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INCH-POUND

MIL-L-81561G(AS)
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SUPERSEDING
MIL-L-81561F(AS)
21 April 1993

MILITARY SPECIFICATION

LIFE PRESERVER ASSEMBLIES, INFLATABLE, AIRCREWMEN AND PASSENGER, CEMENTED AND HEAT SEALED

This specification is approved for use by the Naval Air Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers requirements for inflatable life preservers used by aircrewmen and passengers. Specific requirements for the individual life preserver assemblies are contained in the applicable detail specifications.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement' thereto, cited in the solicitation (see 6.2b).

SPECIFICATIONS

FEDERAL

UU-P-268 Paper, Kraft, Wrapping

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code SR3, Hiqhway 547, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Proposal (DD Form 1426) appearing at the end of this document or by letter.

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SPECIFICATIONS (Continued)

FEDERAL

PPP-B-636	Boxes, Shipping, Fiberboard
PPP-T-76	Tape, Packaging (For Carton sealing)

MILITARY

MIL-P-116	Preservation, Methods of

(See supplement 1 for list of associated specifications.)

STANDARDS

MILITARY

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the DODSSP-Customer Service Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and Publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS

NAVAL AIR SYSTEMS COMMAND

(Refer to applicable specification sheets)

(Copies of drawings required by manufacturers in connection with specific acquisition functions should be obtained from, or as directed by, the contracting officers.)

2.2 Non-Government publications. The following document forms a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified,

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the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2b).

NATIONAL MOTOR FREIGHT ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Application for copies should be addressed to the National Motor Freight Traffic, Tariff Department, 1616 P Street, N.W., Washington, DC 20036.)

(Non-government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern. In the event of any conflict between requirements of this specification, detail specifications, and applicable drawings, the applicable drawings shall govern.

3.2 Qualification. The life preservers furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list (QPL) at the time of award of contract (see 4.3 and 6.5). In addition, the retention of the listing of qualified life preservers on the applicable QPL shall be dependent on periodic verification of continued compliance with the requirements of this specification and applicable specification sheets (see 4.3.2).

3.3 First article. When specified (see 6.2f), a sample shall be subjected to first article inspection (see 6.6) in accordance with 4.4.

3.4 Materials and components. The materials and components, except for the metallic parts (excluding the carbon dioxide cylinders when required), used in the construction of the life preservers shall have been manufactured not earlier than eighteen months (see 6.2k and 6.3) prior to the date of delivery of the life preservers.

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3.5 Design and construction. The design and construction of the life preservers shall be in accordance with the applicable drawings listed in the applicable specification sheet.

3.5.1 Patterns. When patterns are required-(see applicable specification sheet), they shall be cut in strict accordance with the applicable pattern drawings. The patterns shall not be altered in any manner and shall be used for making working patterns which shall be identical to the Government furnished pattern drawings (see 6.4).

3.5.2 Talc. When talc is used, it shall be certified by the manufacturer to be asbestos-free (see 6.2m).

3.5.3 Adhesive. Adhesive, when used in the construction of the life preservers and attachment of the components to the life preservers, shall be in accordance with applicable drawing requirements. Old, partially congealed, or partially polymerized adhesive shall not be used. Adhesive containers to be refilled shall be free of congealed or partially polymerized adhesive prior to refilling. Regardless of age or condition of the batch of adhesive in use during a work shift, a fresh batch shall be substituted at the start of the next shift (see 4.5.1.1.1).

3.5.4 Seams and stitching. Seams and stitching shall conform to applicable drawing requirements. No stitching shall pass through any inflatable compartment. Sewing shall be used only in the construction of accessory parts and not in their final attachment to the life preserver. Thread tension shall be maintained so that there will not be any loose or overly tight stitching, and the lock will be embedded in the materials sewn together. No seam shall be twisted, puckered, or pleated, and no portion of the accessory parts shall be caught in an unrelated seam. All seam edges shall be properly forced out and shall not contain any folds. No cut end of the tapes binding the edges shall be visible.

3.5.5 Color. The color of the life preservers and its components shall conform to applicable drawing requirements.

3.6 Markings. Markings shall be in accordance with MIL-STD-130. The ink, color, size, and locations shall be as specified on the applicable drawings. Letters and numerals 1/4 inch or less in height shall not be stenciled. The markings shall be thoroughly dry prior to packing. The date of manufacture and serial number may be marked by rubber stamping.

