

5.4 Marking.

5.4.1 Civil agencies. In addition to markings required by the contract or order, the shipping container shall be marked in accordance with FED-STD-123.

5.4.2 Military requirements. In addition to markings required by the contract or order, the shipping container shall be marked in accordance with MIL-STD-129.

5.4.3 Nomenclature. The nomenclature on each package shall be as follows:

BOX FOLDING PAPERBOARD

Variety	Style	Type
Class	Length	Width
Depth	Group	

6. NOTES

6.1 Intended use. Folding boxes are generally used for unit and intermediate packaging. This specification limits content weight to 20 pounds (see table I). Boxes covered by this specification can be used for heavier weights when, in the opinion of the procuring activity, the box will be adequate. Resistant variety boxes are intended for use in packaging items such as bakery goods, for retaining the moisture content of the item packaged, or to prevent grease from penetrating through the paperboard. Resistant variety boxes are not intended to be weatherproof.

6.1.1 Types of loads.

6.1.1.1 Supporting loads (see 3.1.1.1.2). A supporting load is a rigid item that extends along one full dimension of the box, or rectangular intermediate packages that fill the box, such as candles, rectangular soap bars, books, and small rectangular packages.

6.1.1.2 Semisupporting loads (see 3.1.1.1.3). Semisupporting loads are items whose surface is partially in contact with the inner surface of the box, such as cans, bottles, and small arms ammunition.

6.1.1.3 Nonsupporting loads. A nonsupporting load is powdered or granular materials, and dense small items, such as bearings, nuts, and bolts (see 3.1.1.1.4).

6.1.2 Specific uses listed by styles.

6.1.2.1 Style I, seal end (see figures 1 and 1A). This style is suitable for granulated or powdered products. Tear slots shown on the illustration of the blank, are used to prevent seepage of wax into box if filled packages are wax dipped.

Type A, class b, helps keep the adhesive applied to the outer flaps away from the contents.
Type B, class a or b, is used for larger boxes.
Type C, class c or d, is used for small production or where automatic set-up gluing machinery is not available.
Type G, class 3. Partial telescope
Subclass 1. Has no turnover on sides or ends, base end flanges are at random, depth of cover is as specified (see 6.2). This subclass 1 box is used for economy
Subclass 2. This partial telescope box is generally used for packaging shoes. The base end flanges are designed so that when formed it has reinforced sides and ends.
Type H, one piece tray. Trays may be used when the closure is made with film or overwrap.

6.1.2.2 Style II, tuck end (see figures 3 and 3A). Type A, one piece with cover attached. This style may be delivered as flat blanks and glued at the place of use.

6.1.2.3 Style III, Brightwood blanks (see figures 3 and 3A). Type A, one piece with cover attached. This style may be delivered as flat blanks and glued at the place of use.

6.1.2.4 Style IV, overlapping end wall (see figure 6). There are numerous variations of overlapping end wall boxes, utilizing various locking devices, which are useful when a broadside opening is required for filling and automatic assembly equipment is not available. Most of these styles are formed by hand. The overlapping end wall provides considerable rigidity. Additional strength may be obtained by using double side walls. The different types and classes have a similar use to those described for Brightwood blanks and diagonal folds (styles III and VIII). The double end or side walls give a more rigid box for heavy or large articles and are commonly used for heavy parts and textiles.

6.1.2.5 Style V, cracker style lock-end (see figure 6). This is an economical style always delivered to the packer in a flat form and usually set up by machinery. For food products, it is invariably used with an inner liner which may be interfolded with the structure when the box is set up. It is widely used for packaging lard and similar products, frozen foods, crackers, cookies, and other bakery products.

6.1.2.6 Style VI, tube and slide (see figure 5). The tube is usually open at both ends but may be made in the form of a reverse tuck box. The slide may be constructed in many forms, a folded liner or glued or lock-end tray being the more usual. Used especially for packing small items in a flat package as they may be readily packed in the open tray before inserting endwise in the tube. Suited for cigarettes, pencils, and pharmaceutical items such as pills, vials, et cetera.

6.1.2.7 Style VII, one piece folders (see figure 7). One piece folders are a die-cut scored sheet which may have accessory locking devices. These are suited for shallow packages such as books, pamphlets, handkerchiefs, gloves, et cetera, or are often used as interior packages to protect fragile or machined parts such as pulleys, gears, et cetera. They are widely used for parcel post mailing purposes. Boxes can be assembled around item to be packaged and sealed by means of tape or locks.

6.1.2.8 Style VIII, diagonal folds (see figure 8). This style is glued by the manufacturer and is shipped in a collapsed form. These styles are best suited for products which completely fill and support the box, such as stationery or cigarettes. The location and shape of the glue flaps and the location of the diagonal scores shall be left to the discretion of the box manufacturer.

6.1.2.9 Style IX, double lock end top bottom (see figure 9). This style is often used when contents of package fill it solidly, making insertion of tucks difficult.

6.1.2.10 Style X, snap lock bottom with tuck top (see figure 10). The snap lock bottom can be used in many combinations, such as with a tuck top or a seal end top.

6.1.2.11 Style XI, automatic fold, bottom and side glued. This style is an automatic fold box, with glued bottom and side, which will require no further gluing prior to use, and is delivered in a collapsed form.

6.1.2.12 Style XII (class l, m, and n, sleeve style boxes, with center support) (see figure 12). These boxes are designed for the packaging of rolls or tape. The box has a center lock that fits in the core opening of the roll of tape which secures the tape in position in the box or sleeve.

6.1.2.13 Styles XIII and XIV. These boxes are generally used in packaging fruit, produce, bakery, or confectionary products, and are generally fabricated from bleached solid sulphate paperboard.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the applicable information in procurement documents:

(a) Title, number, and date of this specification.
(b) Quantity of boxes.
(c) Variety, process, style, type, and class, as applicable (see 1.2.1) and group (see 3.1.1.1).
(d) Style II, type E, class e - length of inner flaps (see 1.2.1 and 3.2.1.6).
(e) Style III, type G, class j, subclass 2. Length of base end flaps and depth of lid (see 1.2.1 and 3.2.1.1).
(f) Grade of paperboard from which boxes are to be fabricated (see 3.1.1.1).
(g) Thickness, basis weight and, when applicable, bursting strength (see 3.1.1.1 and 3.1.1.1.1).
(h) When precoated cohesion is required, style I, type C, class c or d (see 3.1.2.4).
(i) When boxes are to be used for packaging food (see 3.1.4).
(j) Color of paperboard (military requirements) (see 3.1.5.1).
(k) Dimensions of box (see 3.2.1).
(l) Depth of lid, as applicable (see 3.2.1.1).
(m) Length of the cover tuck and dust flaps for one piece cover attached box and when hinge score line is perforated (see 3.2.1.2).
(n) Length of tuck for tuck-end style boxes (see 3.2.1.3 and figure 2).
(o) When style 1 boxes are to be used to package powdered or granular material (see 3.2.2.2).
(p) When thumb notches are required (see 3.2.3).
(q) Printing, when required (see 3.3).
(r) Selection of applicable level of packaging and packing (see 5.1 and 5.2).
(s) When boxes of different description may be packed together (see 5.2.1).

(t) When weather resistant fiberboard should be used for level A packs (see 5.2.1.1).
(u) When domestic fiberboard should be used for level B packs (see 5.2.2.1).
(v) When unitization and type unitization is required (see 5.3).
(w) Treatment of board for wax dipping or impregnating if box is to be processed (see 6.3).

