

FFP-G-460C
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 SUPERSEDING
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FEDERAL SPECIFICATION
 GLASS CONTAINERS, FILLED AND CLOSED,
 PACKAGING AND PACKING OF

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

1. SCOPE

1.1 This specification covers the packaging, packing, and marking for shipment of closed glass containers filled with a quantity of one gallon or less. The requirements and testing of fill of container (net contents), headspace, leakage, vacuum reading, labeling, cap description including internal coatings and cap liner shall be in the commodity specification.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues 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:

PPP-B-566	-	Boxes, Folding, Paperboard.
PPP-B-636	-	Boxes, Shipping, Fiberboard.
PPP-B-676	-	Boxes, Setup.
PPP-C-795	-	Cushioning Material, Cellular, Plastic Film for Packaging Application.
PPP-C-843	-	Cushioning Material, Cellulosic.
PPP-C-1120	-	Cushioning Material, Uncompressed Bound Fiber for Packaging.
PPP-E-911	-	Excelsior, Wood, Fabricated Pads and Bulk Form.
PPP-F-320	-	Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade) and Cut Shapes.
PPP-P-115	-	Pads, Paper, Macerated.
PPP-P-291	-	Paperboard, Wrapping, and Cushioning.
PPP-S-30	-	Sacks, Shipping, Paper, (Cushioned).

Federal Standards:

Fed. Test Method Std. No. 101 - Preservation, Packaging, Packing Materials.
 Test Procedures.
 Fed. Std. No. 123 - Marking for 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, U.S. Government Printing Office, Washington, DC 20402.

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(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-L 35078 - Loads, Unit: Preparation of Nonperishable Subsistence.

Military Standards.

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

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

Laws and Regulations.

Code of Federal Regulations.

49 CFR 170-178 - U.S. Department of Transportation Rules and Regulations for Transportation of Hazardous Materials.

(The Code of Federal Regulations (CFR) and the 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.)

3. REQUIREMENT

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

3.1.1 Levels A and B.

3.1.1.1 Three-ounce or less capacity container. Twelve closed glass containers filled with a three-ounce quantity or less shall be arranged as specified in

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table I and packaged in a box conforming to PPP-B-566 or PPP-B-676, variety 1 or 2. The box shall be provided with partitions which are equal to the height of the closed glass containers. The box shall be closed in accordance with the appendix of the applicable box specification.

3.1.1.2 More than three-ounce through one gallon capacity container. The closed glass container filled with more than a three-ounce through one gallon quantity does not require packaging.

3.1.2 Level C. The closed glass containers filled with a quantity of one gallon or less shall be packaged to afford adequate protection against physical damage during shipment from supplier to the first receiving agency.

TABLE I. Number and arrangement of containers

Nominal capacity of glass containers in ounces <u>1/</u>	Intermediate Container		Shipping Container		Number of glass containers per shipping container
	Number of glass containers	Arrangement of glass containers	Number of layers	Arrangement of containers in each layer	
3 and less	12	3 x 4	2	2 x 3	144
Over 3 through 8	--	-----	2 or 1	4 x 6 or 6 x 8	48
Over 8 through 16	--	-----	-----	4 x 6	24
Over 16 through 40	--	-----	-----	3 x 4	12
Over 40 through 70	--	-----	-----	2 x 3	6
Over 70 through 128 or 1 gallon	--	-----	-----	2 x 2	4

1/ The number of ounces shall apply to fluid and avoirdupois ounces alike.