3.6.1 Serial numbers. The preservers shall be identified by individual serial numbers which shall be assigned by the manufacturer. Serialization shall be by a block of consecutive numbers to cover the entire acquisition quantity.

3.7 Visual. dimensional. and Packaging examinations.

3.7.1 “Visual. When visually examined as specified in 4.7.1.1, the

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preservers shall conform to the requirements of this specification and applicable drawings. The classification of defects for visual examination of the life preserver (Table IV) shall be used to classify the defects found. .

3.7.2 Dimensional. When dimensionally examined as specified in 4.7.1.2, the preservers shall conform to the requirements of this specification and applicable drawings. The list of defects for dimensional examination of the life preserver (Table V) shall be used to enumerate the defects found.

3.7.3 Packaging. When examined as specified in 4.7.1.3, the preservation, packing, and markings shall conform to the requirements of this specification (see section 5). The list of defects in Table VI shall be used to enumerate the defects found.

3.8 Performance inspections.

3.8.1 Weight. When inspected as specified in 4.7.2, the weight of the life preservers shall conform to the applicable specification sheet requirements.

3.8.2 Operation [carbon dioxide).

3.8.2.1 Unpacked condition When tested as specified in 4.7.3.1, design shape shall be attained within 30 seconds. There shall be no leakage of carbon dioxide; no hindrance to the flow of the carbon dioxide; or evidence of materials or construction failure in any respect. The seams or attachments shall not pucker when the compartments are inflated or deflated.

3.8.2.2 Packed condition. When tested as specified in 4.7.3.2, the safety thread shall break; the nylon retaining pins shall pull out of the retaining loops; the casing shall open fully; and each compartment shall inflate without any restrictions to design shape within 30 seconds. There shall be no leakage of carbon dioxide, no hindrance to the flow of the carbon dioxide, nor evidence of material or constructional failure in any respect. The seams or attachments shall not pucker when the compartments are inflated or deflated.

3.8.3 Buoyancy. When inspected as specified in 4.7.4, the life preserver shall support a steel weight conforming to the applicable specification sheet requirements, without the entire life preserver sinking below the surface of the water. Upon completion of the buoyancy inspection, each compartment shall be completely deflated through the respective oral inflation assemblies. During the deflation, the oral inflation assembly shall be checked for operation without difficulty, restriction of gas flow, positive shut-off, and integrity.

3.8.4 Pressure. When inspected as specified in 4.7.5, the pressure in each compartment shall be not less than 4.5 pounds per square inch gage (psig). All the seams, sealed areas, and attachments shall remain perfectly

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intact and shall show no indication of separation. There shall be no evidence of constructional or material failure in any respect. The seams or attachments shall not pucker when the compartments are inflated or deflated.

3.8.5 Fatigue. When inspected as specified in 4.7.6, the pressure in each compartment shall hold steady at 3.5 pounds per square inch gage (psig) minimum. All the seams, sealed areas and attachments shall remain perfectly intact, and shall show no indication of separation. There shall be no evidence of constructional or material failure in any respect. The seams or attachments shall not pucker when the compartments are inflated or deflated.

3.8.6 Leakage. When inspected as specified in 4.7.7, the pressure in each compartment shall be no less than 1.60 psig. All seams, sealed areas, and attachments shall remain perfectly intact, and shall show no indication of separation. There shall be no evidence of constructional or material failure in any respect. The seams or attachments shall not pucker when the compartments are inflated or deflated.

3.8.7 Burst. When inspected as specified in 4.7.8, each compartment shall rupture at 9.0 psig or higher.

3.9 Workmanship. After completion of the final assembly, the life preservers shall be thoroughly cleaned and all loose thread, lint, and foreign matter shall be removed. The grommets and snap fasteners shall be clinched, without distortion, damage, splitting, or cutting of the cloth. The metal components shall not be misaligned nor contain any sharp edge, crack, nick, burr, or sliver. The life preservers shall not contain any non-specified hole, abraded area, tear, cut, mend, or needle chew. The life preservers shall be uniform in quality and shall be free from irregularities or defects which could adversely affect performance, reliability, or durability. The life preservers shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the acceptance criteria specified herein.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor 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 this specification, where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor’s overall inspection

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system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection as part of manufacturing operations, is an acceptable practice--to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Qualification inspection (see 4.3).

b. First article inspection (see 4.4).

c. Quality conformance inspection (see 4.5).

d. Quality conformance verification inspection (see 4.5.1.3).

