

PPP-B-1806

**September 28, 1973**SUPERSEDING

Fed. Spec. PPP-B-41B

September 9, 1964 and

Fed. Spec. NN-K-231E

October 13, 1966

## FEDERAL SPECIFICATION

## BARRELS AND KEGS: WOOD SLACK

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 millrun, slack, wood barrels and kegs (see 6.2).

1.2 Classification.

1.2.1 Types. Slack barrels and kegs covered by this specification shall be of the following types, as specified (see 6.2).

Type I - Light Duty barrel.

Type II - Heavy Duty barrel.

Type III - All Duty keg.

1.2.2 Size. Slack barrels and kegs shall be of the sizes specified (see 3.3.2 and 6.2).

## 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:

FF-N-103	- Nails (Small) and Tacks; Cut.
FF-N-105	- Nails, Wire, Brads, and Staples.
QQ-S-781	- Steel, Strapping, Flat.
QQ-S-790	- Steel Strapping, Round (Bare and Zinc-Coated).

FSC 8110

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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, D.C. 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, D.C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Washington.

(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.
- MIL-STD-731 - Quality of Wood Members for Containers and Pallets.

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

LAWS AND REGULATIONS:

49 CFR 178 Code of Federal Regulations:

Department of Transportation Rules and Regulations for Transportation of Explosives and Other Dangerous Articles.

(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, D.C. 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for the 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, D.C. 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, Illinois 60606.)

3. REQUIREMENTS

3.1 Materials.

3.1.1 Wood. Wood shall conform to class 2, of MIL-STD-731, except as herein specified. Species shall be groups I, II, III, or IV. Wood shall be free of knots within two inches of the end of each wood component. Knots, smaller than 3/4-inch diameter, may be permitted. Wood shall be free of unsound knots, holes, slanting shakes longer than 1-1/2 inches, decay, splits, and heavy stain. Moisture content of wood for staves, headings, and cleats shall be not less than 7% nor more than 11% of the dry weight at time of manufacture.

3.1.2 Steel. Steel shall be cooperage grade low carbon, hot rolled, annealed sheet wire or strip hoop. Steel wire gages shall be Birmingham wire gage.

3.1.3 Fasteners.

3.1.3.1 Nails and staples. Nails and staples shall conform to requirements of FF-N-105.

3.1.3.2 Nails, (small) and tacks, cut. Small nails and tacks shall conform to FF-N-103.

3.1.3.3 Rivets. Rivets shall be commercial cooper's rivets.

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3.2 Fabrication. Wood used for wood members shall conform to 3.1.1.

3.2.1 Staves. Staves shall be tongued and grooved or butt-jointed. The thickness of barrel staves shall be specified in table I. The thickness of keg staves shall be a minimum of  $\frac{3}{8}$  inch. Staves shall be not less than 1- $\frac{1}{2}$  wide at the ends nor more than 5 inches wide at the bilge. Depth of croze shall be not less than  $\frac{1}{8}$  nor more than  $\frac{3}{16}$  inch. The croze shall conform to the bevel of the head.

3.2.2 Heads. Heads shall be smooth surfaced on at least one side and shall be turned to the size of a standard head bevel. Heads shall either be cant or one-piece. Cant heads shall be made from separate cants which shall be butt-jointed. One piece heads shall be made from separate cants which shall be tongued and grooved and glued; butt-jointed and glued; or butt-jointed and fastened with a minimum of two corrugated fasteners for each joint. Corrugated fasteners shall be driven on the inner face and shall not penetrate through the head to the outer face. No cant shall be less than 2- $\frac{1}{2}$  inches wide. The number of cants for barrels shall be as specified in table I. For kegs, there shall be no more than 2 cants in any head smaller than 11 inches and no more than 3 cants in any head 11 inches and larger. The thickness of barrel heads shall conform to table I. The thickness of keg heads shall be a minimum of  $\frac{1}{2}$  inch.

TABLE I. Barrel requirements

Net weight of contents (Pounds)	Diameter (Inches)	Heads		Staves		Hoops					Width of Wood Cleats	
		Thick-ness ± 1/16 (Inch)	No. of cants (Maximum)	Length (Inches)	Thick-ness ± 1/16 (Inch)	Metal 2/		Wood			Type I, Barrel (Inches)	Type II, Barrel (Inches)
						Head	Bilge & quarter 1/	Number	Width (Inches)	Thick-ness (Gage)		
To 450	13	1/2	3	21 24	3/8	1-5/8	22	1-3/8	23	6	-	4
451-600	13	5/8	3	21 24	3/8	1-5/8	22	1-3/8	23	6	-	4
601-1000	13	5/8	3	21 24	1/2	1-5/8	21	1-3/8	23	8	-	5
To 450	14	1/2	3	21 24	3/8	1-5/8	22	1-3/8	23	8	-	4
451-600	14	5/8	3	21 24	3/8	1-5/8	22	1-3/8	23	8	-	5
601-1000	14	5/8	3	21 24	1/2	1-5/8	21	1-3/8	23	10	-	5
To 450	15	1/2	3	21 24 28 1/2 30	3/8	1-5/8	22	1-3/8	23	8	-	4