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

TABLE II. Packing requirements

Nominal cap. of glass cntrs. <u>1/</u> in ozs.	Level A			Level B		
	Cushioning <u>2/</u> Material	Interior packing	Shipping container	Cushioning <u>2/</u> Material	Interior packing	Shipping container
1 - 3	3.2.1.1.5	None	Box, style RSC or CSSC 3.2.1.1	3.2.2.1.5	None	Box, style, RSC or CSSC, 3.2.2.1
Over 3 - 40	3.2.1.1.5	Pads, 3.2.1.1.1 Partitions, 3.2.1.1.2	Box, style RSC-L or CSSC-L 3.2.1.1	3.2.2.1.5	Pads, 3.2.2.1 Partitions 3.2.2.1.2	Box, style RSC-L or CSSC-L 3.2.2.1
Over 40 - 70	3.2.1.1.5	Pads, 3.2.1.1.1 Shells (single wall), 3.2.1.1.3	Box, style RSC or CSSC 3.2.1.1	3.2.2.1.5	Pads, 3.2.2.1 Shells (single wall), 3.2.2.1.3	Box, style RSC-L or CSSC-L 3.2.2.1 or 3.2.2.1.1
Over 70 - 128 or 1 gallon	3.2.1.1.5	Pads, 3.2.1.1.1 Shells (double-wall) 3.2.1.1.3 or	Box, style RSC or CSSC 3.2.1.1	3.2.2.1.5	Pads, 3.2.2.3 Shells (double-wall) 3.2.2.1.3 or	Box, style RSC-L or CSSC-L, 3.2.2.1 or 3.2.2.1.1

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TABLE II. Packing requirements (con.)

Nominal cap. of glass cntrs. 1/ in ozs.	Level A			Level B		
	Cushioning 2/ Material	Interior packing	Shipping container	Cushioning 2/ Material	Interior packing	Shipping container
Over 70 - 128 or 1 gallon (con.)		Partitions, 3.2.1.1.2 and Boxes, 3.2.1.1.4			Partitions, 3.2.2.1.2 and Boxes 3.2.2.1.4	

1/ The number of ounces shall apply to fluid and avoirdupois ounces alike.

2/ Required only when specified (see 3.2.1.1.5 or 3.2.2.1.5).

3.2.1 Level A.

3.2.1.1 Shipping container. The shipping container shall be a box conforming to PPP-B-636, grade V2s, style as indicated in table II. The box shall be fitted with pads, partitions, shells, as indicated in table II. The box shall be closed in accordance with method III, waterproofed in accordance with method V, and banded in accordance with the appendix to PPP-B-636.

3.2.1.1.1 Pad. The pad shall be of fiberboard conforming to PPP-F-320, grade W5c, flute A or C or paperboard having a minimum basis weight of 142 pounds per 1000 square feet (BSF) and a minimum thickness of 3.047 inch. The pad shall fit the inside length and width of the box with a tolerance of not more than 1/8 inch. Pads are required on the top, between the layers and on the bottom of the bottles. Pads are not required on the packaged bottles or when CSSC or CSSC-L style box is supplied for bottles more than 40 ounce capacity (see table III).

TABLE III. Pads required				
Container	Box style	Top	Between layers	Bottom
Unpackaged bottles	RSC or RSC-L	required	required	required
Unpackaged bottles	CSSC or RSC-L	not required	required	not required
Packaged bottles	optional	not required	not required	not required

3.2.1.1.2 Partition. The partition shall be of fiberboard conforming to PPP-F-320, grade W6c, flute A or C. The partition shall be the half-slotted style with the same height as the closed glass container and provide a cell for each glass container. Alternatively, when the closed glass containers contain less than 16 ounces, fiberboard conforming to PPP-F-320, grade W6c, flute A, B, or C or grade W6s, shall be used. Alternatively, when boxes are used in lieu of shells and pads for interior packing (see 3.2.1.1.4), partition shall be fiberboard conforming to PPP-F-320, grade V15c, variety DW, the same height as the inside depth dimension of the shipping container.

3.2.1.1.3 Shell. The shell shall be of scored or folded fiberboard, the same height as the interior height of the shipping container, and the corrugations shall be horizontal.

3.2.1.1.3.1 For glass containers containing 40 to 70 ounces, the fiberboard shall conform to PPP-F-320, variety SW, grade W5c, flute A or C. The shell shall provide a cell for one or two glass containers (see fig. 1) with two thickness of fiberboard between adjacent glass containers and one thickness of fiberboard between glass containers and the ends and sides of the shipping containers.