4.3 Qualification inspection. The qualification inspection of the life preservers shall consist of all the examinations and tests specified in Table I and applicable specification sheets. The examinations and tests shall be performed in the sequence listed.

4.3.1 Qualification samples. The qualification samples shall consist of:

a. Three life preservers of the type for which qualification has been requested and authorized (see 6.5).

b. For Types LPU-21D/P, LPU-23C/P, and LPU-32/P, there shall be a letter of certification stating the type bonding method (heating principles) used in construction (see 6.3).

c. A letter of certification that the talc used in the manufacturing process is asbestos-free (see 3.5.2 and 6.3).

Samples shall be forwarded as specified in the correspondence authorizing submission of samples for qualification testing (see 6.5). Additionally, each sample shall be plainly identified by securely attached durable tags containing the following information:

Qualification Inspection Samples

Life Preservers, Inflatable, Type (as applicable)

Manufacturer's Designation

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Name of Manufacturer, including Manufacturer's CAGE Number

Submitted by (name) or (date) for qualification inspection in . accordance with the requirements of MIL-L-81561 (Applicable Revision and any Amendment Number) under Authorization (reference authorizing letter and number (see 6.5).

4.3.2 Retention of Qualified products listing (QPL). The retention of qualification listings shall consist of verification every two years for each type to determine compliance of the listed item with requirements of this and applicable specification sheets (see 3.2). Verification shall be by manufacturer's certification unless otherwise specified by the activity responsible for the QPL.

4.4 First article inspection. First article inspection shall consist of all examinations and tests specified in Table II and applicable specification sheets. The examinations and tests shall be performed in the sequence listed.

4.4.1 First article samples. Unless otherwise specified in the contract, as soon as practicable after award of the contract or purchase order, the manufacturer shall submit three life preservers of the type specified in the acquisition document, for first article inspection (see 6.6). The samples shall be representative of the construction, workmanship, components, and materials to be used during production (see 6.2f). Approval of the first article samples, or the waiving of the first article inspection, shall not relieve the contractor from complying with all requirements of this specification. The first article samples shall be forwarded as specified in the contract or purchase order (see 6.2g).

4.4.2 First article sample approval. Upon completion of the first article inspection program (see 6.3), recommendations and comments pertinent for use in monitoring production will be forwarded by the Government activity (see 6.2g) responsible for the inspection program to the contracting officer.

4.5 Quality conformance inspection. Sampling plans shall conform to MIL-STD-105, as applicable. The quality conformance inspection shall consist of the following:

a. Weight of the life preservers

b. Visual examination of the life preservers

c. Operation (carbon dioxide)

d. Pressure

e. Leakage

f. Dimensional check of the life preservers

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g. Packaging

4.5.1 Sampling.

4.5.1.1 Inspection lot.

4.5.1.1.1 Adhesive. An inspection lot size shall be expressed in units of one batch of the adhesive. An inspection lot shall consist of all the batches of the adhesive used by the life preserver manufacturer during one day's production of the life preservers.

4.5.1.1.2 Life preservers. An inspection lot size shall be expressed in units of one life preserver made essentially under the same conditions and from the same materials and components. The sample unit shall be one life preserver.

4.5.1.1.2 Packaging. An inspection lot size shall be expressed in units of one fully prepared shipping container containing life preservers, fully prepared for delivery using essentially the same materials and components. The sample unit shall be one shipping container, containing life preservers, fully prepared for delivery with the exception that it need not be sealed.

4.5.1.2 Sampling for tests and examination. The sampling size, acceptance criteria, tests, and examinations required for the components, the life preservers, or the packaging shall be as specified in Table III and applicable specification sheets.

