

crocking, and light shall be rated "good" when tested in accordance with Federal Test Method Standard No. 191, Methods 5610, 5630, 5650, and 5660. After dyeing, the drill shall be treated with a mildew-inhibitor of the type specified in paragraph (j) of this section. The finished goods shall contain not more than 2 percent residual sizing or other nonfibrous material, shall weigh not less than 6.5 ounces per square yard, shall have a thread count of not less than 72 in the warp and 54 in the filling, and shall have a breaking strength (grab method) of not less than 105 pounds in the warp and 70 pounds in the filling. If it is proposed to treat the fabric with a fire-retardant substance, full details shall be submitted to the Commandant for determination as to what samples will be needed for testing.

(c) *Tunnel strip.* The tunnel strip shall be made of cotton drill conforming to the requirements for the envelope cover.

(d) *Pad covering.* The covering for the fibrous glass pad inserts shall be flexible vinyl film not less than 0.006 inch in thickness meeting the requirements of specification L-P-375 for Type I film. Type II, Class 1 film not less than 0.008 inch in thickness will also be acceptable.

(e) *Tie tapes and drawstrings.* The tie tapes at the neck and the lower drawstrings shall be made of 1¼-inch cotton tape weighing not less than 0.3 ounce per linear yard, and having a minimum breaking strength of 200 pounds. The tie tapes and drawstrings shall be treated with a mildew-inhibitor of the type specified in paragraph (j) of this section.

(f) *Body strap.* The body strap shall be made of one-inch cotton webbing having a minimum breaking strength of 400 pounds. One-inch cotton webbing meeting the requirements of specification MIL-W-530 for Type IIb webbing is acceptable. The complete body strap assembly shall have a minimum breaking strength of 360 pounds. The body strap shall be treated with a mildew-inhibitor of the type specified in paragraph (j) of this section.

(g) *Dee rings and snap hook.* The dee rings and snap hook shall be brass, bronze, or stainless steel, and of the ap-

proximate size indicated by Dwg. No. 160.005-1, Sheet 1. The snap hook spring shall be phosphor bronze or other suitable corrosion-resistant material. Dee ring ends shall be welded to form a continuous ring. The webbing opening of the snap hook shall be a continuous ring.

(h) *Reinforcing tape.* The reinforcing tape shall be made of ¾-inch cotton tape weighing not less than 0.18 ounce per linear yard and having a minimum breaking strength of 120 pounds, and shall be treated with a mildew-inhibitor of the type specified in paragraph (j) of this section.

(i) *Thread.* Each thread must meet the requirements of subpart 164.023 of this chapter. Only one kind of thread may be used in each seam.

(j) *Mildew-inhibitor.* The mildew-inhibitor shall be dihydroxydichlorodiphenylmethane, known commercially as Compound G-4, applied by the aqueous method. The amount of inhibitor deposited shall be not more than 1.50 percent and not less than 1.00 percent of the dry weight of the finished goods.

[CGFR 58-23, 23 FR 4628, June 25, 1958, as amended by CGFR 65-16, 30 FR 10898, Aug. 21, 1965; CGD 78-012, 43 FR 27153, 27154, June 22, 1978; CGD 84-068, 58 FR 29493, May 20, 1993]

§ 160.005-4 Construction.

(a) *General.* This specification covers life preservers which essentially consist of a vest-cut envelope containing pockets in which are enclosed pads of buoyant material, the life preserver being fitted with tapes and webbing to provide complete reversibility, proper adjustment for close fit to the bodies of various size wearers, and proper flotation characteristics to hold the wearer in an upright backward position with head and face out of water.

(b) *Envelope.* The envelope shall be of not more than two pieces, one piece for either side, cut to the pattern shown on Dwg. No. 160.005-1, Sheet 1, for adult size, and Sheet 4, for child size, joined by seams and stitching as shown on the drawing. A drawstring tunnel shall be formed by stitching a strip of the tunnel strip material as shown by the drawing. The ends of the tunnel strip shall be tucked under the reinforcing tape stitched around the end openings so there is no direct access to the pads

from the outside. Three pockets shall be formed for insertion of the pads. The two front pads shall be removable from the envelope when portions of the lower longitudinal seam are opened, and the back pad shall be removable when a portion of one armhole seam is opened.