6.3 Specially treated boxboard. Folding boxes which, after filling and closing, are to be treated with a single or double wax dip to obtain a water or moisture-vapor-resistant barrier must be manufactured from special processed boxboard. It is important to indicate such special treatment of the finished box so that the boxboard manufacturer may supply the proper grade of paperboard. Single wax dip or coating is normally used to obtain a moisture-vapor-resistant barrier. For this purpose a surface wax film is required and necessitates proper sizing of the boxboard to prevent wax impregnation. Double wax dip is normally used to obtain both water and moisture-vapor-resistant barriers. For this purpose, the boxboard must be sized and of the proper density to allow wax impregnation of the fibers on the first dip and application of a surface wax film on the second dip.

6.4 Storage. Avoid storage in damp or excessively dry places.

6.5 Classification deletion. Varieties 3 and 4 in PPP-B-566D have been deleted in this revision since items are no longer required.

Custodians:

Army - GL
Navy - AS
Air Force - 69

Review activities:

Army - EA, MD, ME, SM, EL, WC, WV
Navy - SA, SH
Air Force - 70, 80, 82, 84

User activities:

Army - MU
Navy - MC
Air Force - 71

Preparing activity:

Army - GL

Civil Agency Coordinating Activities.

COM-NBS
DC-DCG
GSA-FSS
JUS-FPI

Project No. 8115-0314

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein. Price 65 cents each.

APPENDIX

10. SCOPE AND USE

10.1 Scope. This appendix covers the use and assembly of folding paperboard boxes and requirements of closure and inspection of closure of filled boxes.

10.2 Use. Only those articles which are not easily susceptible to damage which might be caused by ordinary distortion of the box, resulting from external forces during shipment, should be packed in folding paperboard boxes. The manner in which a commodity is packaged governs to a great extent its condition on arrival at destination. Therefore, the selection of the proper style and strength of the box should be carefully considered to protect the commodity against the hazards of handling and transportation.

10.2.1 As these boxes are not weatherproof, they must be satisfactorily protected by suitable means for overseas shipments.

20. APPLICABLE DOCUMENTS

20.1 The following document, of the issue in effect on date of invitation for bids, form a part of this appendix to the extent specified herein:

Federal Specification:

PPP-T-76 - Tape, Pressure-Sensitive Adhesive Paper (For Carton Sealing).

30. SETUP PROCEDURE

30.1 Setup and filling. Folding boxes may be set up, filled, and sealed by automatic machinery or by hand.

40. REQUIREMENTS FOR CLOSURES

40.1 Closures. Unless otherwise specified, the type of closure shall be indicated by the style of the box. Locks provided for box closures shall be carefully and securely assembled. When specified, telescoping styles shall be closed by means of tape, meeting the requirements of PPP-T-76. When style I boxes are used for powder or granular material the closure shall be creased and offset as specified in 3.2.2.2.

40.1.1 Sealing tape. The tape shall be used not only to seal the box but give strength to it, as for example to strengthen creases which could be broken through by the force of the article from within. The amount of tape used and its application is dependent upon the nature of the contents. Under some conditions, it will be sufficient to apply a small piece of tape which overlaps the closure

[illegible] to tapes where the contents are heavy, it will be necessary to run the tape entirely around the container. The tape shall be applied in such a manner as to seal the closure most advantageously.

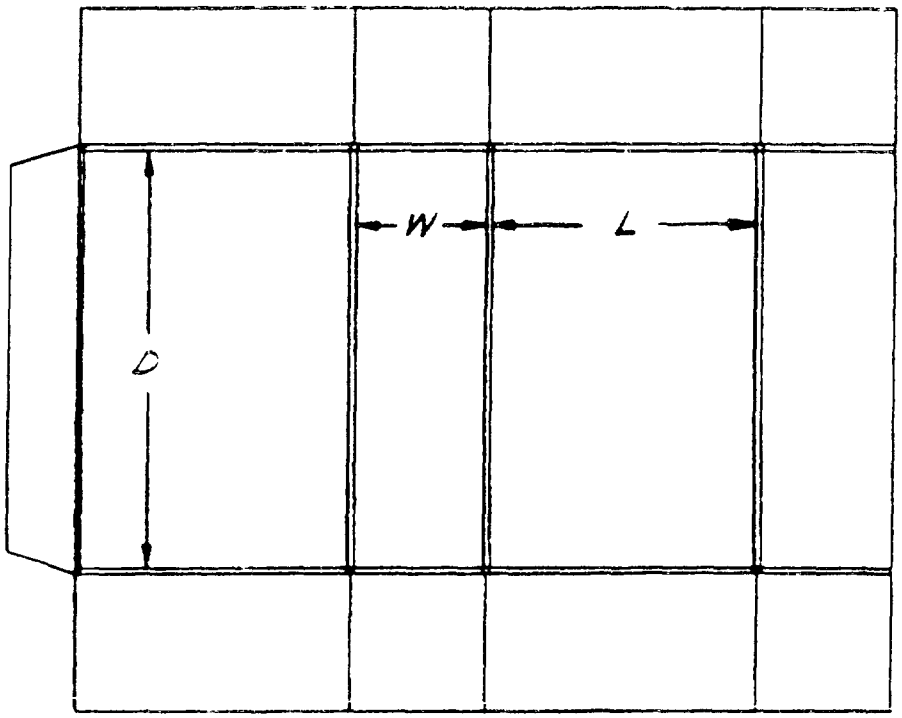
50. INSPECTION PROCEDURES

50.1 Inspection. Boxes shall be examined to determine compliance with the requirements of this appendix. Sampling shall be conducted in accordance with the provisions of MIL-STD-105.

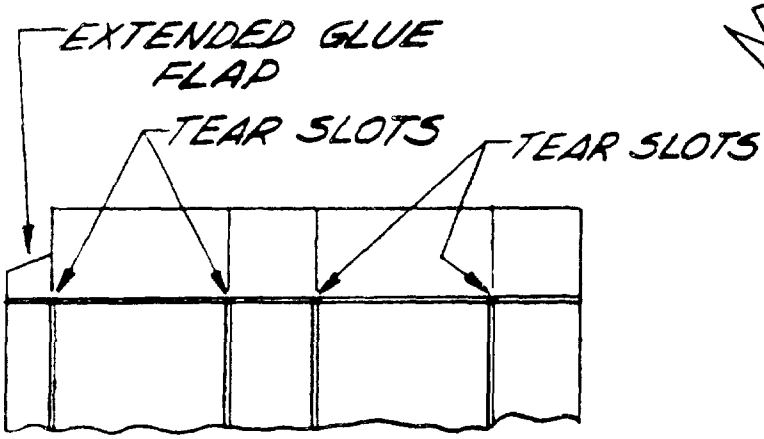
50.1.1 Inspection for closure. Boxes shall be examined for closure in accordance with the defects set forth below. The sample unit shall be one box with setup and closure completed. The lot size shall be expressed in terms of boxes. The inspection level shall be S-3 with an applicable quality level (AQL) of 6.5 defects per 100 units.

Examine	Defects
Set-up	Any damage impairing serviceability.
Closure	Underclosure - Failure to fully engage tucks or flaps so that inadvertent opening easily occurs. Overclosure - Bending or creasing of box with reduced holding ability. Insufficient time and pressure applied to cohesive, adhesive, or tape closures to secure maximum closing and holding power. Adhesive smeared in places other than at closure. Insufficient tape, incorrect tape placement, when tape is required or used. Tape torn, curling, or loose on container.