4.5.1.3 Qualiy conformance verification inspection. Upon completion of the tests and examinations specified in 4.5.1.2, a random sample shall be selected from each lot in accordance with MIL-STD-105, Inspection Level S-3, (see 6.21). The sample size shall be based only on the applicable sample size code letter corresponding to the Inspection Level S-3. Each life preserver selected as a sample unit shall be identified by its assigned serial number (see 3.6.1), and shall be forwarded to the Government laboratory specified in the procurement document (see 6.2h), for the following tests and examinations (listed sequence mandatory):

TESTS AND EXAMINATIONS

WEIGHT	(4.7.2)
OPERATION (CARBON DIOXIDE)	(4.7.3)
PRESSURE	(4.7.5)
LEAKAGE	(4.7.7)
VISUAL EXAMINATION	(4.7.1.1)
DIMENSIONAL CHECK	(4.7.1.2)

The serial numbers of the units in the lot, represented by the sample units, shall be furnished to the Government laboratory. The Government activity responsible for conducting the inspection program (see 6.2h) shall report the

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results of tests and examinations to the contracting officer. Final acceptance of the lot from which the sample units were selected shall be based upon successful completion of the inspection program by the cognizant Government Quality Assurance representative/specialist who shall apply the applicable acceptance criteria specified in Table III and applicable specification sheet.

4.6 Inspection conditions.

4.6.1 Atmospheric conditions. Unless otherwise specified in the contract, all inspections required by this specification shall be conducted at a barometric pressure of 28 to 32 inches of mercury and at a temperature of 77 ± 18°F (25 ± 10°C). If the final values of the ambient temperature or barometric pressure at the end of the four-hour air pressure inspection are different from the initial values recorded at the start of the inspection, the following corrections should be made to the final pressure readings in psig.

4.6.1.1 Temperature correction. For each degree Fahrenheit rise in temperature, 0.031 psig shall be subtracted from the final pressure reading. For each degree Fahrenheit drop in temperature, 0.031 psig shall be added to the final pressure reading. The corresponding correction per degree Celsius is 0.056 psig.

4.6.1.2 Barometric Pressure correction. For each 0.1 inch of mercury rise in barometric pressure, 0.049 psig shall be added to the final temperature-corrected pressure reading. For each 0.1 inch of mercury drop in barometric pressure,0.049 psig shall be subtracted from the final temperature-corrected pressure reading.

4.6.1.2.1 Pressure measurement. The pressure shall be measured by means of a mercury manometer or a low pressure gauge calibrated in tenths psig or fifths inches of mercury. Inches of mercury can be converted to psig by multiplying the inches of mercury by 0.49.

4.6.2 Inspection area and equipment. The area in which the preservers are inspected shall be adequately protected to preclude damage to the units. The area and inspection equipment shall be free of sharp or rough edges, burrs, protrusions, etc., which will cut, tear, or damage the life preservers or their components.

4.6.3 Air. When use of air is specified in an inspection, the air shall not contain any oil or condensed water vapor.

4.7 Inspection methods.

4.7.1 Visual. dimensional. packaging.

4.7.1.1 Visual. Every preserver shall be visually examined for defects to determine conformance to the requirements of 3.7.1.

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4.7.1.2 Dimensional. Every preserver shall be dimensionally examined to determine conformance to the requirements of 3.7.2.

4.7.1.3 Packaging. Each of the fully prepared shipping containers, " containing life preservers, selected as a sample unit from the lot, shall be visually examined to determine that the preservation, packing, and markings conform to the requirements of 3.7.3.

4.7.2 Weight. Unless otherwise specified in the specification sheet, the weight of the life preservers (casing and pouches attached) including the carbon dioxide filled cylinders, shall be determined on a scale capable of weighing to the nearest 0.01 pound, and shall conform to the requirements of 3.8.1.

4.7.3 Operation (carbon dioxide).

4.7.3.1 Unpacked condition. Unless otherwise specified (see 4.7.3.2) in the applicable specification sheet, the hook and pile tapes shall be separated, the release pins disengaged, and the life preserver shall be spread out and placed in a flat condition on a table in the inspection area (see 4.6.2). The individual compartments shall be inflated by pulling the beaded handles to actuate the carbon dioxide cylinders and the preserver shall be observed for conformance to the requirements of 3.8.2.1. The use of inflation assemblies solely for inspection purposes is prohibited. Test carbon dioxide cylinders (refilled cylinders) may be used for this test provided they conform to applicable drawing and specification requirements. If used, all test cylinders shall be clearly and permanently marked to be readily identifiable as such. Upon completion of this test and examination, the buoyancy inspection (4.7.4), if required, shall be performed when the preserver is inflated with carbon dioxide. Upon completion of this test and examination or the buoyancy inspection, if required, the preserver compartments shall be completely deflated through their oral inflation assemblies, in preparation for the pressure inspection (4.7.5). During the deflation the oral inflation assembly values shall be depressed and released not less than three times and observed for conformance to the requirements of 3.8.3.