(c) *Pad inserts*—(1) *Forming, sealing, and distribution of fibrous glass.* The buoyant pad inserts shall be formed from two pieces of film cut to the patterns shown by Dwg. No. 160.005-1, Sheet 3, for adult size, and Sheet 5, for child size, which shall be heat-sealed tight. The heat-sealed pad seams shall show an adhesion of not less than 8 pounds when 1-inch strips cut across and perpendicular to the seams are pulled apart at a rate of separation of the clamping jaws of the test machine of 12 inches per minute. The pad inserts shall be filled with fibrous glass distributed as follows:

TABLE 160.005-4(c)(1)—DISTRIBUTION OF FIBROUS GLASS IN PAD INSERTS

	Model 52 (minimum)	Model 56 (minimum)
Front pad (2):		
Lower section	10.00 oz. each ...	6.50 oz. each.
Upper section	7.25 oz. each	4.75 oz. each.
Back pad	11.50 oz.	7.50 oz.
Total	46.00 oz.	30.00 oz.

(2) *Displacement of pad inserts.* The volume of the finished individual heat-sealed buoyant pad inserts shall be such as to provide buoyancy as set forth in the following table when tested in accordance with the method set forth in §160.005-5(d), except that the period of submergence shall be only long enough to determine the displacement of the pads:

TABLE 160.005-4(c)(2)—VOLUME DISPLACEMENT OF SEALED PADS

	Model 52	Model 56
Front pads	12½ lbs. each ±¼ lb.	6½ lbs. each ±½ lbs.
Back pads	8 lbs. each ±½ lb.	4½ lbs. each ±½ lb.

(d) *Tie tapes.* The tie tapes at the neck shall extend not less than 14 inches from the edge of the adult life preserver and not less than 12 inches from the edge of the child life preserver. They shall be stitched through both thicknesses of the envelope as

shown by Dwg. No. 160.005-1, Sheet 1, for adult size, and Sheet 4, for child size, or by the alternate stitching shown on Sheet 2. The free ends shall be doubled over and stitched in accordance with section E-E of Sheet 1.

(e) *Drawstrings.* The drawstrings at the waist shall extend not less than 8 inches from the edge of the life preserver and shall be secured in the drawstring tunnel as shown by Dwg. No. 160.005-1, Sheet 1, for adult size, and Sheet 4, for child size, or by the alternate stitching shown on Sheet 2. The free ends shall be doubled over and stitched in accordance with section E-E of Sheet 1.

(f) *Body strap.* The body strap shall be fitted with a single dee ring on one end and with the arrangement of a snap hook and prethreaded double dee rings as shown on Dwg. No. 160.005-1, Sheet 1, on the other. The body strap shall be stitched as shown on the drawings, and the edge of the single dee ring shall be 20 inches from the center line for adult size and 15 inches for child size.

(g) *Reinforcing tape.* Binding tape shall be stitched approximately 15 inches for adult life preservers and 12 inches for child life preservers around the back of the neck, and also around the openings of the drawstring tunnel and around the bottom of the arm holes as indicated by the drawings.

(h) *Stitching.* All stitching shall be a short lock stitch conforming to Stitch Type 301 of Federal Standard No. 751, and there shall be not less than 7, nor more than 9 stitches to the inch.

(i) *Workmanship.* Life preservers shall be of first-class workmanship and shall be free from any defects materially affecting their appearance or serviceability.

[CGFR 53-25, 18 FR 7863, Dec. 5, 1953, as amended by CGFR 58-23, 23 FR 4628, June 25, 1958; CGFR 65-16, 30 FR 10898, Aug. 21, 1965]

§ 160.005-5 Sampling, tests, and inspections.

(a) Production tests and inspections must be conducted by the manufacturer of a life preserver and the accepted laboratory inspector in accordance with this section and §160.001-5.

(b) *Buoyancy test.* The buoyancy of the pad inserts from the life preserver shall be determined according to