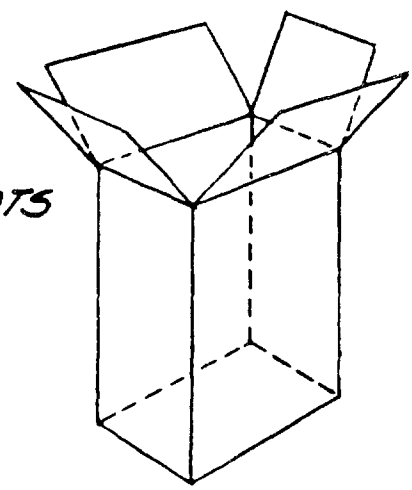
THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX



TYPE A CLASS a



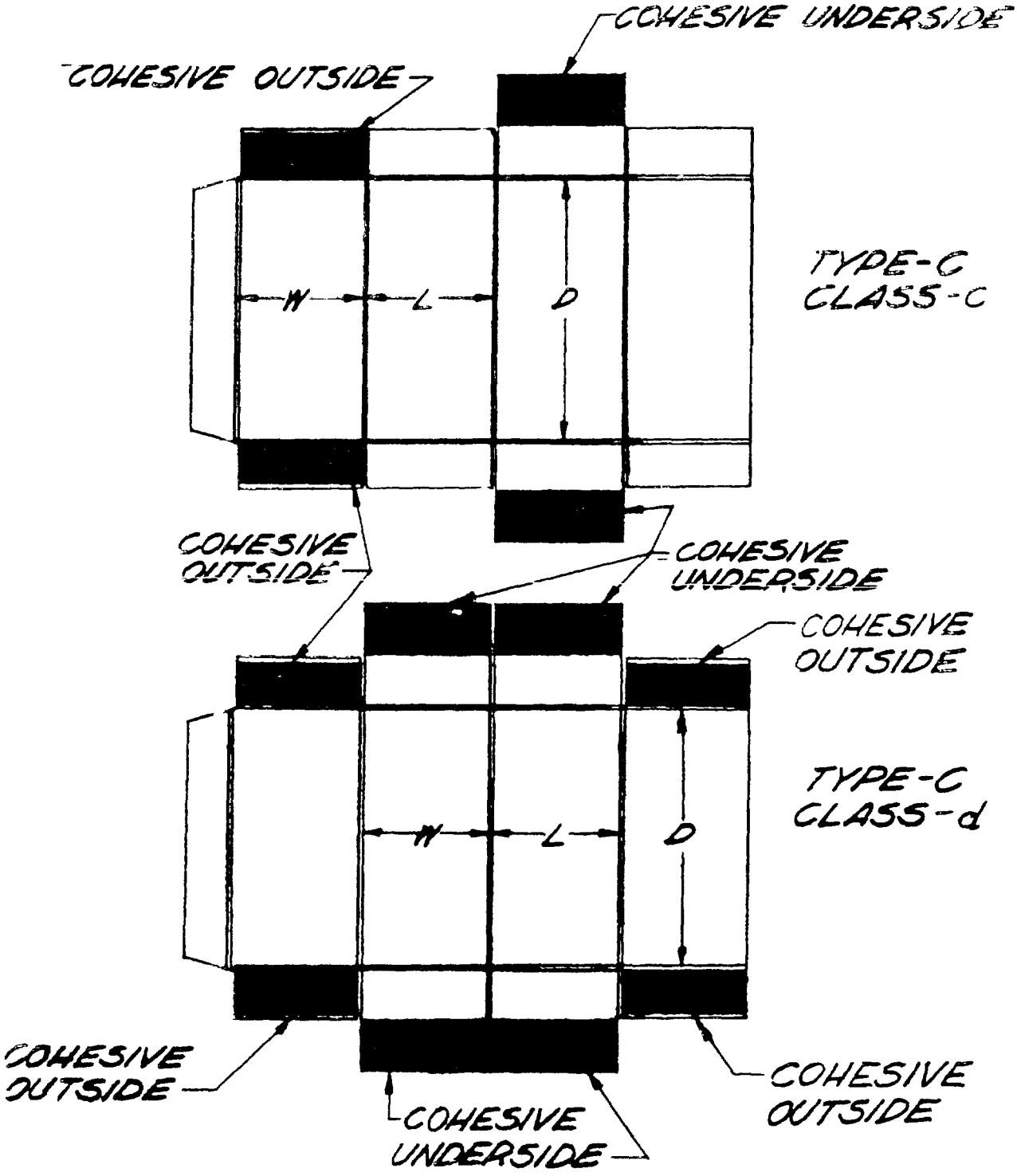
EXTENDED GLUE FLAP & TEAR SLOTS



BOX AS ERECTED

FIG. 1 - STYLE I, SEAL END

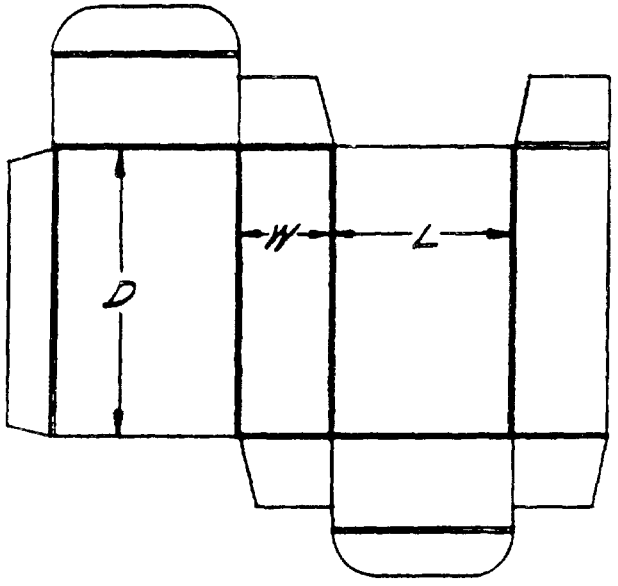
THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX



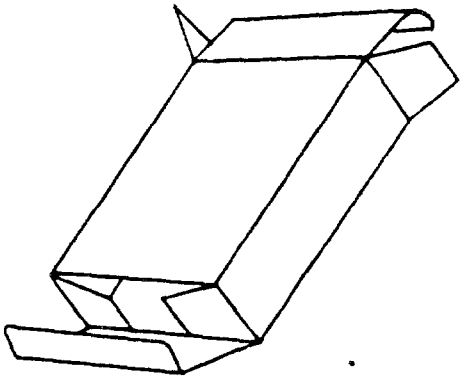
SHADED AREAS DENOTE COHESIVE ON SEALING FLAPS

FIG. - 1A - STYLE-I, SELF-SEALING

THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

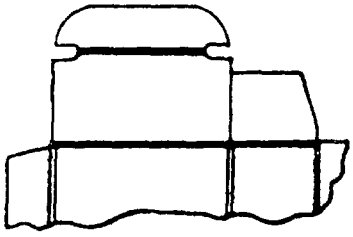


TYPE-D CLASS-a

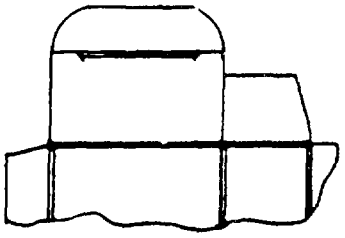


BOX AS ERECTED

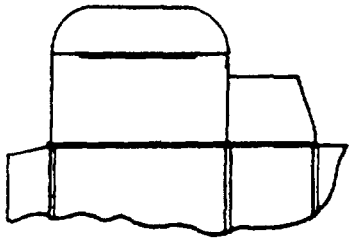
MODIFICATIONS OF TUCK ENDS



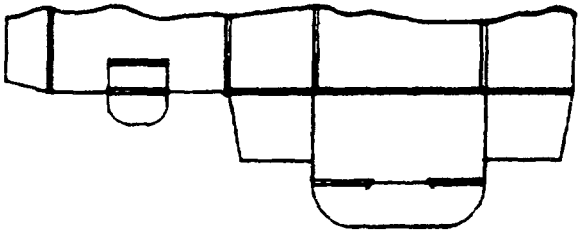
NOTCHED TUCKS



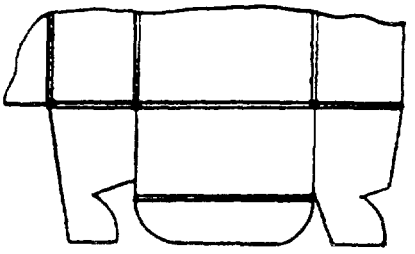
PYE LOCKS



SLIT LOCKS



TONGUE AND TUCK



LOCKED INNER FLAPS

FIG. 2 - STYLE II, TUCK END

THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

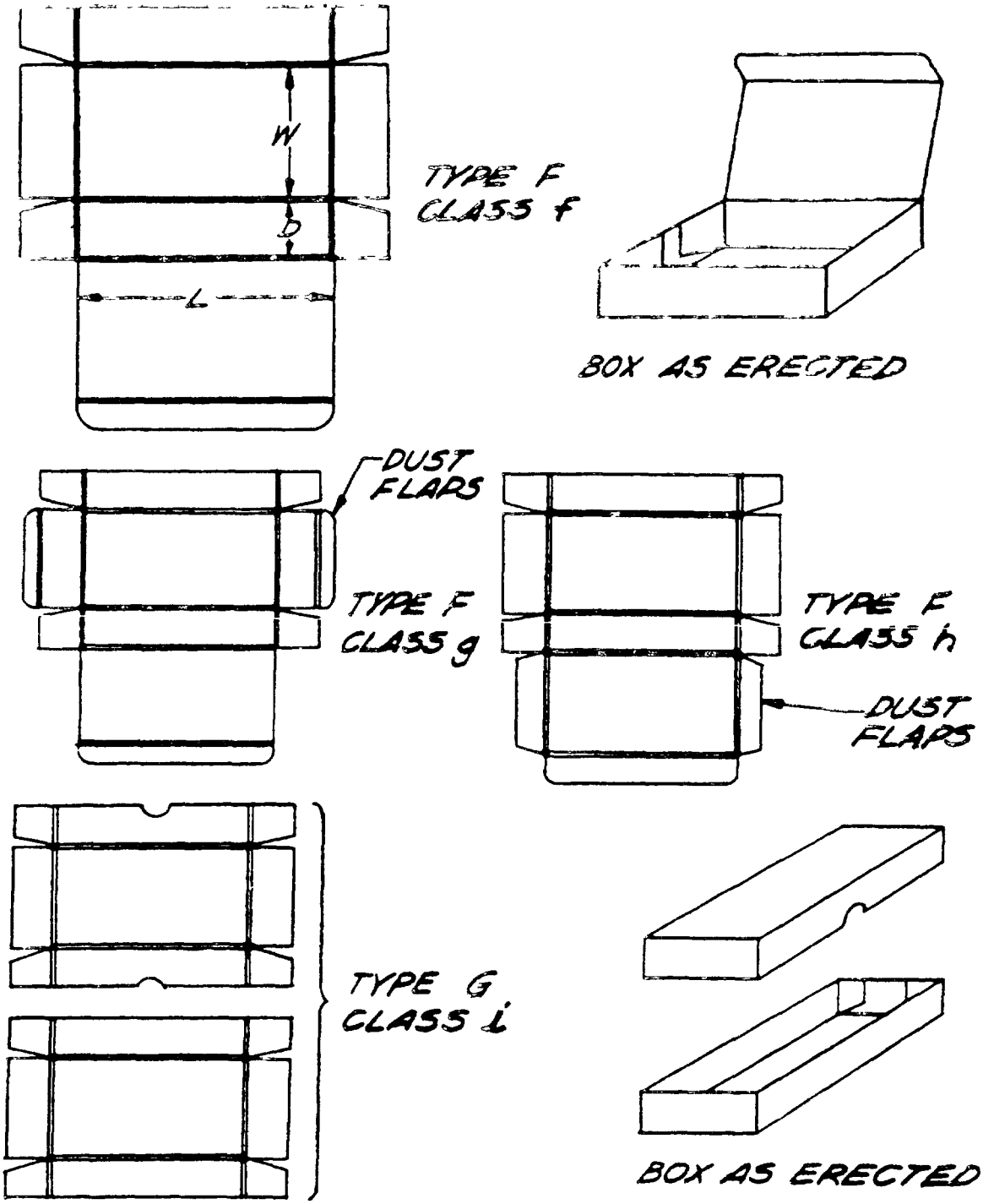
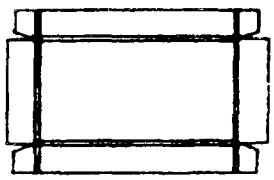
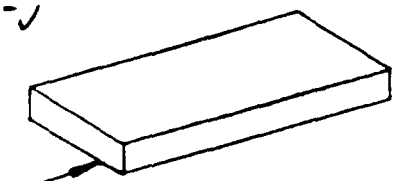


FIG. 3 - STYLE-III, BRIGHTWOOD BLANK

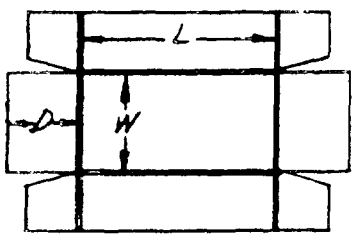
THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

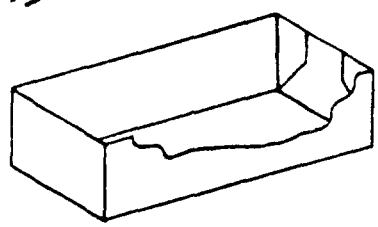
TYPE-G, CLASS-J
SUB CLASS-1



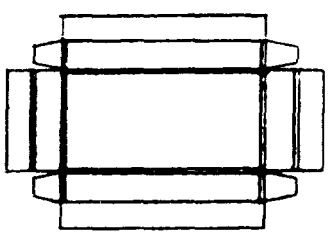


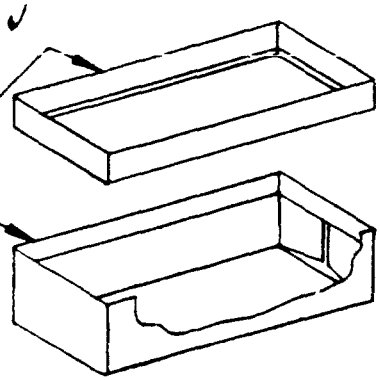
DEPTH OF LID AS SPECIFIED (NO TURNOVER)

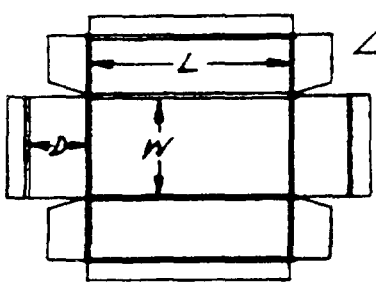




TYPE-G, CLASS-J
SUB CLASS-2



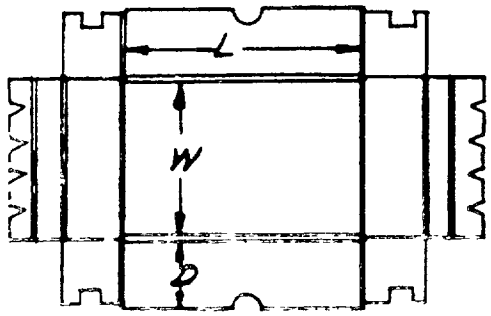


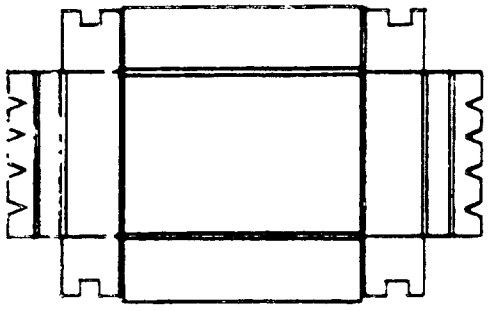


UNLESS OTHERWISE SPECIFIED, THE LID AND BASE SHALL EACH HAVE A MINIMUM 3/4" TURNOVER THE FULL LENGTH OF EACH SIDE AND ENDS. THE DEPTH OF THE LID SHALL BE MINIMUM 1". THE LENGTH OF THE END FLANGES SHALL BE ONE HALF OF THE BOX WIDTH, SO THAT WHEN SET UP THE END FLANGES SHALL MEET WITHIN 1/8" AND FORM A DOUBLE ENDED BOX. WHEN SPECIFIED, THE BASES AND/OR LIDS MAY BE MADE WITHOUT SIDEWALL TURNOVER & LINING PAPER ONLY SHALL TURN OVER THE SIDEWALLS NOT LESS THAN 1/4". THE ENDS OF THE BASES & LIDS SHALL HAVE A 3/4" TURNOVER.