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TABLE I. Barrel requirements (cont'd)

		Heads		Staves		Hoops					Width of Wood Cleats	
						Metal <u>2/</u>		Wood				
Net weight of contents	Diameter	Thick-ness + 1/16	No. of cants	Length	Thick-ness + 1/16	Head		Bilge & quarter <u>1/</u>		Number	Type I, Barrel	Type II, Barrel
						Width	Thick-ness	Thick-ness	Width			
(Pounds)	(Inches)	(Inch)	(Maximum)	(Inches)	(Inch)	(Inches)	(Gage)	(Inches)	(Gage)	(Minimum)	(Inches)	(Inches)
451-600	15	5/8	3	21 24 28-1/2 30	3/8	1-5/8	22	1-3/8	23	8	-	5
601-1000	15	5/8	3	21 24 28-1/2 30	1/2	1-5/8	21	1-3/8	23	10	4	5
To 450	16	1/2 <u>3/</u>	3	24 28-1/2 30	3/8	1-5/8	23	1-3/8	23	8	-	4
451-600	16	5/8	3	24 28-1/2 30	3/8	1-5/8	23	1-3/8	23	10	-	5
601-1000	16	5/8	3	24 28-1/2 30	1/2	1-5/8	22	1-3/8	23	12	4	6

TABLE I. Barrel requirements (cont'd)

Net weight of contents (Pounds)	Heads			Staves		Hoops					Width of Wood Cleats	
	Diameter (Inches)	Thick-ness + 1/16 (Inch)	No. of cants (Maximum)	Length (Inches)	Thick-ness + 1/16 (Inch)	Metal <u>2/</u>		Wood			Type I, Barrel (Inches)	Type II, Barrel (Inches)
						Head	Bilge & quarter <u>1/</u>	Number	Width	Thick-ness		
						Width (Inches)	Thick-ness (Gage)	Width (Inches)	Thick-ness (Gage)	(Minimum)		
To 450	17-1/8	1/2 3/	4	24 28-1/2 30	3/8	1-5/8	23	1-3/8	23	8	-	4
451-600	17-1/8	5/8	4	24 28-1/2 30	3/8	1-5/8	22	1-3/8	23	10	4	5
601-1000	17-1/8	5/8	4	24 28-1/2 30	1/2	1-5/8	21	1-3/8	23	12	5	6
To 450	19-1/8	1/2 3/	5	30	3/8	1-5/8	22	1-3/8	23	8	4	5
451-600	19-1/8	5/8	5	30	3/8	1-5/8	22	1-3/8	23	10	5	5
601-1000	19-1/8	5/8	5	30	1/2	1-5/8	21	1-3/8	23	12	5	6

TABLE I. Barrel requirements (cont'd)

Net weight of contents (Pounds)	Diameter (Inches)	Heads		Staves		Hoops					Width of Wood Cleats	
		Thick-ness ± 1/16 (Inch)	No. of cants (Maximum)	Length (Inches)	Thick-ness ± 1/16 (Inch)	Metal <sup>2/</sup>		Wood			Type I, Barrel (Inches)	Type II, Barrel (Inches)
						Head	Bilge & quarter <sup>1/</sup>	Number	Width (Inches)	Thick-ness (Gage)		
To 450	21	1/2	5	30	3/8	1-5/8	21	2	22	8	4	5
				34								
451-600	21	5/8	5	30	3/8	1-5/8	21	2	22	12	5	5
				34								
601-1000	21	5/8	5	30	1/2	1-5/8	20	2	21	12	5	6
				34								

<sup>1/</sup> Not required when the net weight of contents does not exceed 450 pounds.

<sup>2/</sup> Applied to flat hoops. Beaded head hoops shall be 1-3/8 inches and beaded bilge and quarter hoops 1 inch in width.

<sup>3/</sup> 5/8 inch thickness is required for basswood, cottonwood, spruce, sycamore, and hemlock.

3.2.3 Hoops. Hoops shall be made from wood, flat metal, or wire. Wood hoops shall be used only on barrels as head, bilge or quarter hoops. Metal hoops shall be used on both barrels and kegs for head or bilge hoops and only on barrels for quarter hoops. Wire hoops shall be used on barrels or kegs only as bilge hoops when the net weight of contents does not exceed 250 pounds. All types of hoops shall be formed to fit snugly around the staves.

3.2.3.1 Wood hoops for barrels. The hoops shall be fabricated of elm wood. The minimum sectional dimensions of wood hoops shall be 9/32 by 5/32 by 1-3/8 inches. One end of each hoop shall be tapered edgewise. The other end shall be tapered flatwise. The ends shall be joined with not less than four 13/16 inch clout nails or 18-ounce cooper's tacks, staggered, three 0.0172 inch (15 gage) staples, or any combination thereof.