4.7.3.2 Packed condition. Unless otherwise specified, when performing first article, quality conformance verification inspections and when required by Table III, footnote 5/, the preserver shall be packed within its casing and safety tied in accordance with applicable drawing requirements. The individual compartments shall be inflated by pulling the beaded handles to actuate the carbon dioxide cylinders and the preserver shall be observed for conformance to 3.8.2.2. The use of inflation assemblies solely for inspection purposes is prohibited. Test carbon dioxide cylinders (refilled cylinders) may be used for this test provided they conform to applicable drawing and specification requirements. Additionally, if used, all test cylinders shall be clearly and permanently marked to be readily identifiable as such. Upon completion of this test and examination, the buoyancy inspection (4.7.4) if required, shall be performed while the preserver is inflated with carbon dioxide. Upon completion of this test or the buoyancy inspection, if

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required, the preserver compartments shall be completely deflated through their oral inflation assemblies in preparation for the pressure inspection (see 4.7.5). Deflation shall be accomplished through the respective oral inflation assemblies. During the deflation, the oral inflation valves shall be depressed and released not less than three times and observed for conformance to 3.8.3.

4.7.4 Buoyancy. The buoyancy inspection, when required, shall be conducted in conjunction with the operation (carbon dioxide) inspection while the life preservers are still inflated with the carbon dioxide (see 4.7.3.). The inflated life preserver shall be attached to a steel weight as specified in the applicable specification sheets, and placed in clean, fresh water having a temperature of 73 ± 5°F (23 ± 3°C). The preserver shall be inspected for compliance to the requirements of 3.8.3. Upon completion of this inspection, the preserver shall be completely deflated and dried without the application of heat.

4.7.5 Pressure. The carbon dioxide cylinders shall be removed during this inspection. Inflate both compartments with air (see 4.6.3) through the respective oral inflation assemblies to a pressure of 5.0 psig. The air shall be securely shut off and after not less than 10 minutes, the pressure shall be checked and readjusted to the original pressure of 5.0 psig. After not less than 10 minutes after the readjustment period the preserver shall comply with the requirements of 3.8.4. The life preserver shall then be subjected to the leakage inspection (see 4.7.7), unless it is being subjected to qualification or first article inspection, in which case it shall be subjected to fatigue inspection (see 4.7.6).

4.7.6 Fatigue. For qualification and first article, after successful completion of pressure testing (see 4.7.5), the life preservers shall be subject to fatigue testing. Inflate both compartments with air through the respective oral inflation assemblies to 4.0 psig, hold there for no more than 15 seconds, and then deflate. Repeat this sequence a total of 4 times, except that on the final sequence, the pressure in the life preserver shall be recorded 30 ± 10 seconds after inflation. The final pressure shall comply with the requirements of 3.8.5. The life preserver shall then be subjected to the leakage inspection (see 4.7.7).

4.7.7 Leakage. The carbon dioxide cylinders shall be removed during this inspection. Inflate both compartments with air (see 4.6.3) through the respective oral inflation assemblies to a pressure of 2.0 psig. The air shall be securely shut off, and after not less than 15 minutes, the pressure checked and, if necessary, readjusted to 2.0 psig. The temperature and pressure shall be recorded at this time. At the end of not less than four hours after the readjustment period, the temperature shall be measured and readjusted for any change in temperature or pressure. The preserver shall comply with the requirements of 3.8.6.

4.7.8 Burst. The carbon dioxide cylinders shall be removed during this inspection. Inflate both compartments with air through the respective oral

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inflation assemblies at a rate of approximately 0.25 psig per minute until inflation pressure is sufficient to cause failure of material or seams. The preserver shall be observed for compliance to the requirements of 3.8.7.