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3.2.1.1.3.2 for glass containers containing 70 to and including 128 ounces, the fiberboard shall conform to PPP-F-320, variety DW, grade V15c and the double-wrap around fiberboard shall be variety DW, grade W5c, flute A or C. The shell shall provide a cell for one or two glass containers with four walls between adjacent glass containers and two walls between glass containers and the ends and sides of the shipping container (see figs. 1 and 2).

3.2.1.1.4 Box (for interior packing). Each closed glass container containing 70 up to and including 128 ounces shall be packed in a box conforming to PPP-B-636, grade W5c, style RSC or CSSC, flute A or C. The box shall be closed in accordance with the appendix to PPP-B-636. Waterproofing and banding are not required.

3.2.1.1.5 Cushioning material. When specified (see 6.2), each glass container shall be completely inclosed in one of the cushioning materials shown for level A in table IV. The cushioning material shall form wraps, pads, sleeves, tubes or bags, and shall be closed to prevent accidental opening with jute, sisal, manila or cotton twine, metal staples or pressure sensitive adhesive tape. Unless otherwise specified (see 6.2), the amount of the cushioning material shall be determined by successful passing of the rough handling test for complete packs specified in 4.3.

3.2.1.1.5.1 Liquid filled containers. When specified by the 49 CFR 170-178, each liquid filled glass container shall be cushioned on all surfaces with a minimum 3/4 inch thick cushioning material conforming to PPP-C-343, type I. The cushioning shall be secured with pressure sensitive adhesive tape.

TABLE IV. Cushioning material

Nomenclature	Specification	Level A	Level B
Cushioning material, cellulosic	PPP-C-843	Type II, class B	Type I, class B
Excelsior, wood, fabricated pads	PPP-E-911	Type II, class A	Type II, class B
Pad paper, macerated	PPP-P-115	Yes	Yes
Paperboard, wrapping and cushioning	PPP-P-291	No	Type III
Sack, shipping, paper, cushioned	PPP-S-30	Type I	Type I
Cushioning material, uncompressed bound fiber	PPP-C-1120	Type II, class B	Type II, class B
Cushioning material, cellular, plastic film	PPP-C-795	Type and class as appropriate	Type and class as appropriate

3.2.2 Level B.

3.2.2.1 Shipping container. The shipping container shall be a box conforming to PPP-B-636, class domestic, style as indicated in table II with flute A or C. The box shall be fitted with pads, partitions, shells as indicated in table II. The box shall be closed in accordance with the appendix to PPP-B-636.

3.2.2.1.1 Pad. The pad shall be as specified in 3.2.1.1.1, except the fiberboard conforming to PPP-F-320, class domestic, type CF, variety SW, grade 200. The paperboard and other requirements shall apply.

3.2.2.1.2 Partitions. The partition shall be as specified in 3.2.1.1.2, except that the fiberboard shall conform to PPP-F-320, type CF, class domestic, variety SW, grade 175. Alternatively, the partitions shall be of solid paperboard as indicated in table V. Alternatively, when a box is used in lieu of shells and pads for interior packing (see 3.2.2.1.4), partitions shall be fiberboard conforming to PPP-F-320, type CF, class domestic, variety DW, grade 275.

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TABLE V. Partitions

Nominal capacity 1/ glass containers	Basis weight per thousand square feet (BSF)	Thickness of paperboard
up to 10 ounces	no requirement	0.035 inch
up to 25 ounces	130	0.040 inch
over 25 ounces	142	0.047 inch

1/ The number of ounces shall apply to fluid and avoirdupois ounces alike.

3.2.2.1.3 Shell. The shell shall be as specified in 3.2.1.1.3, except that the SW fiberboard shall be class domestic, grade 275 and the DW fiberboard shall be class domestic, grade 200.

3.2.2.1.4 Box (for interior packing). Each closed glass container containing 70 through 128 ounces shall be packed in a box conforming to PPP-B-636, class domestic, flute A or C, grade 200, style RSC or CSSC. The box shall be closed in accordance with the appendix of PPP-B-636.

3.2.2.1.5 Cushioning material. When specified (see 6.2), each glass container shall be cushioned as specified in 3.2.1.1.5, except that cushioning material shall be of the type shown for level B in table IV and tape used to secure the cushioning material may be any tape suitable for the purpose.