3.2.3.2 Flat metal hoops. Flat metal hoops shall be fabricated of material conforming to 3.1.2. The minimum width and thickness of metal hoops for barrels, shall be as specified herein and in table I. Metal hoops for kegs shall be not less than 0.025 inch (23 gage) thick and the head hoops shall not be less than 1-3/8 inches wide, bilge hoops not less than 1-1/8 inches wide prior to forming the head. The ends of each hoop shall be joined with two rivets not smaller than 0.177 inch (7 gage) diameter. Rivets shall be located at the center of the width of the hoop, not less than 5/8 inch from the ends, and spaced not less than 1 inch on centers. Rivets shall be flush with the inside of the hoop and the outside head shall be flat. Hoops shall be flared.

3.2.3.3 Wire hoops. Wire hoops shall be fabricated of steel wire conforming to 3.1.2. For barrels, the minimum wire thickness shall be 0.135 inch (10 gage) diameter. For kegs, the minimum wire thickness shall be 0.113 inch (11-1/2 gage) diameter. The ends of each hoop shall be butt-welded or joined with a twisted splice.

3.2.4 Cleats. Cleats shall be made of wood or steel.

3.2.4.1 Wood cleats. Wood cleats shall be 1/2 inch thick and shall be shaped and beveled to fit the chime. Barrels shall have cleats of the dimensions specified in table I. Kegs shall have cleats not less than 3-1/2 inches wide. The tolerance for the width dimensions shall be  $\pm 1/4$  inch.

3.2.4.2 Steel cleats. Steel cleats shall be fabricated from material conforming to 3.1.2. Cleats for barrels shall be not less than 1-7/8 inch wide and 0.0625 inch (16 gage) thick. When specified (see 6.2) kegs shall have cleats not less than 1 inch wide and 0.025 inch (23 gage) thick. Each cleat shall have a central longitudinal bead no shorter than 1 inch less than the diameter of the head. Cleat ends shall be formed to fit over the chime and under the head hoop, extending not less than 7/16 inch beyond the hoop. Steel cleats shall not be used on 21 inch barrels.

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3.2.5 Head liners. Head liners shall be fabricated of elm. Head liners shall have a 3/16 inch by 1/2 inch cross section and shall be of sufficient length to support the ends of the head cants. Liners shall be formed to fit the curve of the chime.

3.3. Assembly. Barrels and kegs shall be assembled using the staves, hoops, and headings, specified herein (see figures 1, 2, and 3 for illustration.) The staves, conforming to 3.2.1, shall be assembled so that the bilge and chime are round and barrels of the same nominal size have approximately the same capacity. The chime shall be not less than 1/2 inch nor more than 5/8 inch from the ends of the staves. The bilge and quarter hoops conforming to 3.2.3, shall be placed around the assembled staves and driven level and tight. The hoops shall be secured at not less than three points with nails, hoop fastener nails, or staples. Flat metal hoops may be secured by piercing the hoop with a triangular punch. If points of the fastenings extend through the staves, the points shall be clinched. Head hoops, conforming to 3.2.3, shall be placed around the assembled staves and the head put in place. The head hoops shall be driven into place level and tight. Head hoops shall be secured with 0.106-inch (12 gage) by 1-1/8 inch (1-1/4 inches for use on barrels with wood hoops) nails, 0.121 inch (11 gage) hoop staples spaced approximately 6 inches, or not less than ten 0.048-inch (18 gage) wire stitches. Fastenings shall pass through hoop and staves into the head so that each head cant shall have not less than two fastenings.

3.3.1 Type I and type II barrels. Type I barrels shall be assembled using hoops conforming to 3.2.3. Type II barrels shall be assembled using flat metal hoops conforming to 3.2.3.2. Wire hoops may be used on type I barrels when the net weight of contents does not exceed 250 pounds. Heads shall conform to 3.2.2. Type II barrels shall have one piece heads.

3.3.1.1 Barrel reinforcement. When specified (see 6.3), barrels shall be reinforced by one or a combination of the following methods.

3.3.1.1.1 Wood cleats. The number of wood cleats specified in table I and conforming to 3.2.4.1 shall be applied outside of and across the grain of the head and fastened with not less than 3 nails 0.080-inch (14 gage) in diameter and not shorter than 1/8 inch less than the combined thickness of head and cleat. The nails shall be staggered in two rows. If the nails extend through the head, the nails shall be clinched flush with the outside surface of the head. The nails shall be spaced so that each head cant shall have at least two nails. Two nails or staples shall be driven through hoop and staves into each end of a cleat. Nails shall be 0.106 inch (12 gage) by 1-1/8 inches (1-3/8 inches for use with wood hoops). Staples shall be 0.121 inch (11 gage).

