

RR-J-8108

December 20, 1972

SUPERSEDING

Int. Fed. Spec. RR-J-00810A(GSA-FSS)

February 6, 1968

## FEDERAL SPECIFICATION

## JUGS, INSULATED, (WATER)

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 cylindrically shaped, insulated jugs and lids for the storage and dispensing of cooled water.

1.2 Classification.

1.2.1 Sizes. Insulated jugs furnished under this specification shall be of the following sizes, as specified (see 6.2):

- Size A - 2 gallons
- Size B - 3 gallons
- Size C - 5 gallons
- Size D - 10 gallons
- Size E - 15 gallons

## 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:

- L-P-390 - Plastic, Molding and Extrusion Material, Polyethylene and Copolymers (Low, Medium, and High Density).
- L-P-392 - Plastic Molding Material, Acetal, Injection and Extrusion.
- L-P-394 - Plastic Molding Material, (Propylene Plastics, Injection and Extrusion.
- L-P-398 - Plastic Molding Material, Styrene-Butadiene.
- L-P-510 - Plastic Sheet, Polyvinylchloride, Rigid, High Impact.
- L-P-1035 - Plastic Molding Material, Vinyl Chloride Polymer and Vinyl Chloride-Vinyl Acetate Copolymer, Rigid.
- L-P-1183 - Plastic Molding Material, Acrylonitrile-Butadiene-Styrene (ABS), Rigid.
- QQ-S-775 - Steel Sheets, Carbon, Zinc-Coated.
- PPP-B-636 - Box, Fiberboard.
- PPP-B-640 - Boxes, Fiberboard, Corrugated, Triple-Wall.

Federal Standard:

Fed. Std. No. 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, U. S. 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.

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(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 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:

21 CFR 121:

Subpart F - Food Additives Resulting From Contact With Containers or Equipment and Food Additives Otherwise Affecting Food.

(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.

#### U. S. Department of Health, Education and Welfare (HEW):

Public Health Service Publication 934, Food Service Sanitation Manual (PHSP-934).

(Application for copies should be addressed to the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.)

#### National Motor Freight Traffic Association, Inc., Agent

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Association, 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 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 Preproduction sample. When specified (see 6.2), before production is commenced, a sample of the insulated jug shall be submitted or made available to the contracting officer or his authorized representative for approval in accordance with 4.2. The approval of the preproduction sample authorizes the commencement of production, but does not relieve the supplier of responsibility for compliance with all applicable provisions of this specification. The preproduction sample shall be manufactured in the same facilities to be used for the manufacture of the production items.

3.2 Standard product. Except for modifications which are required to meet specific requirements of this specification, the jugs shall be the manufacturer's current standard product.

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3.3 Sanitary requirements. Jugs shall conform to the applicable material and sanitary requirements of PHSP-934, Food Service Sanitation Manual, part V, section D, paragraph 1.

3.4 Materials. Materials specified shall conform to the applicable specifications and requirements specified hereinafter. Where materials are not definitely specified, they shall be of the quality used for the purpose in commercial practice.

3.4.1 Compliance. The supplier shall present either a certificate or satisfactory evidence that the materials used in the finished product comply with the requirements of 3.4.2, 3.4.3, 3.4.4, and 3.4.5, as applicable.

3.4.2 Steel sheet, carbon, zinc-coated. Zinc-coated steel sheet shall conform to QQ-S-775, type I, class D.

3.4.3 Plastic. Plastic material specified hereinafter shall be virgin material; however, reground imperfect parts, sprues, and runners due to molding, or forming imperfections of the same composition as the virgin material shall be acceptable. Plastic materials shall conform to subpart F of 21 CFR 121.

3.4.3.1 Polyethylene. Polyethylene shall be high density linear type conforming to L-P-390, type I, class H, grade 1.

3.4.3.2 Polypropylene. Polypropylene shall be impact resistant conforming to L-P-394, type III, grade A.

3.4.3.3 Styrene-butadiene. Styrene-butadiene shall conform to L-P-398, type II, class 2.

3.4.3.4 Polyethylene, low density. Low density polyethylene shall conform to L-P-390, type I, class L, grade 2.

3.4.3.5 Acrylonitrile-butadiene-styrene. Acrylonitrile-butadiene-styrene (ABS) shall conform to L-P-1183, type I.

3.4.3.6 Polyvinylchloride. Polyvinylchloride shall conform to L-P-1035, type III, grade NT, or L-P-510, type GP-T.

3.4.3.7 Acetal. Acetal shall conform to L-P-392, type I, class 1.

3.4.4 Insulation. The space between the inner shell and outer jacket shall be completely filled with insulation. Insulation material shall be foamed-in-place polyurethane, except that a preformed polystyrene disc may be used to form the bottom insulation and for support of the inner shell. Foamed-in-place polyurethane shall serve to bond the outer and inner jackets into one unit.