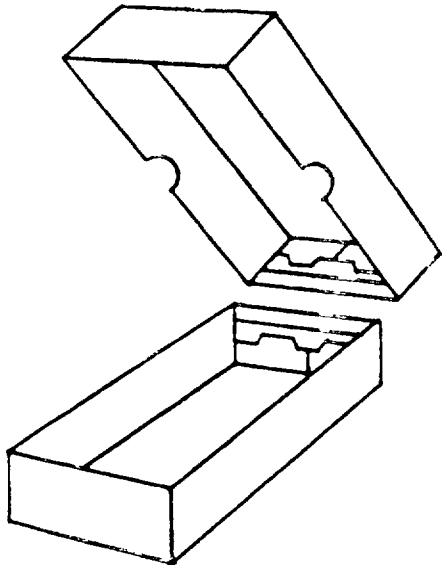
FIG. 3A - STYLE-III, BRIGHTWOOD BLANK

THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

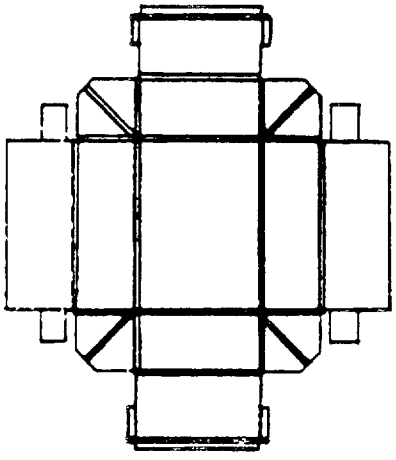




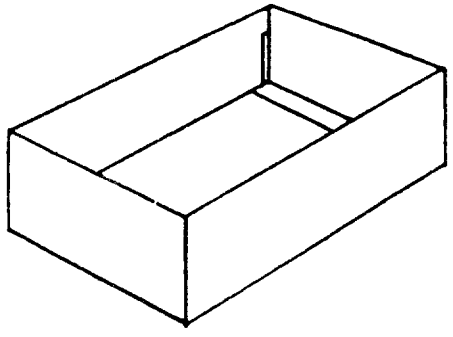
(WITHOUT DOUBLE SIDE WALLS)
TYPE-I CLASS-i



BOX AS ERECTED



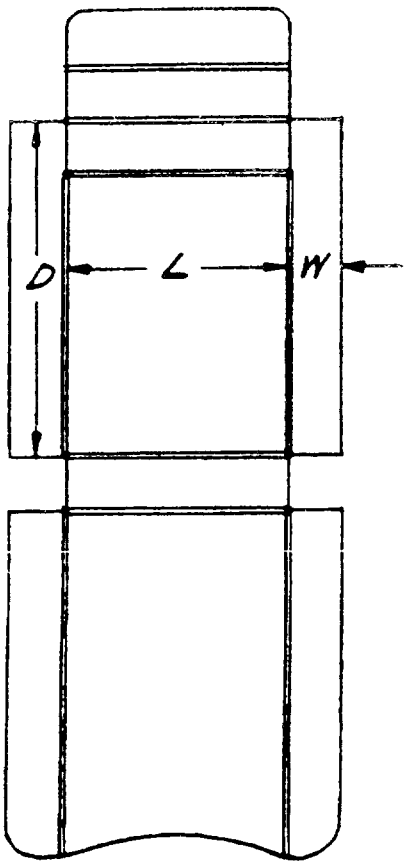
(WITH DOUBLE SIDE WALLS
TYPE-J CLASS-k



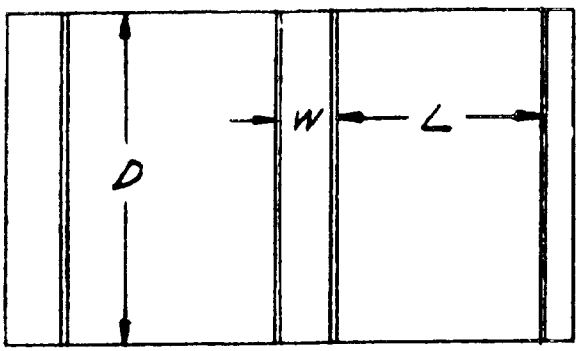
BOX AS ERECTED

FIG. 4-STYLE IV, OVERLAPPING END WALL
(WITH OR WITHOUT DOUBLE SIDE WALLS)

THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

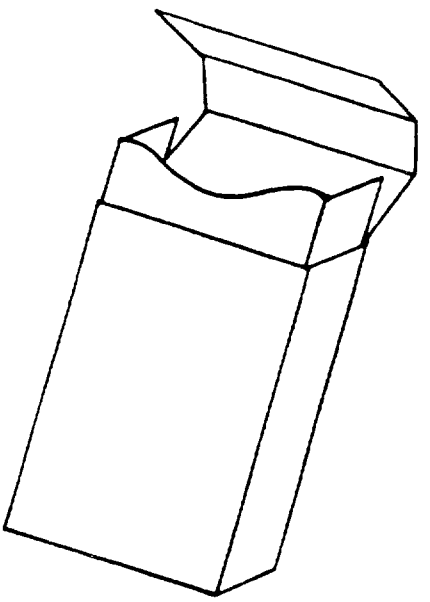


INNER SLIDE



GLUED TUBE

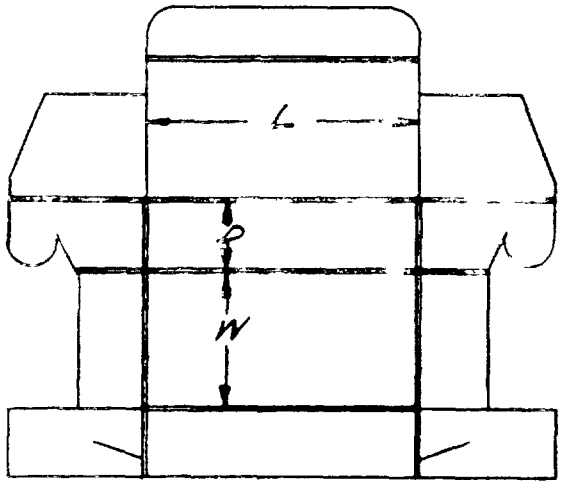
(SLIDE MAY BE ANOTHER TYPE OF TRAY)