3.3.1.1.2 Steel cleats. Steel cleats, conforming to 3.2.4.2, shall be applied on the outside of and across the grain of the head and fastened with not less than five 4-penny box nails driven through cleat and head and clinched flush with the outside surface of the head. The nails shall be staggered. Cleat ends shall be bent back on the head hoop. Steel cleats shall not be specified for 21 inch barrels.

3.3.1.1.3 Head liners. Two head liners, conforming to 3.2.5, shall be applied across the grain of each head on opposite sides of the circumference. Each head liner shall cover approximately one-half of the circumference and shall be fastened to the chime with not less than four staples or 2-penny common nails spaced not less than five inches on centers. Head liners shall be applied to all barrels with wooden hoops in which the weight of the contents exceeds 250 pounds.

3.3.1.1.4 Strapping. Strapping shall be not less than 7/8 inch wide and 0.032 inch (21 gage) thick by not less than 6 inches long. Each end shall be punched in not less than 4 places so as to form prong fasteners not less than 3/8 inch long. When specified (see 6.2), one strap shall be applied to each end of a wood cleat by driving the prongs into the cleat. The strap shall then be bent over the chime and head hoop and the prongs driven into the stave.

3.3.2 Type III kegs. Type III kegs shall be assembled using flat metal, or wire hoops conforming to 3.2.3.2, or to 3.2.3.3, as applicable. Heads shall conform to 3.2.2. The size of kegs shall be as specified (see 6.2). Kegs for loads of 200 pounds or less shall have a head diameter within the range of 9-1/4 to 11-1/4 inches and staves within the range of 15 to 19 inches long. Kegs of 200-pound capacity shall have a head diameter of not more than 11-3/4 inches and a stave length within the range of 15 to 21 inches. Kegs for loads of 200 to 250 pounds shall have a head diameter within the range of 12 to 13-5/8 inches and a stave length within the range of 15 to 21 inches.

3.3.2.1 Keg reinforcement. Type III kegs shall be reinforced by one or a combination of the following methods. Keg cleats shall be applied by the keg maker or user as specified (see 6.2).

3.3.2.1.1 Wood cleats. When specified (see 6.2), wood cleats shall be applied on the outside of and across the grain of the head and fastened with not less than 8 cement-coated or chemically-etched nails. Nails shall be 0.080 inch (14 gage) in diameter and not shorter than 1/8 inch less than the combined thickness of head and cleat. The nails shall be staggered in two rows. Nails which extend through the head shall be clinched flush with the outside surface of the head. Two nails or staples shall be driven through hoop and staves into each end of a cleat. Nails shall be 0.106 inch (12 gage) diameter and 1-1/8 inches long; staples shall be 0.121 inch (11 gage) (see figure 1). Alternatively, the wood cleats may completely cover the head (see figure 2).

3.3.2.1.2 Steel cleats. When specified (see 6.2), steel cleats shall be applied on the outside of and across the grain of the head and fastened with no less than one 4-penny box nail driven through each cant and clinched flush with the outside surface of the head. A total of no less than three nails shall be used with each cleat. They shall be staggered. Cleat ends shall be bent back on the head hoop. If the weight of contents is 200 pounds or more and steel cleats are specified, two cleats shall be applied at right angles on each head.

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3.3.2.1.3 Strapping of kegs. When specified (see 6.2), kegs with wood cleats shall be reinforced by two tension tied flat or round wire steel straps running lengthwise at right angles to each other around the kegs, centered over the cleats, and stapled at intervals of not less than 6 inches (see figures 1 and 2). Staples shall be cement-coated not less than 0.0800 inch in diameter (14 gage). Flat steel strapping shall be treated to prevent rust and shall conform to the requirements for type I of QQ-S-781; round steel strapping shall be zinc-coated conforming to the requirements for class A or class B of QQ-S-790 as shown in table II.

TABLE II. Keg strapping requirements

Net weight of contents	Flat strapping		Round strapping (diameter)	
	Width	Thickness	Class A	Class B
Pounds	Inch	Inch	Inch	Inch
Up to 175	5/8	0.020	0.0800 (14 gage)	0.0915 (13 gage)
176 to 250	5/8	.023	.0915 (13 gage)	.1055 (12 gage)

3.4 Workmanship. Barrels and kegs shall be free of splinters, burrs, sharp edges and torn grain more than 1/16-inch deep.

3.5 Marking for identification. Marking on each barrel and keg to be applied by the maker, on the top head as follows:

- a. When specified (see 6.2), barrels or kegs procured for use in packing regulated commodities and meeting the requirements of Department of Transportation shall be marked in accordance with DoT regulations.
- b. Barrels and kegs procured by the Government shall be marked also with a "US" and "PPP-B-1806".
- c. When specified (see 6.2), barrels used or procured for packing non-regulated commodities shall be marked with the name or symbol (letters) of the maker.
- d. Size of marking (minimum) 3/4 inch high for head diameters over 17 inches and 1/2 inch for all others.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein,

unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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

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

4.2.2 Intermediate testing of components and materials. Tests shall be performed on representative samples selected from each lot or batch of staves, headings, cleats, head liners, or hoops used in the fabrication of the end item, to determine moisture content as specified in 3.1.1. Testing shall be performed in accordance with the requirements of MIL-STD-731. The sample unit shall be one stave, heading, cleat, head liner, or hoop, and the sample size shall be five. When tested by the moisture meter method, the average of 3 determinations taken on each component shall represent the moisture content for the component. The average of all tests performed shall not be more or less than the specified limits.

