

(b) *Materials.* (1) Plating for shell, air tanks, etc., shall be as shown in Table 160.035-6.

(c) *Welding.* (1) Welding may be substituted for riveting in the following locations: Hoist plate to keel, disengaging gear grace plate to stem and sternpost, rudder attachment fitting to the sternpost, and the propeller shaft stern tube to the sternpost. When using 6061-T6 aluminum, the welded area is to be heat-treated and checked by X-ray to assure a satisfactory weld. When using 5086-H 112 aluminum, the welded area is to be checked by a non-destructive test method such as X-ray, ultrasonic waves or fluorescent materials, to assure a satisfactory weld. Other methods of checking aluminum welds will be given separate consideration. The welding shall be performed by a welder qualified by the U.S. Coast Guard, American Bureau of Shipping, or U.S. Navy Department, and only suitable electrodes shall be used. Details of the joints shall be indicated on the construction drawings submitted for approval.

(d) *Dissimilar metals.* (1) Where in the construction of aluminum lifeboats the use of dissimilar metals are employed such as, the installation of the mechanical disengaging gear, hand propelling gear, or engine, suitable insulation between the aluminum and these metals shall be used. Porous or absorbent materials shall not be used as insulating materials. Only non-porous materials such as plastics, rubber or neoprene base compounds, or micarta shall be used. Other suitable material will be given separate consideration. Fasteners used in joining dissimilar metals together shall be of the type that will minimize corrosion.

[CGFR 65-9, 30 FR 11467, Sept. 8, 1965, as amended by CGD 95-028, 62 FR 51213, Sept. 30, 1997]

**§ 160.035-8 Construction of fibrous glass reinforced plastic (F.R.P.), oar-, hand-, and motor-propelled lifeboats.**

(a) *General requirements.* (1) Plastic lifeboats shall comply with the general requirements for the construction and arrangement of steel lifeboats, except that unless otherwise specified, materials, scantlings, methods of construc-

tion, fastenings, methods of attachment of component parts, and other specific construction details may be varied by the builder in order to produce a structurally sound boat meeting in every respect recognized standards of first class construction and one which will satisfactorily meet the performance requirements set forth in this subpart.

(2) Fibrous glass reinforced plastic lifeboats may be of the following categories of hull construction:

- A—Single piece, outer hull construction.
- B—Two piece, outer hull construction.
- C—Single piece, inner hull construction.
- D—Two piece, inner hull construction.
- E—Multi-piece, inner hull construction.

(b) *Specific requirements—(1) Resin.* The resin used shall be of the fire retardant, nonair inhibited-type conforming to Class A of Military Specification MIL-R-21607 and Grade A, Class O of Military Specification MIL-R-7575, including tests after 1 year's weathering. In addition, the test panels shall be tested for continued conformance with Military Specification MIL-R-21607. All tests, including weathering of samples, shall be accomplished by an independent laboratory. Complete certification by the independent laboratory with test data shall be submitted to Coast Guard (CG-521) for acceptance. Class A resin shall be fire retardant without additives. Class B resins will be given consideration upon request. Class B resin shall be fire retardant with additives and shall meet the same test requirements as that for Class A resins. When Class B resin is used for the prototype lifeboat, additives for fire retardancy shall not be used in order to obtain a translucent laminate for inspection purposes. This prototype test lifeboat will not be stamped approved, nor will it be acceptable for merchant vessels. Whichever class of resin the manufacturer decides to use for his prototype lifeboat, shall be used in his production lifeboats. A note to this effect shall be included in his specifications and drawings for this particular size and type lifeboat.

(2) *Glass reinforcement.* The glass reinforcement used shall have good laminated wet strength retention and shall meet the appropriate military specification stated in this paragraph. Glass

cloth shall meet Military Specification MIL-Y-1140, Class C, form 4, No. 1000-150. Woven roving shall conform to Military Specification MIL-C-19663, Style 605-308 or Style 605-604. Other glass materials equivalent in strength, design, wet out, and efficiency will be given consideration upon request.

(3) *Laminate*. All exposed surfaces of the finished laminate shall present a smooth finish, and there shall be no protruding surface fibers, open voids, pits, cracks, bubbles or blisters. The laminate shall be essentially free from resin-starved or overimpregnated areas, and no foreign matter shall remain in the finished laminate. The entire laminate shall be fully cured and free of tackiness, and shall show no tendency to delaminate, peel, or craze in any overlay. The laminate shall not be released from the mold until a Barcol hardness reading of not less than 40-55 is obtained from at least 10 places on the nongel coated surface, including all interior inner and outer hull surfaces and built-in lockers. The mechanical properties of the laminate shall meet the requirements for a Grade 3 laminate as specified in Table I of Military Specification MIL-P-17549. Other grades will be given consideration on specific request. For the prototype boat of each design made by each manufacturer, the layup shall be made of unpigmented clear resins so that all details of construction will be visible for inspection and test panels representative of each prototype layup shall be tested in accordance with MIL-P-17549.

(4) *Weights of F.R.P. lifeboats*. (i) The variations in weight between the fibrous glass reinforced plastic in the prototype F.R.P. lifeboat and the fibrous glass reinforced plastic in the production F.R.P. lifeboat shall be within 5 percent. This weight shall be for the F.R.P. sections only and shall not include the weight of any hardware or equipment.

(ii) When assembling two similar sections as indicated by categories B and D of paragraph (a)(2) of this section, the weights of the matching F.R.P. pieces shall be within 5 percent of each other.

(iii) The recorded weights of the items indicated in paragraphs (b)(4) (i)

and (ii) of this section shall be kept by the manufacturer, with each boat listed by size, type, and serial number.

[CGFR 65-9, 30 FR 11467, Sept. 8, 1965, as amended by CGD 72-133R, 37 FR 17039, Aug. 24, 1972; CGD 82-063b, 48 FR 4782, Feb. 3, 1983; CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50733, Sept. 27, 1996; USCG-2009-0702, 74 FR 49237, Sept. 25, 2009]

#### § 160.035-9 Cubic capacity of lifeboats.

(a) *Definitions*. The following definitions apply to the measurement of a lifeboat to determine its cubic capacity.

(1) *Length (L)*. The length is the distance in feet from the inside of the plating or planking at the stem to the corresponding position at the stern. In the case of a boat with a square stern, the after terminus is the inside of the transom.

(2) *Breadth (B)*. The breadth is the distance in feet over the plating or planking at the point where the breadth of the boat is greatest.

(3) *Depth (D)*. The depth is the distance in feet amidships inside the plating from the top of the keel to the level of the gunwale. The depth used for calculating purposes shall not exceed 45 percent of the breadth.

(4) *Sheer*. Lifeboats shall have a sheer at each end at least equal to 4 percent of the length, and a sheer at the quarter points of at least 1 percent of the length. If less sheer is provided, the depth used to determine the cubic capacity shall be assumed to be reduced so as to achieve this minimum sheer.

(b) *Formula*. The cubic capacity shall be determined by the following formula:

$$L \times B \times D \times 0.64$$

In the case of lifeboats with unusual proportions, the Commandant may require that the cubic capacity be calculated by exact measurements from which the exact seating capacity may be determined.

(c) *Motor-propelled lifeboat*. The cubic capacity of a motor-propelled lifeboat shall be determined in the same manner as an oar-propelled lifeboat and then deducting from the gross volume, a volume equal to the engine box and accessories, and when carried, the