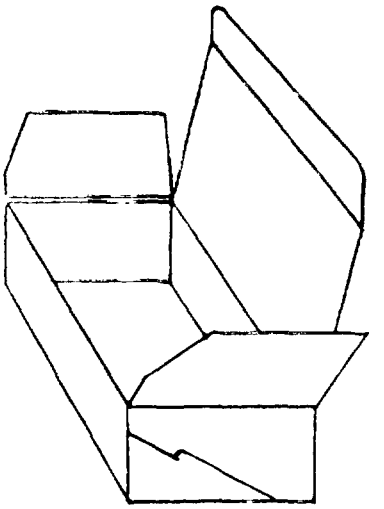


BOX AS ERECTED

FIG. 5 -STYLE VI, TUBE AND SLIDE

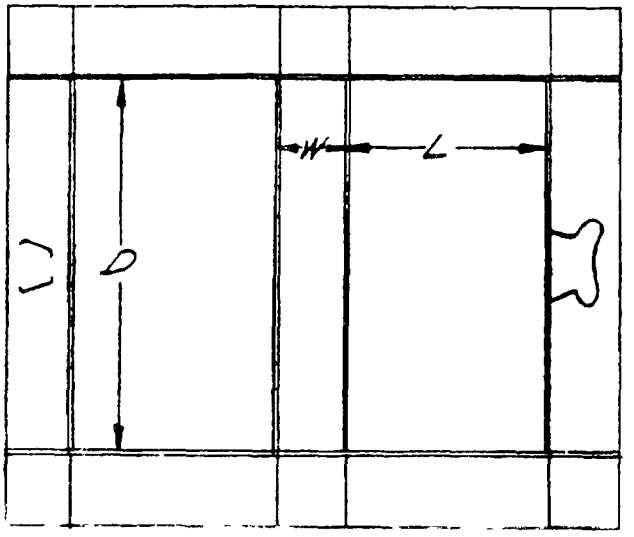
THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

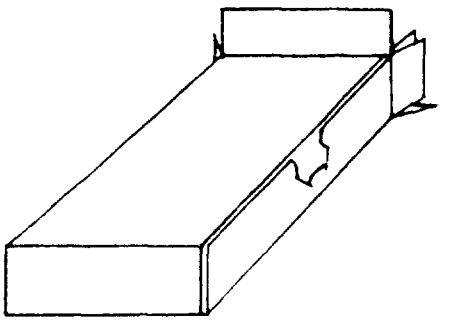




BOX AS ERECTED

FIG. 6-STYLE V, CRACKER STYLE LOCK END

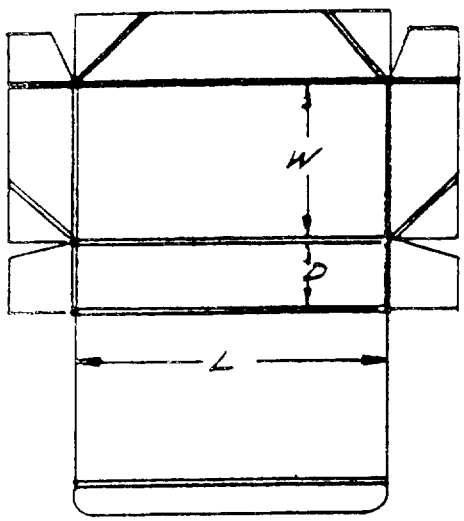




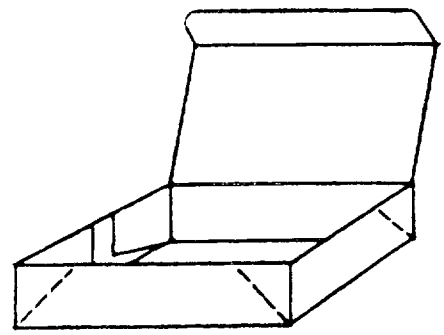
BOX AS ERECTED

FIG. 7-STYLE VII, ONE PIECE FOLDERS

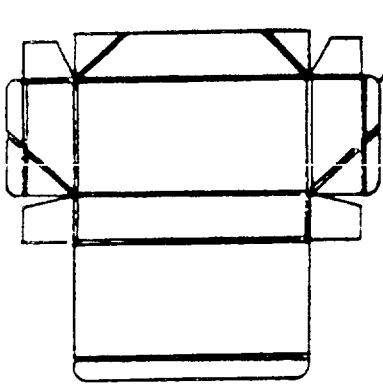
THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX



TYPE-F
CLASS-f

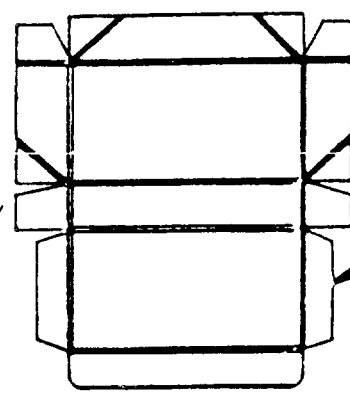


BOX AS ERECTED



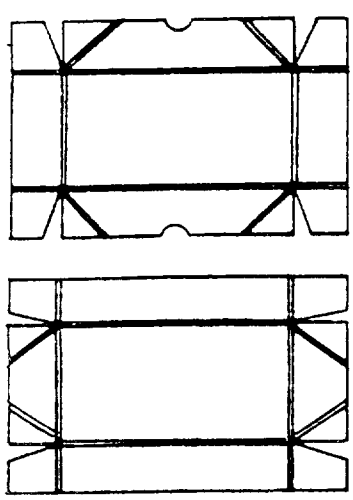
DUST FLAPS

TYPE-F
CLASS-g

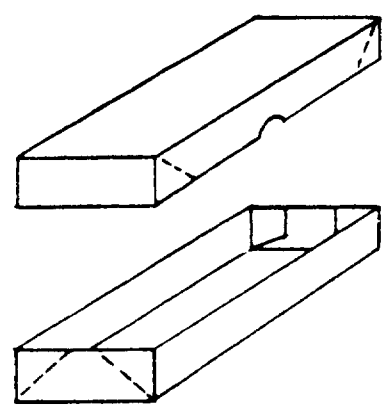


TYPE-F
CLASS-h

DUST FLAPS



TYPE-G
CLASS-i



BOX AS ERECTED

FIG. 8 - STYLE VIII, DIAGONAL FOLDS

THE DIAGRAM SHOWS THE OUTSIDE OF THE BOX

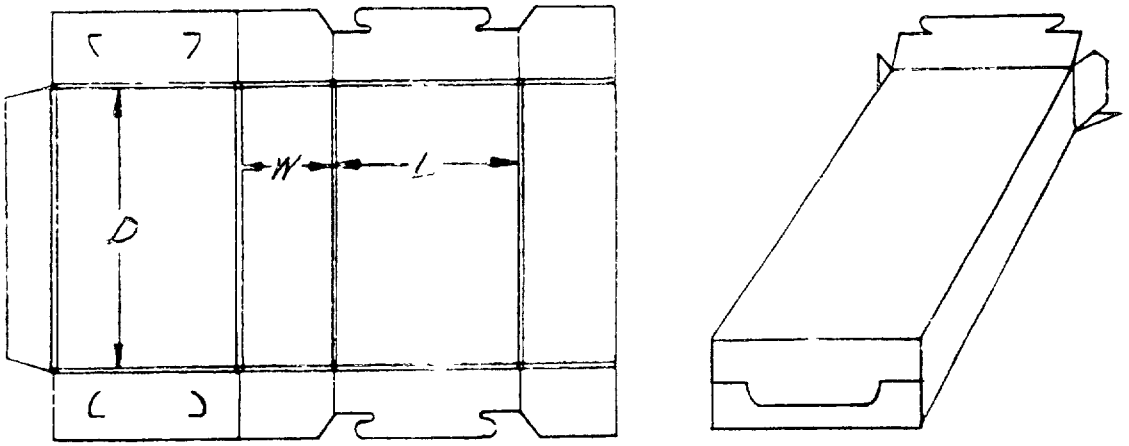


FIG. 9 - STYLE IX, DOUBLE LOCK END TOP AND BOTTOM

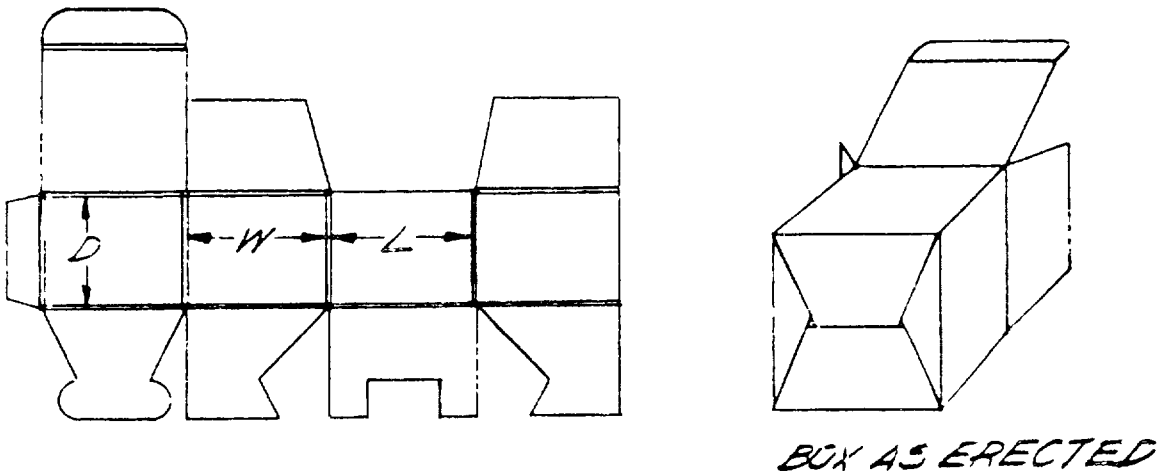


FIG 10 - STYLE X, SNAP LOCK BOTTOM WITH TUCK TOP

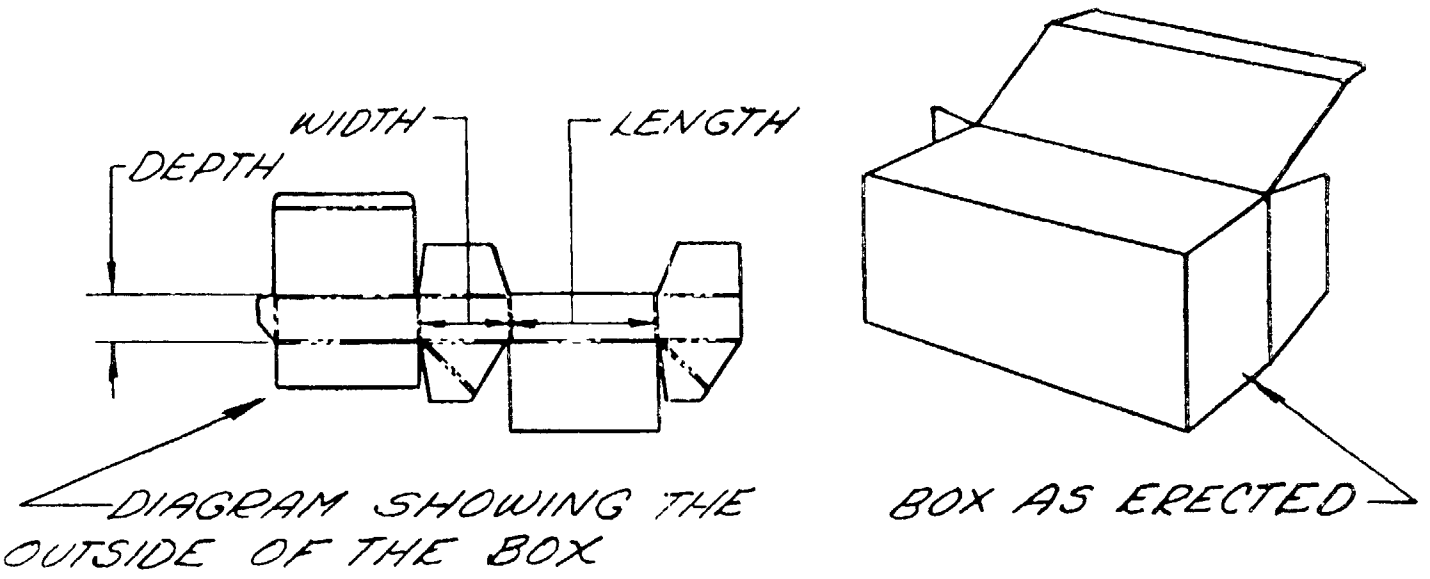
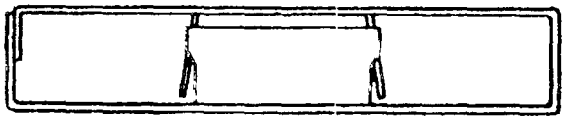