3.2.2.1.5.1 Liquid filled container. When specified (see 6.2) each liquid filled glass container shall be cushioned as specified in 3.2.1.1.5.1.

3.3.3 Level C. Glass containers packaged in the quantities and arrangement specified in table I, shall be packed in a manner to insure carrier acceptance and safe delivery at destination. The shipping container shall be the same as that normally used by the supplier for retail distribution. Containers shall comply with the Uniform Freight Classification or National Motor Freight Classification, as applicable.

3.4 Marking.

3.4.1 Civil agencies. The intermediate and shipping containers shall be marked in accordance with 3.4.3 and Fed. Std. No. 123.

3.4.2 Military requirements. The intermediate and shipping containers shall be marked in accordance with 3.4.3 and MIL-STD-129.

3.4.3 Precautionary marking. The top of the shipping container shall be imprinted in bold face type, preferably over two inches in height as follows.

FRAGILE -- HANDLE WITH CARE

or

a similar precautionary marking

The use of fragile labels is not required when shipping containers are marked as specified above.

The end or side of the shipping container which is closest to the top of the glass containers shall be marked with "THIS END UP" or "THIS SIDE UP".

3.5 Department of Transportation regulated commodities. Department of Transportation regulated commodities shall be packaged and packed in accordance with the requirements of the Department of Transportation Regulations for Transportation of Explosives and Other Dangerous Articles.

3.6 Workmanship. The packaging, packing, cushioning requirements and marking shall conform to the quality and grade of product established by this specification.

3.7 Palletization.

3.7.1 Civil agencies. The filled and closed shipping containers shall be palletized as specified in the contract or order (see 6.2).

3.7.2 Military requirements. When specified (see 6.2), packaged and packed subsistence items shall be supplied in unit loads in accordance with MIL-B-55078 for the type and class of load specified.

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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 that supplies and services conform to prescribed requirements.

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

4.2.1 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.

4.2.2 Examination of the preparation for delivery. Examination of preparation for delivery shall be in accordance with table VI paragraphs 4.2.2.1 thru 4.2.2.3. The sample unit for table VI shall be one filled shipping container. The sample size shall be the number of containers indicated by inspection level S-3. Lot size shall be expressed in terms of shipping containers. The acceptable quality levels expressed as percent defective shall be 4.0 for major and 10.0 for minor defects.

4.2.2.1 Examination of cushioning material. When cushioning material is required, the examination to determine compliance with the cushioning requirements of table IV shall be in accordance with 4.2.2 and table VI.

TABLE VI. Examination of preparation for delivery

Examine	Defect	Category	
		Major	Minor
Container	Not as specified.	101	
Marking	Required marking on shipping or intermediate container missing, incorrect or illegible.	102	
Arrangement of glass containers	Number or arrangement of glass containers not as specified.		201
Fiberboard partition, shell, pad, liner (as required)	Partition, pad, shell, or liner missing.	103	
	Partition, shell or liner not height specified.	104	
	Partition or shell does not form snug cell for glass container.	105	
	Partition not half-slotted.		202
	Pad smaller than required size. 2/	106	
	Shell not providing the proper number of thicknesses between glass containers and between glass containers and shipping container.	107	
	Not as specified.	108	

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TABLE VI. Examination of preparation for delivery (con.)

Examine	Defect	Category	
		Major	Minor
Paperboard box (when supplied)	Partition missing. 1/	109	
	Partition not same material as box. 1/		203
	Not as specified.	110	
	Partition not same height as glass container. 1/, 2/		204
Cushioning (when specified)	Cushioning material missing.	111	
	Material not type specified.		205
	Cushioning material not applied in the form specified.		206
	Cushioning material not sealed or secured as specified.		207

1/ Examine one paperboard box from a shipping container.

2/ Measurements shall be made to the nearest 1/8 of an inch using a properly calibrated measuring tool.

4.2.2.2 Examination of closure, waterproofing and strapping of containers. When containers are required to comply with PPP-B-566, PPP-B-636, or PPP-B-676, the examination for defects in closure, waterproofing and banding shall be in accordance with the appendix to the appropriate specification.