#### 4.3 Inspection of the end item.

4.3:1 Visual examination. Barrels and kegs shall be examined for the defects listed in table III. The sample unit shall be one barrel or keg and lot size shall be expressed in number of sample units. The inspection level shall be S-2 and the acceptable quality level (AQLs) shall be 6.0, expressed in terms of defects per hundred units.

TABLE III. Visual examination

Examine	Defect
Wood	Not material specified. Knot within two inches of end of piece. Unsound knots, holes, decay, splits, or stains.
Croze	Bevel differs from that of head.
Head	Surface not smooth one side.
Cants	For barrels, number of cants in any head more than specified (see table I). For kegs more than 2 cants in kegs smaller than 11 inches in diameter or more than 3 cants in kegs larger than 11 inches in diameter. Not turned to standard head bevel.

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TABLE III. Visual examination (cont'd)

Examine	Defect
Wood cleats (when specified)	Shape and bevel do not fit chime. Not applied on outside across grain of head. Nails or staples not size specified. Nails not clinched or embedded in wood. Strapping not as specified.
Steel cleats (when specified)	Not material specified (see 3.1.2). Cleats not bent back over head hoop. Cleats not beaded as specified. Not applied on outside across grain of head. Size of nail less than specified and not clinched. Not formed to fit over chime and under head hoop. Less than three nails per cleat. Nails not staggered. Cleats not at right angles to each other when two cleats are required.
Head liners (when specified)	Not material specified (see 3.2.5). Not applied and secured as specified.
Hoops	Not material specified. Ends not joined as specified. Not flared or loose as specified. Wire hoops used for other than bilge hoops. Rivets (when specified) wrong size, not located on joint, not flat head and flush inside hoop, as specified. Cracks, tears, sharp edges. Not secured as specified. Not beaded or rolled edge, as specified. Fastenings piercing staves, not clinched.
Strap	Not material specified.
Assembly of barrel or keg	Not round. Hoops not level, loose. Less than three fastenings for each bilge hoop.

TABLE III. Visual examination (cont'd)

Examine	Defect
Workmanship	Nails or staples not size specified. Splinters, burrs, or sharp edges. Torn grain more than 1/16 inch deep.
Marking	Omitted; incomplete, incorrect, illegible, of improper size, location, sequence, or method of application.

4.3.2 Dimensional examination. Examination shall be made of the end item to determine compliance with dimensional requirements. Any dimension that is not within the specified requirements shall be classified as a defect. The inspection level shall be S-2 with an AQL of 6.0, expressed in terms of defects per hundred units.

4.4 Examination of preparation for delivery. An examination shall be made to determine that packing and marking comply with the requirements of section 5. The sample unit for this examination shall be one container prepared for delivery.

## 5. PREPARATION FOR DELIVERY

5.1 Packing. Empty kegs, heads, and cleats shall be packed to afford adequate protection against damage during direct shipment from the supply source to the first receiving activity. Containers and packing shall comply with Uniform Freight Classification Rules, or National Motor Freight Classification Rules, as applicable.

5.2 Marking. In addition to any special marking required by the contract or order, marking shall be as specified.

5.2.1 Civil agencies. Marking shall be in accordance with **Fed. Std. No. 123**.

5.2.2 Military requirements. Marking shall be in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. Slack barrels and kegs covered by this specification are intended for the shipment of commodities, such as nails, bolts, nuts, bulk solids, and dry powdered materials. Type I barrels are intended for shipping, handling, and storage under normal conditions, where the additional strength of the type II barrel is not required. Type II barrels are intended for rigorous shipment

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conditions including, repeated handling, unprotected storage and extreme climatic conditions. Type II barrels meet the requirements for overseas shipments. Type III kegs are intended for similar use as the above types but are for loads of 250 pounds or less.

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

- a. Title, number, and date of this specification.
- b. Type of barrels or kegs required (see 1.2.1).
- c. Weight of contents, head diameter, and stave length (see 1.2.2 and table I).
- d. When kegs require cleats less than 1 inch wide and 0.025 inch (23 gage) thick (see 3.2.4.2).
- e. When strapping is required (see 3.3.1.1.4 and 3.3.2.1.3).
- f. Cleats for kegs if required, stating kind and whether to be shipped separately or attached to heads (see 3.3.2.1, 3.3.2.1.1, 3.3.2.1.2 and 3.3.2.1.3).
- g. When barrels or kegs require DoT or other markings (see 3.5 and 5.2).
- h. When bag liner is required (see 30.5).