5* PACKAGING

5.1 Preservation. Preservation shall be Level A or Industrial, as specified (see 6.2i).

5.1.1. Level A. Each life preserver shall be preserved in accordance with MIL-P-116, Method lC-2(modified). Each life preserver cleaned in accordance with MIL-P-116, process C-1, shall be dusted with zinc stearate or talc, using the minimum amount required to prevent the cemented surfaces from adhering to each other in a preserved condition. When talc is utilized, it shall be certified by the manufacturer as asbestos-free (see 6.3). Each flotation compartment shall be evacuated of air and each oral inflation valve, in closed condition, shall be tucked in place in the lobe. The life preserver shall be folded in accordance with applicable detailed drawing requirements. The life preserver shall be completely wrapped in grade A, 35-pound untreated Kraft paper conforming to UU-P-268. Every precaution shall be taken to prevent chafing by hardware of fittings. The wrapped preserver shall be preserved within a snug fitting fiberboard container conforming to PPP-B-636, style CSSC, type CF or SF, weather-resistant class, variety SW, grade W5c or W5s. The body joint and the top and bottom flaps shall be firmly glued together as specified in PPP-B-636, as applicable. The fiberboard container shall not contain any metal fasteners or stitches. All the seams and joints shall be sealed with water-resistant tape, not narrower than two inches wide, and conforming to PPP-T-76.

5.1.2 Industrial. Each life preserver prepared and folded as specified in 5.1.1 shall be individually preserved to afford the minimum degree of protection necessary to prevent deterioration or damage during shipment under normal environmental conditions and commercial modes of transportation.

5.2 Packing. Packing shall be Level A, B, or Industrial, as specified (see 6.2i). Shipping containers, insofar as possible, shall be uniform in size and shape and of minimum cube and tare weight.

5.2.1 Level A. Six life preservers, preserved as specified in 5.1.1 or 5.1.2, shall be packed as specified in 5.2.2, except that the fiberboard container shall be weather-resistant class, variety SW, grade V3c and V3s. In addition, each container shall be reinforced with flat steel strapping or tape banding in accordance with the appendix to PPP-B-636.

5.2.2 Level B. Six life preservers, preserved as specified in 5.1.1 or 5.1.2, shall be packed edgewise into a close fitting fiberboard container conforming to PPP-B-636, style CSSC, variety SW, grade 275, type: optional. The container body joint and top and bottom flaps, closure thereof shall be accomplished by gluing. The container shall be reinforced (strapped) by two non-metallic bands, applied in accordance with applicable procedures in the

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appendix to PPP-B-636. No metal staples or stitches are permitted on the container.

5.2.3 Industrial. The preserved life preservers shall be packed within exterior type shipping containers in a manner that will ensure safe transportation at the lowest rate to the point of delivery. The container shall be reinforced (strapped) with two non-metallic bands. The shipment shall conform to the minimum requirements of the rules and regulations applicable to the mode of transportation selected (see 2.2.).

5.3 Marking. In addition to any special markings required by the contract (see 6.2j) or purchase order, the interior and exterior containers shall be marked in accordance with MIL-STD-129 and shall include the date of manufacture (month and year).

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. The intended use of the life preservers covered by this general specification shall be as specified in the applicable specification sheet.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of the specification.

b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).

c. Applicable drawings, including revisions, and type preserver to be procured.

d. Government part number, national stock number, and quantity.

e. Applicable qualified products list.

f. Whether first article inspection is waived (see 6.6).

g* Name and address of the first article inspection facility (see 4.4.1); and the name and address of the Government activity responsible for conducting the inspection program (see 4.4.2).

h. Name and address of the quality conformance verification inspection facility (see 4.5.1.3); and the name and address of the Government activity responsible for conducting the quality conformance

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verification inspection program (see 4.5.1.3).

i Selection of applicable levels of preservation and packing (see 5.1 and 5.2).

j Whether any special markings are required (see 5.3).

k. Certificate of compliance for the age of the materials and components (see 3.4 and 6.3), excluding the metallic parts.

l. Selection of quality conformance verification inspection samples to be performed by the cognizant Government quality assurance representative specialist (see 4.5.1.3).

m. That talc (if used) is absestos-free (see 3.5.2 and 4.3.1).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on contract. The applicable Data Item Description (DID's) should be reviewed in conjunction with the specified acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 227.405-70 exempts the requirement for DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
3.4, 3.5.2, 4.3.1, 5.1.1, 6.2k	DI-MISC-80678	Certification/ Data Sheet	10.2.4 only
4.1.1	DI-NDTI-80809A	Test/Inspection Report	10.2.7 only
4.4.2	DI-NDTI-80809A	Test/Inspection Report	

The above DID's were those cleared as of the date of this specification. The current issue of DID 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

6.4 Patterns. The pattern drawing for the life preserver casing shall be furnished by the contracting officer to the contractor for use in cutting working patterns (see 3.5.1).