4.2.2.3 Examination of palletization. When palletization is required, the loads shall be examined to determine compliance with the requirements of the contracts or order for civil agencies or MIL-L-35078 for military agencies.

4.3 Tests.

4.3.1 Rough handling test. When the fiberboard container serves as the shipping container and paragraph 4.3.1.1 applies, the completed container shall be tested according to Federal Test Method Standard No. 101 and the methods specified in table VII except as modified by table VIII for the drop test heights.

4.3.1.1 Small containers. The free-fall drop tests and vibration tests shall apply to small containers; one or both vibration test(s) shall be conducted at the option of the contractor. Small containers are those having no one edge or diameter over 60 inches and a gross weight of 200 pounds or less.

4.3.1.1.2 Interpretation or results. All materials and components comprising the packaging shall be free from damage or evidence of displacement which affect the packaging. The material within the packaging shall show no visible signs of damage. When evidence of damage cannot be determined solely by visual inspection; functional tests shall be conducted to ensure freedom from operational malfunction.

TABLE VII. Rough handling tests

Test	Methods of		Special requirements or exceptions
	Fed. Test Method	Std. No. 101	
Free-fall drop tests:	-----		
Corner drop	5007	Procedure E	See note 1
Flat drop	5007	Procedure E	See note 1
Vibration:	-----		
Repetitive shock		5019	
Sinusoidal motion		5020	

NOTE :

- Containers employing internal cushioning, blocking or bracing shall be subjected to both corner and flat drop tests.

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TABLE VIII. Drop test heights

Gross weight of container and contents	Edgewise drop (2 drops each end)	Cornerwise drop test (2 drops on each of 2 diagonally opposite corners of bottom)
Pounds	Height of drop (inches)	Height of drop (inches)
Through 200	30	30

5. PREPARATION FOR DELIVERY

(Not applicable, see section 3).

6. NOTES

6.1 Intended use. The packaging, packing, cushioning, and marking of filled glass containers of 1 gallon capacity and smaller for other than medicinal products.

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

- (a) Title, number, and date of this specification.
- (b) Applicable levels of packaging and packing (see 3.2 and 3.3.).
- (c) When cushioning is required (see 3.2.1.1.5 and 3.2.2.1.5).
- (d) When rough handling test is not required (see 3.2.1.1.5 and 3.2.2.1.5).
- (e) Marking required (see 3.4).
- (f) Palletization or type and class of unit load required (see 3.7).

6.3 The appendix of the previous revisions of this specification has been incorporated in the appropriate paragraphs in section 3.

Military Coordinating Activity

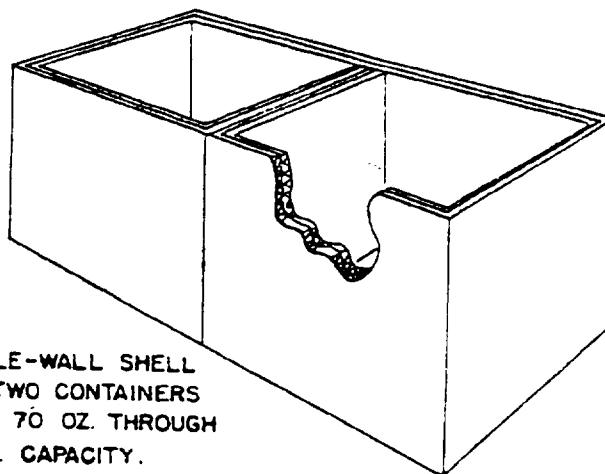
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Navy - SA
Air Force - 99

CIVIL AGENCY COORDINATING ACTIVITIES:

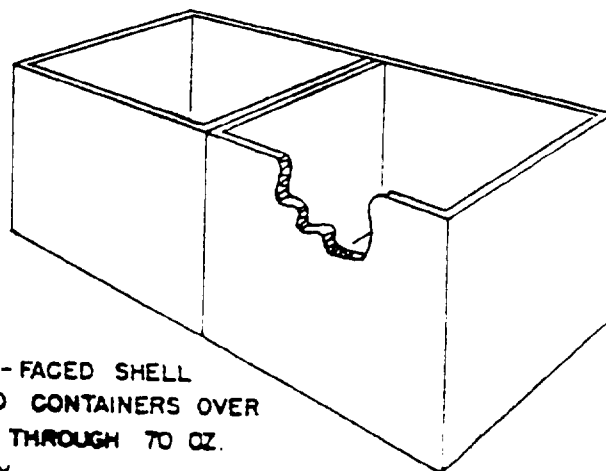
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USDA - APS
HEW - MII

PREPARING ACTIVITY GSA - FSS

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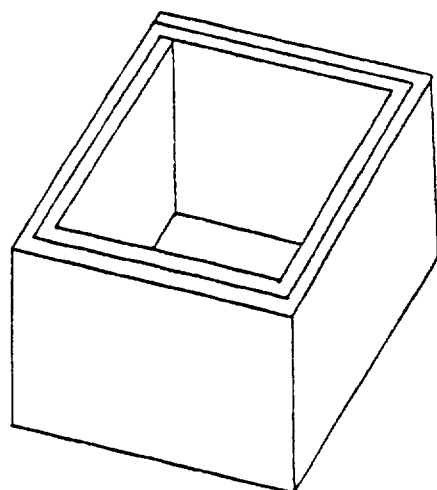
DOUBLE-WALL SHELL
FOR TWO CONTAINERS
OVER 70 OZ. THROUGH
1 GAL. CAPACITY.



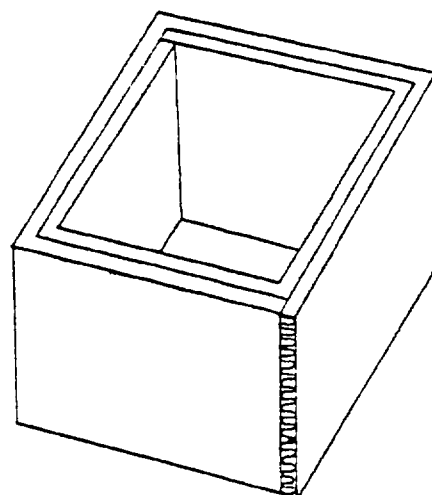
DOUBLE-FACED SHELL
FOR TWO CONTAINERS OVER
40 OZ. THROUGH 70 OZ.
CAPACITY.

FIGURE -1. SHELLS, GLASS CONTAINERS

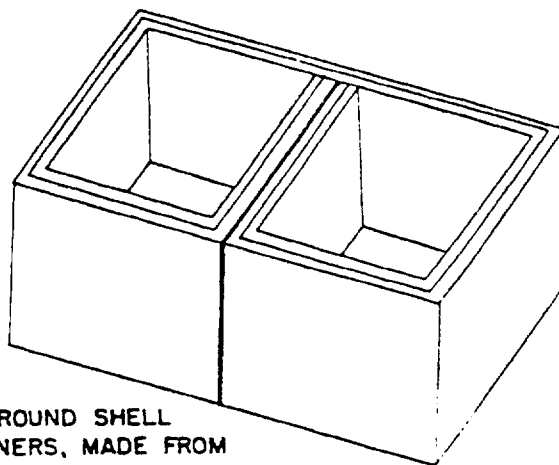
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DOUBLE WRAP-AROUND SHELL FOR AN INDIVIDUAL CONTAINER, MADE FROM ONE PIECE OF DOUBLE-FACED FIBERBOARD.



DOUBLE WRAP-AROUND SHELL FOR AN INDIVIDUAL CONTAINER, MADE FROM TWO PIECES OF DOUBLE-FACED FIBERBOARD.



DOUBLE WRAP-AROUND SHELL FOR TWO CONTAINERS, MADE FROM TWO PIECES OF DOUBLE-FACED FIBERBOARD.

FIGURE-2. SHELLS, WRAP-AROUND, FOR GLASS CONTAINERS OVER 70 OZ. THROUGH 1 GAL. CAPACITY.

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 35 cents each.