6.3 Definitions. Definitions of applicable terms other than the following are in accordance with **Fed. Std. No. 75**

6.3.1 Standard head bevel. The slanting sides of equal length that come to a point on the perimeter of the circled headings.

6.3.2 Slack barrel. A slack barrel is a round, bulging, coopered, wooden container with sides consisting of staves and ends of round, flat heads, the staves and the heads being held together with hoops. It is so constructed that its joints are not tight to the passage of liquids.

6.3.3 Slack keg. Slack keg is a barrel with staves shorter than 24 inches.

6.4 Supersession data. Type I and type II barrels of this specification were formerly type I and type II of PPP-B-41B, respectively. Type III of this specification was formerly covered by NN-K-231E.

Custodians:

Army - GL  
Navy - SA  
Air Force - 69

Review activities:

Army - SM  
Navy - AS  
Air Force - 71

User activities:

Navy - OS  
Air Force - 80

Preparing activity:

Army - GL

Civil Agency Interest:

GSA - FSS

Project No. 8110-0157

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## APPENDIX

REQUIREMENTS FOR OPENING, FILLING, AND CLOSURE OF EMPTY SLACK  
BARRELS AND KEGS AND APPLICATION OF BAG LINERS

## 10. SCOPE

10.1 Scope. This appendix covers requirements for opening, filling, and closing of slack barrels and kegs and application of bag liners.

## 20. APPLICABLE DOCUMENTS

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

## Federal Specification:

PPP-B-26 - Bag, Plastic, Polyethylene

(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, D.C. 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, D.C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Washington.

(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.)

## 30. REQUIREMENTS FOR OPENING, FILLING, AND CLOSURE

30.1 Opening. Release the top head hoop by tapping gently upward with a hammer until about half the hoop is above the edge of the chime. This will loosen the staves so that a light blow on one side of the head will drop it to

the bottom and the head can be removed. Drive the hoop down again level with the chime. If a hickory catch ring is available, it can be driven down below the head hoop to take the place of the head hoop, which can then be removed entirely.

30.2 Filling. Slack barrels and kegs shall be loaded to full capacity, by agitation when applicable, during filling operation to insure a minimum shifting of the contents in transit. Filler material should be used to assure complete filling.

30.3 Closing. After the barrel or keg is filled and the bag liner (if required, see 30.5) tied, replace the head, taking care that the liner is clear of the croze so that the head will not pinch or puncture the liner. Drive the head hoop upward about half its width, to release the staves. Place one edge of the head in croze and press or tap down lightly with a hammer until the head is seated in croze all around. As the head slides into place, keep tapping top hoop with hammer gently around the barrel or keg. Avoid driving hoop down tightly at any one place, but endeavor to bring it down evenly all around the circumference. When the head hoop is driven tight, be sure the head is firmly secured. Nail or staple the hoops and head as specified in 3.3.

30.4 Reinforcement. Reinforcement shall be applied as specified in 3.3.1.1, or 3.3.2.1.

30.5 Application of bag liners. Slack barrels or kegs shall be provided with a separate bag liner to protect contents when specified (see 6.2). The barrel or keg shall be fitted with a nominal 0.003 inch polyethylene bag conforming to type I or II, grade A, style 1 or 2 of PPP-B-26. Bags shall be of sufficient size to fully fit interior of barrel or keg and have adequate height to allow for closure. Bag liner shall be inserted to prevent pinching and puncturing of liner. Excess air within the bag shall be expelled before closure.

30.6 Marking. Marking shall be in accordance with the requirements of MIL-STD-129.

#### 40. QUALITY ASSURANCE PROVISIONS

40.1 Inspection. Barrels or kegs shall be examined for the defects in table IV to determine compliance with the requirements of this appendix. Sampling shall be conducted in accordance with the provisions of MIL-STD-105. The sample unit shall be one filled and closed barrel or keg. The lot size

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for determining the sample size shall be all filled barrels or kegs offered for inspection at one time. The inspection level shall be S-3. The acceptable quality level (AQL), shall be 2.5 for major defects and 10.0 for total defects expressed in defects per hundred units.

TABLE IV. Examination of filled barrels and kegs

Examine	Defect	Classification	
		Major	Minor
Condition of barrel or keg	Broken or fractured wooden component	X	
Filling	Not loaded to full capacity		X
	Filler material missing when applicable to assure complete fill		X
Bag liner (when applicable)	Bag liner missing	X	
	Bag liner does not fully fit interior of barrel	X	
	Bag liner not sufficient height for closure	X	
	Bag liner pinched or punctured	X	
Closure	Head not seated in croze entirely around the barrel or keg	X	
	Head not firmly secured in place	X	
	Top hoop not driven tight or evenly around circumference		X
Marking	Item nomenclature missing, incorrect or illegible	X	
	Marked net weight does not conform to weight limitations of the applicable specification		X
	Other information missing, incorrect or illegible		X