FIGURE 11 STYLE XI AUTOMATIC FOLD, BOTTOM AND SIDES GLUED



FOLDED

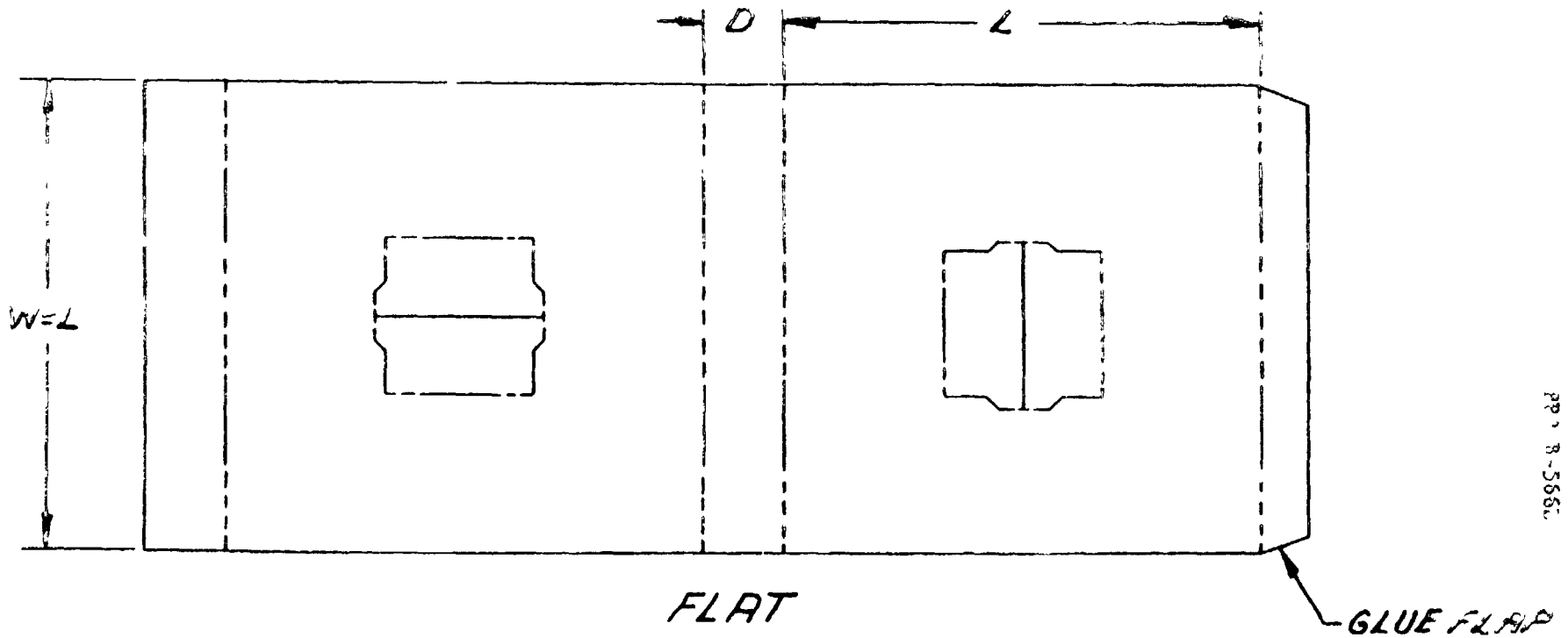
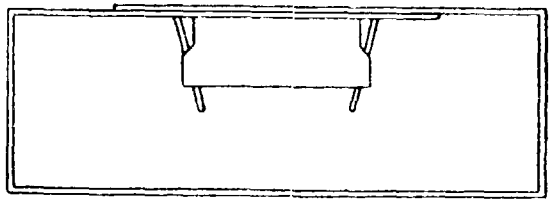
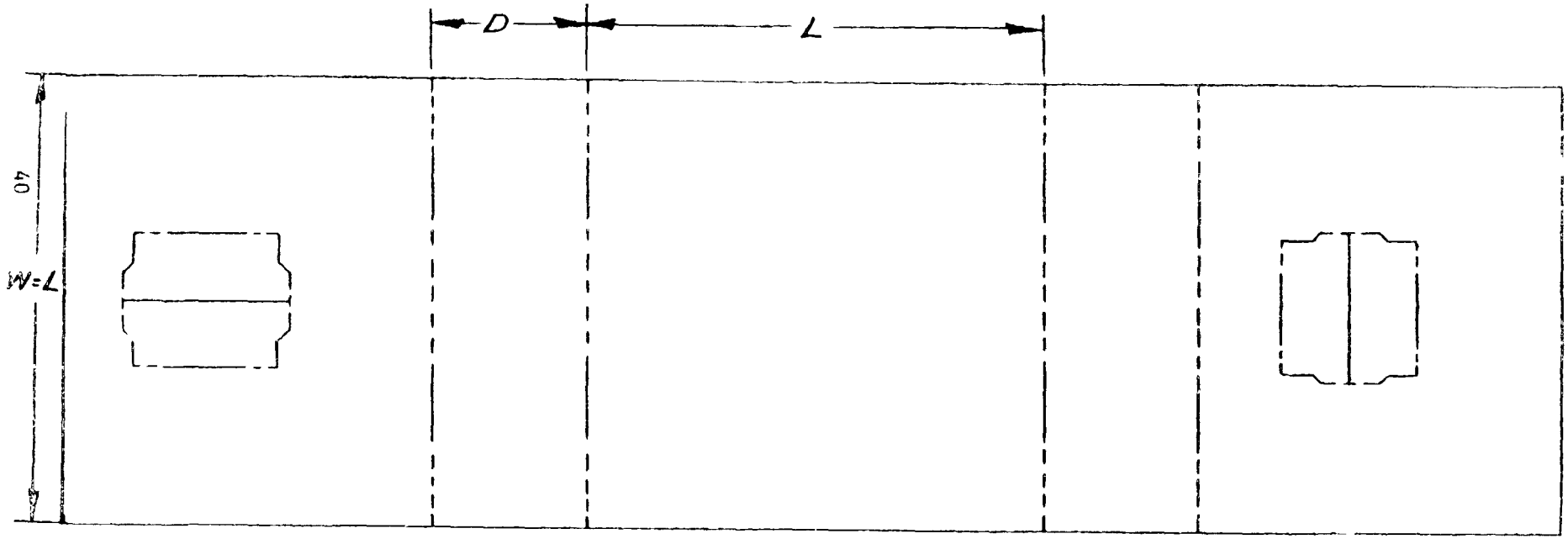


FIGURE 12A - STYLE XIII - TYPE K - CLASS 1 - CENTER SUPPORT FOR ROLLS

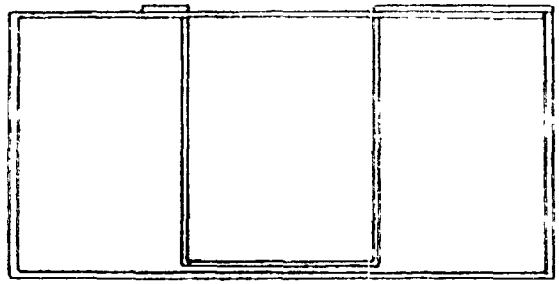


FOLDED

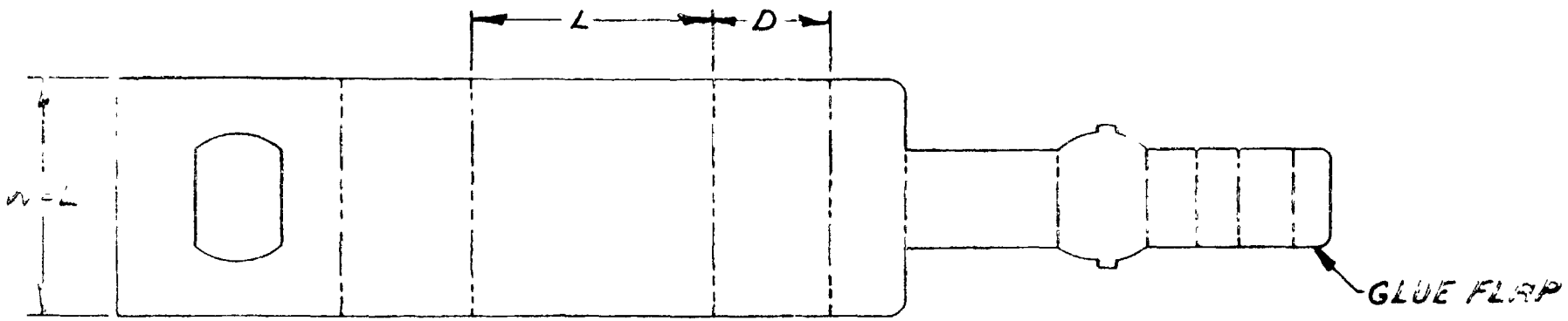


FLAT

FIGURE 12B - STYLE XII TYPE K - CLASS M - CENTER SUPPORT FOR ROLLS



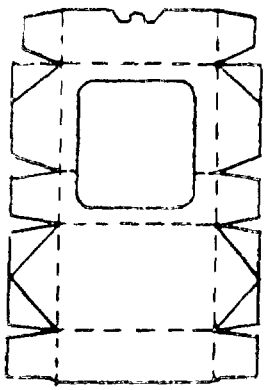
FOLDED

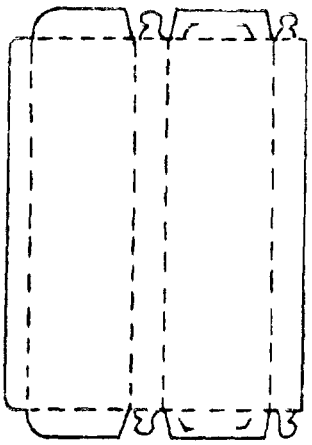


FLAT

FIGURE 12c - STYLE XII, TYPE K · CLASS N - CENTER SUPPORT FOR ROLLS

PPP-B-1565E





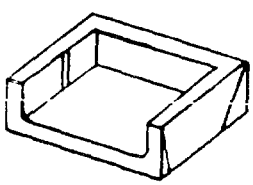


FIG. 13
STYLE XII

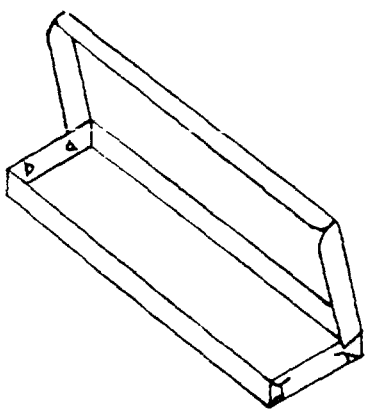


FIG. 14
STYLE XIV

BOXES, FOLDING, PAPERBOARD

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b. Recommended Wording

c. Reason/Rationale for Recommendation

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