6.5 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in the Qualified Products List (QPL-81561) whether or not such products have actually been so listed by that date. The attention of

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contractors is called to these requirement, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Commander, Naval Air Systems Command, Department of the Navy, Code 5311, 1421 Jefferson Davis Highway, Arlington, VA 22243; however, information pertaining to qualification of products may be obtained from the Commanding Officer, Naval Air Warfare Center Aircraft Division, Warminster, PA 18974-5000, Attention: Code 6031.

6.5.1 Qualification inspection report. When requested, the manufacturer shall submit an inspection report in accordance with SD-6, "Provisions Governing Qualification. "

6.6 First article. When first article inspection is required, the items should be first article samples. The first article shall be as specified in 4.4.1. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results, and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.7 First article sample disposition. Upon completion of the first article inspection program, disposition of samples will be as follows:

a. One sample will be returned to the contractor for use in monitoring production.

b. One sample will be destroyed during the inspection program.

c. One sample will be retained by the inspection laboratory for reference during the Quality Conformance Verification Inspection Program and will be returned to the contractor with the samples from the final production lot.

6.8 Subject term (keyword) Listing.

Buoyancy
Carbon dioxide cylinder
Carbon dioxide inflation
Flotation system
Manual inflation
Oral inflation
Thermal bonding

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6.9 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Preparing activity:
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(Project: 4220-N394)

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TABLE I. Qualification examinations and tests (see 4.3).

Inspection	Paragraph	
	Requirement	Method
Weight of life preserver	3.8.1	4.7.2
Operation (carbon dioxide)	3.8.2	4.7.3
Buoyancy	3.8.3	4.7.4
Pressure	3.8.4	4.7.5
Fatigue	3.8.5	4.7.6
Leakage	3.8.6	4.7.7
Visual examination	3.7.1	4.7.1.1
Dimensional check	3.7.2	4.7.1.2
Burst	3.8.7	4.7.8

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TABLE II. First article examinations and tests (see 4.4).

	Paragraph	
Inspection	Requirement	Method
Weight of life preserver	3.8.1	4.7.2
Operation (carbon dioxide)	3.8.2	4.7.3
Buoyancy	3.8.3	4.7.4
Pressure	3.8.4	4.7.5
Fatigue	3.8.5	4.7.6
Leakage	3.8.6	4.7.7
Visual examination	3.7.1	4.7.1.1
Dimensional check	3.7.2	4.7.1.2
Burst	3.8.7	4.7.8

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TABLE III. Quality conformance inspection (see 4.5.1.

	Paragraph			
Inspection 1/	Requirement	Method	Sample Size	Acceptance Criteria
Weight	3.8.1	4.7.2	Inspection Level S-3 2/	Reject all defective units
Visual examination	3.7.1	4.7.1.1	a. Every life preserver for critical defects	Reject all units with any critical defects
			b. Inspection Level II for minor defects 2/	Reject all defective units
Operation (carbon dioxide) 3/	3.8.2	4.7.3	Every life preserver 5/	Reject all defective units
Pressure 3/, 4/	3.8.4	4.7.5	Every life preserver	Reject all defective units
Leakage 3/	3.8.6	4.7.7	Every life preserver	Reject all defective units
Dimensional check	3.7.2	4.7.1.2	Inspection Level S-3 2/	Reject all defective units
Packaging	3.7.3	4.7.1.3	Inspection Level S-2 2/	Reject all defective units

1/ The results of all inspections shall be identifiable by the assigned serial numbers (see 3.6.1).

2/ The sample size shall be in accordance with MIL-STD-105.

3/ These inspections shall be performed in sequence. The sequence operation (carbon dioxide), pressure, and leakage. If the pressure inspection is performed prior to final assembly (see footnote 4/), the test may be removed from the sequence.

4/ Pressure inspection may be performed at any time prior to, or after final assembly of the preserver. If performed after final assembly, the sequence outlined in footnote 3/ shall apply.

5/ One life preserver out of 50, or every fraction thereof shall be inspected in a packed condition (see 4.7.3.2).

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TABLE IV. Classification of defects for visual examination of the life preserver (see 4.7.1.1).