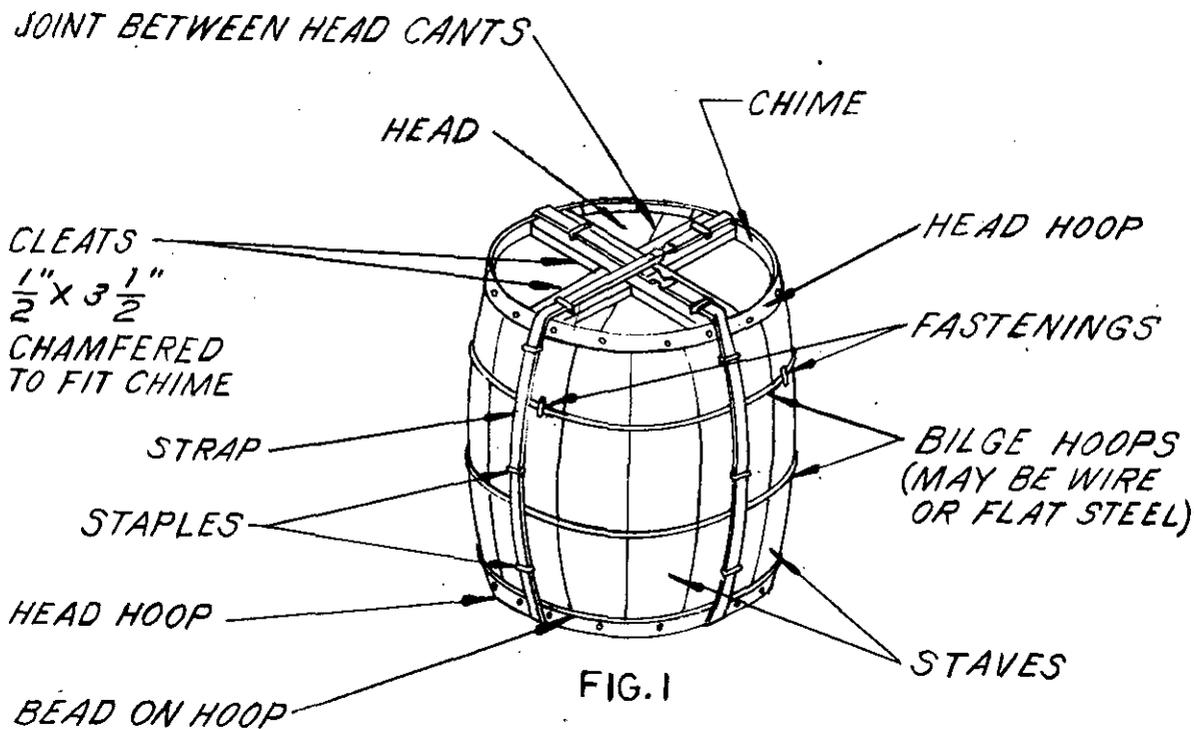


FIG. 1  
TYPE III, ALL DUTY KEG  
(SEE 3.3)

SOLID WOOD CLEATS  
CHAMFERED TO FIT  
AND COMPLETELY  
FILL CHIME.  
LAY AT RIGHT  
ANGLES TO GRAIN  
OF HEAD.