3.5 Construction. Jugs shall be of sufficiently rigid construction to withstand normal abuse under field conditions. Size A, B, and C jugs shall have an outer jacket and an inner shell in compliance with either of the following constructions, at the manufacturer's option. Size D and E jugs shall comply with construction 1.

Construction 1 - Outer jacket: galvanized steel  
Inner shell: seamless plastic or plastic bonded to galvanized steel.

Construction 2 - Outer jacket: plastic  
Inner shell: seamless plastic

### 3.5.1 Outer jacket.

3.5.1.1 Construction 1. The jacket shall be made of galvanized steel conforming to 3.4.2. The bottom of the outer jacket shall be recessed so that the jug rests on the outside rim to provide maximum stability.

3.5.1.2 Construction 2. The jacket shall be made of plastic conforming to 3.4.3.1 or 3.4.3.5. The bottom of the outer jacket shall be recessed so that the jug has an outer ring to approximate line contact for maximum stability.

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3.5.2 Inner shell. The upper end of the inner shell shall be properly curved to fit snugly over the top of the insulation and the top of the outer jacket. It shall slope away from the opening to prevent drainage into the inner shell contents. The opening of the inner shell shall be large enough to facilitate loading ice into the jug.

3.5.2.1 Construction 1. The inner shell shall be either seamless plastic construction or plastic permanently bonded to a zinc-coated sheet-steel inner shell (3.4.2) of lock-seam construction in accordance with the manufacturer's standard practice.

3.5.2.2 Construction 2. The inner shell shall be of seamless plastic construction with materials conforming to 3.4.3.1 or 3.4.3.5.

3.5.3 Cover. The cover shall be designed for a closure operation which provides a tight seal to keep out dust, retain its position under normal conditions of transportation, and to prevent any temperature loss which would cause the jug to be unable to meet the requirements of 3.6.2.

3.5.3.1 Construction 1. The cover shall be made of galvanized steel conforming to 3.4.2 and lined with plastic conforming to 3.4.3. The cover shall be fitted with a handle or grip for easy removal. It is permissible to furnish an all plastic cover for construction 1 jugs, but such covers must conform to all provisions of 3.5.3.2.

3.5.3.2 Construction 2. The cover shall be made of plastic conforming to 3.4.3.1 or 3.4.3.5. The cover shall be molded with a handle or grip for easy removal.

#### 3.5.4 Thickness of Plastic.

3.5.4.1 Construction 1. The minimum thickness of the inner seamless plastic shell shall be 0.045 inch, except when acrylonitrile-butadiene-styrene (ABS) is used, then the minimum thickness of the plastic shall be 0.035 inch. The minimum thickness of the plastic material bonded to the inner galvanized steel shell shall be 0.004 inch.

3.5.4.2 Construction 2. The plastic material thicknesses shall be as specified in table I.

TABLE I. Plastic thickness (inch, minimum)

Sizes:	A,B,C
Polyethylene	
Inner shell	0.055
Outer jacket and cover	0.045
Acrylonitrile-butadiene-styrene (ABS)	
Inner shell, outer jacket, and cover	0.035

#### 3.5.5 Handles.

3.5.5.1 Construction 1. The handles shall be of a rolled type or similar construction to eliminate sharp edges and provide a comfortable hand grip. Bail-type handles may be provided in lieu of lifting handles for the size A and B jugs at the manufacturer's option; however, when bail-type handles are provided, they shall have a comfortable hand grip mounted so as to rotate freely at the center of the handle. The handles or bail mounts shall be securely welded or riveted to the outer jacket and shall be located diametrically opposite each other.

3.5.5.2 Construction 2. The handles shall either be molded as an integral part of the outer jacket or molded separately and then permanently attached to the outer jacket. Handles shall be located diametrically opposite each other. A carrying handle formed as an integral part of the cover may be substituted for the lifting handles on the size A and B jugs. When provided, the carrying handle shall support the jug filled to capacity in a lifted position without visible deformation or loss of contents.

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3.5.6 Lug, dispenser. All jugs shall have a lug to hold a cup dispenser or a salt tablet dispenser. The lug shall be the standard commercial item for the purpose intended. Construction 1 jugs shall have the lug welded or riveted to the outer jacket. Construction 2 jugs shall have the lug attached permanently in accordance with accepted manufacturing practice.

3.5.7 Faucet. All jugs furnished under this specification shall be provided with a faucet of a design that has been approved by the Public Health Service. Faucet shall be made of plastic conforming to 3.4.3, nylon, corrosion-resisting steel, nickel chromium plated brass, or combinations of these materials. Faucet shall be recessed so as not to protrude beyond the outer jacket or at the option of the manufacturer, may protrude beyond the outer jacket when provided with a faucet guard that does not interfere with the faucet operation.