Critical 1/	Mi
1. Any non-specified hole, cut patch or burn.	201. Stitching and sewed seam construction, not as specified.
2. Any fabric damaged, bruised, abraded, containing imperfections, or it otherwise defective. 2/	202. Any spot or stain. 3/
3. Any stitching in the inflatable section of the life preserver.	203. Any cut edge of the uncoated nylon nonfibrous material not seared or containing sharp edges.
4. Any grommet missing, mislocated, or improperly clinched. 2/	204. Any snap fastener missing, mislocated, improperly clinched, otherwise defective. 3/ 4/
5. Inflation assembly or manifold stem assembly not in accordance with requirements, not located as specified, or inoperable.	205. Oral inflation assembly or components not specified type; oral valve not locked in the closed position.
6. Any seam separating in the inflatable section.	206. Any actuating lever safety wired to the inflator assembly.
7. Any inflatable section seam construction which does not meet the minimum requirements specified.	207. Any metal component improperly finished or containing nicks, burrs, dents, sharp edges or rough surfaces. 3/
8. Any channels or voids in any seam on the inflatable section.	208. Color of any component, not as specified.
9. Inflatable sections and casing assembly not joined, as specified.	209. Any required markings missing illegible, incomplete, incorrect or improperly located.
10. Oral inflation assembly mislocated, bent, distorted or inoperable. Oral tube clamp not installed securely. 2/	210. Any inspection record patch or warning tag missing, illegible incomplete, incorrect, or improperly attached or located.

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TABLE IV. Classification of defects for visual examination of the life preserver (see 4.7.1.1) - Continued.

Critical 1/	Minor
11. Release pin loop twisted, damaged, or required operation omitted; or improperly attached not herein classified.12. Any component, component part, or required operation omitted; or any operation improperly performed, not herein classified. 2/	211. Any wrinkles, channels, or voids in any seam, patch or attachment on the inflatable section. 3/
13. Any component not as specified, or any defect of a component or assembly not herein classified. 2/	212. Any inflatable section seam construction which exceeds the max. requirements specified.
14. For Class 1, any seam tape not applied to seams as specified. 2/	213. Cement on the cloth surfaces around the patches, attachments, seams, seam tapes not visible or in excess of requirements, as applicable.
	214. Any clot or mass of adhesive.
	215. Overlap of any seam tape in excess of requirements, as applicable.
	216. Any seam tape, patch, or attachment separating, as applicable. 3/

1/ Arty defect shall be classified critical if it appears in the fabric. No more than two or a combination of two contiguous broken or missing picks, tight ends, knots or burrs, or creases are permitted in a 6" X 3" area of the finished casing fabric. Baggy, ridgy, wavy, and defects which allow light transmission shall be scored as critical in the casing fabric.

2/ The defect shall be classified Critical when it seriously affects serviceability or function; otherwise; it is to be classified Minor.

3/ The defect shall be classified as Minor when it does not seriously affect serviceability or function; otherwise, it is to be classified Critical.

4/ The snap fasteners shall be checked for proper function and attachment.

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TABLE V. List of defects for finished dimensions (see 4.7.1.2).

Examine	Defect
Measure the life preserver, components, and the casing and components.	Any measurement deviating from the dimensions and tolerances as specified in 3.5 and 3.6, shall be enumerated as a dimensional defect.

TABLE VI. List of defects for Packaging (see 4.7.1.3).

Item	Defect
Exterior and interior markings	Missing, incorrect, incomplete, illegible, of improper size, location, sequence, or method of application; markings not the same on the interior and exterior containers.
Packaging and Packing materials	Any non-conforming component; any component missing, damaged, or otherwise defective.
Workmanship	Inadequate application of the components such as incomplete closure of the unit package, container flaps, loose strappings, etc.; buldging or distortion of the containers; unit container contains metal fastenings or stitches.
Exterior and interior weight or content	Number per container is more or less then required; gross or net weight exceeds the requirements; Item not folded as specified.

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8. PREPARING ACTIVITY

a. RECOMMANDING OFFICER, NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION LAKEHURST SYSTEMS REQUIREMENTS DEPARTMENT	b. TELEPHONE (Include Area Code) (1) Commercial: (908) 323-7488 (2) AUTOVON: 624-7488
c. ADDRESS (Include Zip Code) CODE SR3 LAKEHURST, NJ 08733-5100	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340