

- (1) Method 5100, Strength and Elongation, Breaking of Woven Cloth; Grab Method.
  - (2) Method 5132, Strength of Cloth, Tearing; Falling-Pendulum Method.
  - (3) Method 5134, Strength of Cloth, Tearing; Tongue Method.
  - (4) Method 5804.1, Weathering Resistance of Cloth; Accelerated Weathering Method.
  - (5) Method 5762, Mildew Resistance of Textile Materials; Soil Burial Method.
- Federal Standard No. 751, Stitches, Seams, and Stitching.

## MILITARY SPECIFICATIONS

MIL-L-24611(SH)—Life Preserver Support Package For Life Preserver, MK 4.

## NATIONAL BUREAU OF STANDARDS (NBS)

“The Universal Color Language” and “The Color Names Dictionary” in *Color: Universal Language and Dictionary of Names*, National Bureau of Standards Special Publication 440.

## UNDERWRITERS LABORATORIES (UL)

UL 1191, “Components for Personal Flotation Devices.”

UL 1517, “Hybrid Personal Flotation Devices.”

[CGD 78-174, 50 FR 33928, Aug. 22, 1985. Redesignated by CGD 78-174, 60 FR 2486, Jan. 9, 1995; CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50733, Sept. 27, 1996; USCG -1999-5151, 64 FR 67184, Dec. 1, 1999]

**§ 160.077-6 Approval procedures.**

(a) *General.* Subpart 159.005 of this chapter contains the approval procedures. Those procedures must be followed, excepted as modified in this paragraph.

(1) Preapproval review under §§ 159.005-5 and 159.005-7 may be omitted if a similar design has already been approved.

(2) The information required in all three subparagraphs of § 159.005-5(a)(2) must be included in the application.

(3) The application must also include the following:

(i) The type of performance (i.e. Donned Type I, Type II or Type III) that the PFD is designed to provide.

(ii) Any special purpose(s) for which the PFD is designed and the vessel(s) or type(s) of vessel on which its use is planned.

(iii) Buoyancy and torque tolerances to be allowed in production.

(iv) The text of any optional marking to be provided in addition to required text.

(v) The manual required by § 160.077-29 (UL 1517 text may be omitted in this submission).

(vi) The size range of wearers that the device is intended to fit.

(4) The description of quality control procedures required by § 159.005-9 of this chapter to be submitted with the test report may be omitted as long as the manufacturer's planned quality control procedures comply with § 160.077-23.

(b) *Waiver of tests.* If a manufacturer requests that any test in this subpart be waived, one of the following must be provided to the Commandant as justification for the waiver:

(1) Acceptable test results on a PFD of sufficiently similar design.

(2) Engineering analysis showing that the test is not applicable to the particular design or that by design or construction the PFD cannot fail the test.

(c) *Alternative Requirements.* A PFD that does not meet requirements in this subpart may still be approved if the device—

(1) Meets other requirements prescribed by the Commandant in place of or in addition to requirements in this subpart; and

(2) Provides at least the same degree of safety provided by other PFD's that do comply with this subpart.

[CGD 78-174, 50 FR 33928, Aug. 22, 1985, as amended by CGD 78-174A, 51 FR 4351, Feb. 4, 1986. Redesignated and amended by CGD 78-174, 60 FR 2491, Jan. 9, 1995]

**§ 160.077-7 Procedure for approval of design or material revision.**

(a) Each change in design, material, or construction of an approved PFD must be approved by the Commandant before being used in any production of PFDs.

(b) Determinations of equivalence of design, construction, and materials may be made only by the Commandant.

[CGD 78-174, 60 FR 2492, Jan. 9, 1995]

**§ 160.077-9 Recognized laboratory.**

(a) A manufacturer seeking Coast Guard approval of a product under this subpart shall follow the approval procedures of subpart 159.005 of this chapter, and shall apply for approval directly to a recognized independent laboratory. The following laboratories are recognized under § 159.010-7 of this part, to perform testing and approval functions under this subpart: Underwriters

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Laboratories, 12 Laboratory Drive, P.O. Box 13995, Research Triangle Park, NC 27709-3995, (919) 549-1400.

(b) Production oversight must be performed by the same laboratory that performs the approval tests unless, as determined by the Commandant, the employees of the laboratory performing production oversight receive training and support equal to that of the laboratory that performed the approval testing.

[CGD 93-055, 61 FR 13931, Mar. 28, 1996; 61 FR 15868, Apr. 9, 1996]

### § 160.077-11 Materials—Recreational Hybrid PFD's.

(a) *General*—(1) *Application*. This section contains requirements for materials used in recreational hybrid PFD's.

(2) *Condition of Materials*. All materials must be new.

(3) *Acceptance, certification, and quality*. All components used in the construction of hybrid PFDs must meet the applicable requirements of subpart 164.019 of this chapter.

(4) *Temperature range*. Unless otherwise specified in standards incorporated by reference in this section, all materials must be designed for use in all weather conditions throughout a temperature range of  $-30^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+150^{\circ}\text{F}$ ).

(5) *Weathering Resistance*. Each non-metallic component which is not suitably covered to shield against ultraviolet exposure must be designed to—

(i) Retain at least 40% of its strength after being subjected to 300 hours of sunshine carbon arc weathering as specified by Method 5804.1 of Federal Test Method Standard Number 191; or

(ii) Meet UL 1517, section 4.3.

(6) *Fungus Resistance*. Each non-metallic component must be designed to retain at least 90% of its strength after being subjected to the mildew resistance test specified by Method 5762 of Federal Test Method Standard 191 when untreated cotton is used as the control specimen. Also, the gas transmission rate of inflation chamber materials must not be increased by more than 10% after being subjected to this test. Materials that are covered when used in the PFD may be tested with that covering.

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(7) *Corrosion resistance*. Each metal component must be—

(i) Galvanically compatible with each other metal part in contact with it; and

(ii) Unless it is expendable (such as an inflation medium cartridge), 410 stainless steel or have salt water and salt air corrosion characteristics equal or superior to 410 stainless steel or perform its intended function, and have no visible pitting or other damage on any surface, after 720 hours of salt spray testing according to ASTM B 117 (incorporated by reference, see § 160.077-5).

(8) *Materials not covered*. Materials not covered in this section must be of good quality and suitable for the purpose intended.

(b) *Flotation material*. Inherent buoyancy must be provided by—

(1) Plastic foam meeting—

(i) Subpart 164.013 of this chapter;

(ii) Subpart 164.015 of this chapter; or

(iii) UL 1191 and having a V factor of 89 except that foam with a lower V factor may be used if it provides buoyancy which, after a normal service life, is at least equal to that of a PFD made with material having a V factor of 89 and the required minimum inherent buoyancy when new; or

(2) Kapok meeting subpart 164.003 of this chapter.

(c) *Fabric*—(1) *All fabric*. All fabric, except inner envelope fabric, must—

(i) Be of a type accepted for use on Type I PFD's approved under subpart 160.002 of this chapter; or

(ii) Meet the Type V requirements for "Fabrics for Wearable Devices" in UL 1191, except that its breaking strength must be at least 400 N (90 lb.) in both the directions of greater and lesser thread count.

(2) *Rubber coated fabric*. Rubber coated fabric must be of a copper-inhibiting type.

(3) *Inner envelope fabric*. Inner envelope fabric must—

(i) Meet the requirements in paragraph (c)(i) of this section; or

(ii) Be of a type accepted for use on Type II PFD's approved under subpart 160.047 of this chapter.

(d) *Inflation chamber materials*—(1) *All materials*. The average permeability of inflation chamber material must not be more than 110% of the permeability