### 3.6 Performance.

3.6.1 Leakage. When tested in accordance with 4.6.1, the maximum allowable loss in weight shall be one percent.

3.6.2 Insulation integrity. When tested in accordance with 4.6.2, the gain in temperature of the water shall not be more than 20°F.

3.6.3 Capacity. When examined in accordance with 4.6.3, the capacity of jugs shall not be less than the minimum specified in table II.

TABLE II. Capacity (minimum, gallons)

Size	Without cover	With cover inserted
A	2	1.50
B	3	2.25
C	5	4.20
D	10	9.20
E	15	14.00

3.6.4 Drop test. When tested in accordance with 4.4.5, the jugs shall not break, leak, increase in weight, or show evidence that bonded-together sections have become dislodged or separated.

3.7 Marking. Each insulated jug shall be permanently marked with a suitable, positive manufacturer's identification and the rated capacity of the jug in gallons.

3.8 Workmanship. Jugs furnished under this specification shall be clean and free of burrs, rough surfaces, and sharp edges. In addition, jugs shall possess no characteristics or defects which may adversely affect utility, serviceability, appearance, or impede adequate cleaning of the jugs.

## 4. QUALITY ASSURANCE PROVISIONS

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

4.1.1 Certificate of compliance. Where a certificate of compliance is submitted (see 3.4.1), the Government reserves the right to check-test such items to determine the validity of the certification.

4.2 Preproduction sample. Inspection and testing of the preproduction sample shall be made on a completely fabricated item for all applicable provisions of this specification.

4.3 Sampling.

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4.3.1 Lot. Unless otherwise specified (see 6.2), all jugs of the same size and construction offered for acceptance at the same time shall be considered a lot for purposes of inspection, acceptance, and tests.

4.3.2 Sampling for examination. Samples shall be selected at random from each lot in accordance with inspection level II of MIL-STD-105. The Acceptable Quality Level shall be 4.0 percent defective.

4.3.3 Sampling for tests. Samples shall be selected at random from each lot in accordance with inspection level S-2 of MIL-STD-105. The Acceptable Quality Level shall be 4.0 percent defective.

4.4 Examination. Each of the sample jugs selected in accordance with 4.3.2 shall be examined to verify compliance with this specification. Examination shall be conducted as specified in table III. Any jug in the sample containing one or more defects shall be rejected and if the number of defective jugs in any sample exceeds the acceptance number for the sample, the lot represented by the samples shall be rejected.

TABLE III. Examination of end item

Examine	Defect
Jug and cover	Any part malformed, dented, buckled or bent----- Uncoated spots of galvanized finish after forming----- Any sharp burrs, slivers or edges that may cause injury----- Any component missing----- Cover not as specified----- Lug improperly attached----- Faucet not as specified----- Guard interferes with dispensing action of faucet----- Scuffed or abraded area----- Scratch----- Dent----- Crack or fracture----- Chalking----- Pinhole----- Blister----- Wrinkle----- Pit----- Flow mark----- Shrinkage----- Unfilled area----- Chipped----- Presence of mechanical oil, grease, dirt, wood shavings metal chips, or other foreign matter----- Checked-----
Corners and edges	Sharp----- Not "broken" and polished-----
Surfaces and curves	Not blended smoothly-----
Flashline	Not machined or burnished----- Insufficiently ground and burnished-----
Handle	Missing----- Not as specified----- Improperly attached-----
Identification marking	Missing, incomplete, illegible, incorrect-----

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4.5 Inspection of preparation for delivery. An inspection shall be made to determine that the preservation, packaging, packing, and marking comply with the requirements in section 5. Defects shall be scored in accordance with table IV. For examination of interior packaging the sample unit shall be one shipping container fully prepared for delivery, selected at random just prior to the closing operations. Sampling shall be in accordance with MIL-STD-105. Defects of closure listed shall be examined on shipping containers fully prepared for delivery. The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 with an AQL of 4.0 defects per hundred units.

TABLE IV. Examination of preparation for delivery

Examine	Defects
Markings (exterior and interior)	Omitted; incorrect; illegible, improper size, location, sequence, or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping, inadequate stapling. Bulging or distortion of container.

4.6 Tests. Each of the sample jugs selected in accordance with 4.3.3 shall be tested to verify compliance with this specification. Any jugs in the sample failing one or more tests shall be rejected and if the number of rejected jugs in any sample exceeds the acceptance number for that sample, the lot represented by such sample shall be rejected.