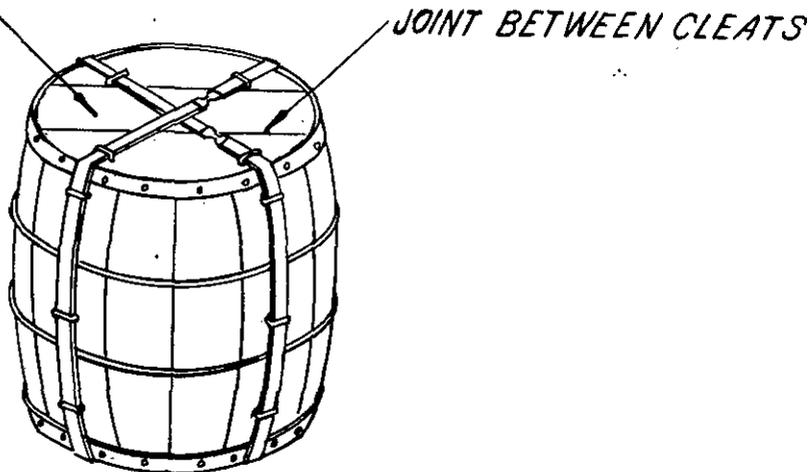
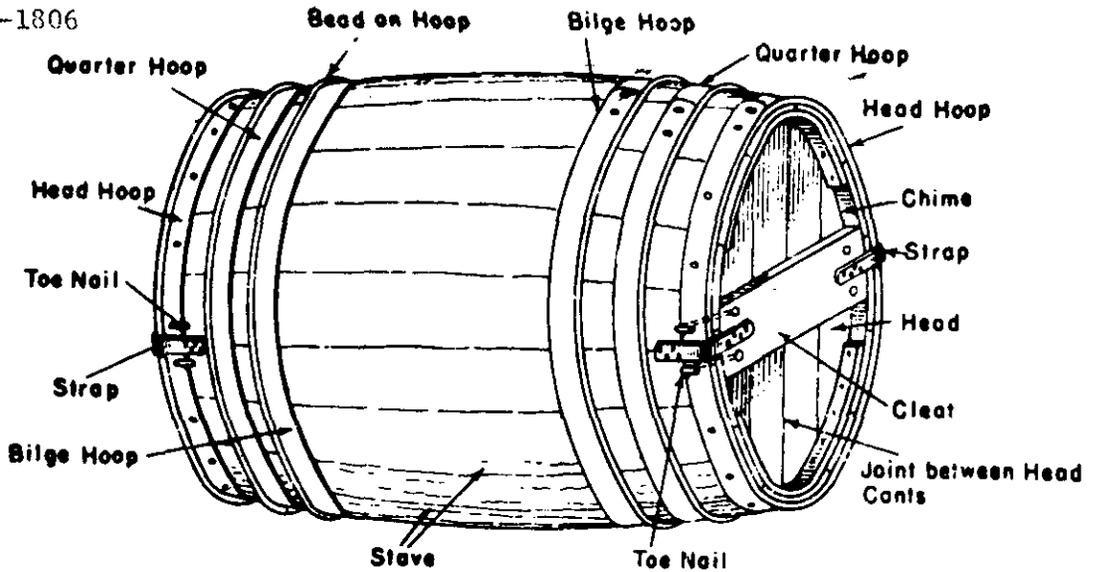
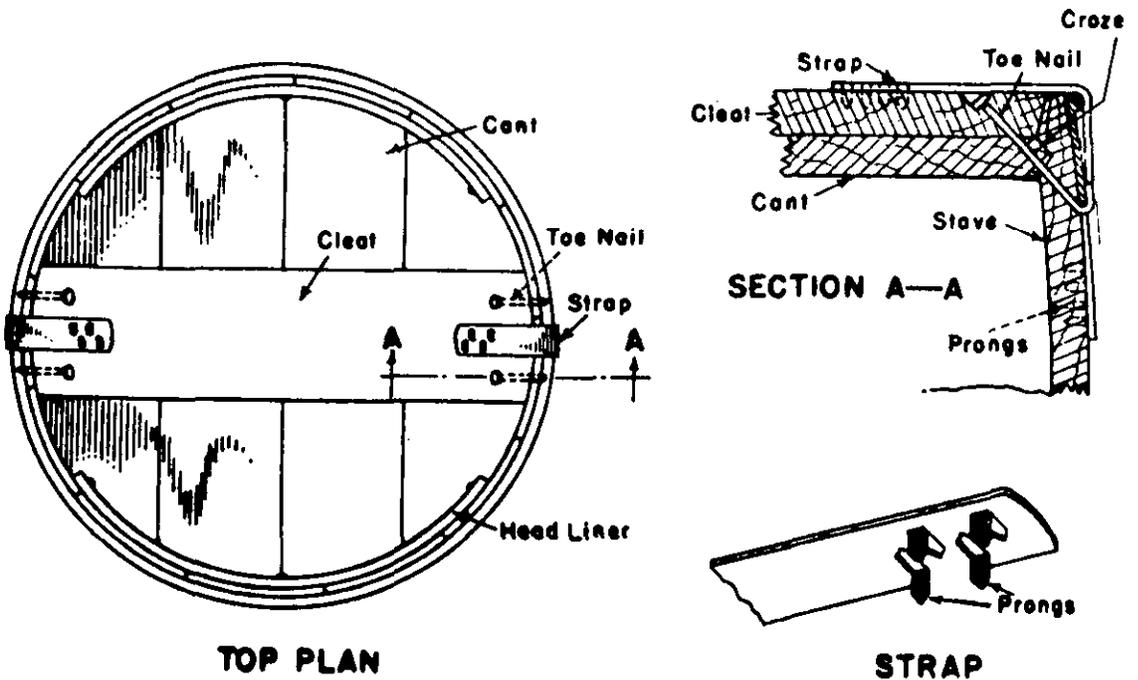


FIG. 2  
TYPE III, ALL DUTY KEG  
(SEE 3.3)

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**PERSPECTIVE**



**FIGURE 3**  
**TYPE I AND II BARRELS (SEE 3.3)**

## SPECIFICATION ANALYSIS SHEET

Form Approved  
Budget Bureau No. 22-R255

**INSTRUCTIONS:** This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.

## SPECIFICATION

PPP-B-1806 BARRELS AND KEGS: WOOD SLACK

## ORGANIZATION

## CITY AND STATE

## CONTRACT NUMBER

## MATERIAL PROCURED UNDER A

 DIRECT GOVERNMENT CONTRACT       SUBCONTRACT

## 1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

## 2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

## 3. IS THE SPECIFICATION RESTRICTIVE?

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

## 4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)

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

DATE