4.6.1 Leak test. Weigh the empty finished jug without cover. Fill the jug with cold tap water to three-quarters of the rated capacity. Weigh the jug and contents, then subtract the weight of the jug to obtain the weight of the water. Place the cover tightly on the jug and allow it to stand for a minimum of eight hours. Empty the water into a previously weighed container. Determine the final weight of the water and determine the percentage of loss by the following formula:

$$\text{Percent loss} = \frac{W1 - W2}{W1} \times 100$$

Where: W1 = Original weight of water.  
W2 = Final weight of water.

The percentage of loss shall not exceed the maximum allowable in 3.6.1.

4.6.2 Insulation test. Jugs to be tested shall be maintained at a temperature of 70°F. + 4°F. for a minimum period of 4 hours. One and one-half gallons of water at a temperature of 50°F. + 2°F. shall be added to the jug. The jug, with cover in position, shall then be placed in an environment with the temperature controlled 90°F. + 2°F. At the end of 8 hours of subjection to this environment the temperature of the water shall be determined for compliance with 3.6.2.

4.6.3 Capacity measurement. Using standard laboratory volumetric measures, jugs being tested shall be filled with water to the minimum capacity indicated for the size "with cover inserted" being furnished (see table II). The cover shall then be firmly seated in place. Any overflow observed shall indicate noncompliance with 3.6.3.

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4.6. Drop test. The weight of jugs which are to be subjected to this test are to be determined and recorded. The jugs shall then be filled with water and the cover shall be firmly seated and secured in place. The jugs shall then be dropped five times from a clear height of not less than 37 inches onto a steel base. The jug shall be in an upright and level position for the first drop. A 3-inch cube of wood shall be secured under the bottom edge of the jug to vary the angle of the jug for the remaining four drops. The block shall be moved 90 degrees clockwise after each drop. No guiding or restraining devices shall be attached to or in contact with the jug during the drop. After the fifth drop the jug shall be emptied and weighed. The weight after dropping shall be compared with the weight before dropping and observation shall be made to assure that the jug meets all requirements of 3.6.4.

## 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. Each jug shall be packaged in a close-fitting box conforming to PPP-B-636, class weather resistant. Necessary blocking and cushioning shall be provided within the box to prevent damage during shipment and storage. The boxes shall be closed and sealed in accordance with the appendix to PPP-B-636.

5.1.2 Level B. Each jug shall be packaged in a close-fitting box, conforming to PPP-B-636, class domestic. Necessary blocking and cushioning shall be provided within the box to prevent damage during shipment and storage. The boxes shall be closed in accordance with method II of the appendix to PPP-B-636.

5.1.3 Level C. The jugs shall be packaged to afford protection against corrosion, deterioration, and damage from the supplier to the initial destination. The supplier may use his commercial practice, providing it fulfills these requirements.

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

5.2.1 Level A. Jugs of like description, packaged as specified in 5.1, shall be packed in quantities as specified (see 6.2) in close-fitting boxes conforming to PPP-B-636, class weather-resistant, or to PPP-B-640, class 2. The boxes shall be closed in accordance with the appendix of the applicable box specification. The gross weight of the box shall not exceed the weight limitations of the box specification. Strapping shall be in accordance with the appendix of the applicable box specification.

5.2.2 Level B. Jugs of like description, packaged as specified in 5.1, shall be packed in quantities as specified (see 6.2), in close-fitting boxes conforming to PPP-B-636, class domestic. The box shall be closed in accordance with method II of the appendix to PPP-B-636. The gross weight of the boxes shall not exceed the weight limitations of the applicable box specification.

5.2.3 Level C. The jugs packaged as specified in 5.1, shall be packed to insure carrier acceptance and safe delivery to destination in containers complying with the National Motor Freight Classification rules or the Uniform Freight Classification rules as applicable.

5.3 Marking. In addition to any special markings required by the contract or order, all marking shall be in accordance with 5.3.1 or 5.3.2, as specified (see 6.2).

5.3.1 Civil agencies. All marking shall be in accordance with Fed. Std. No. 123.

5.3.2 Military agencies. All marking shall be in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. The insulated jugs covered by this specification are intended to provide fresh drinking water for groups of workers who do not have ready access to regular municipal or commercial sources.

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) Size required (see 1.2.1).

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- (c) When a preproduction sample is required (see 3.1).
- (d) Size of lot, if different from 4.3.1.
- (e) Required levels of packing and packaging (see 5.1 and 5.2).
- (f) Quantity pack for Level A or B as applicable (see 5.2.1 and 5.2.2).
- (g) Marking required (see 5.3).

MILITARY CUSTODIANS:

Army - GL  
Navy - SA  
Air Force - 84

Review activities:

Army - MD  
Navy - MS

User activity:

Navy - MC

Preparing activity:

GSA-FSS

Civil Agency Coordinating Activities:

GSA-FSS  
VA-DMS

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Orders for this publication are to be placed with the 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 15 cents each.