

§ 160.151-27 Approval inspections and tests for inflatable liferafts.

(a) Except as provided in paragraph (b) of this section, to satisfy the testing requirements of: IMO Resolution A.689(17), part 1, paragraphs 5.1 through 5.15 inclusive; paragraph 5.16 for a davit-launched inflatable liferaft; and paragraph 5.17, a prototype inflatable liferaft of each design submitted for Coast Guard approval must meet the additional specific requirements and tests specified in paragraphs (c) and (d) of this section.

(b) The Commandant may waive certain tests for a liferaft identical in construction to a liferaft that has successfully completed the tests, if the liferafts differ only in size and are of essentially the same design.

(c) Tests must be conducted in accordance with the indicated paragraphs of IMO Resolution A.689(17), except:

(1) *Jump test (Paragraph 1/5.2)*. One-half of the jumps must be with the canopy erect, and the remainder with the canopy furled or deflated. If a “suitable and equivalent mass” is used, it must be equipped with the shoes described in paragraph 1/5.2.1 of Resolution A.689(17), and arranged so the shoes strike the liferaft first.

(2) *Mooring-out test (Paragraph 1/5.5)*. Initial inflation may be with compressed air.

(3) *Loading and seating test (Paragraph 1/5.7)*. For a liferaft not intended for use with a launching or embarkation appliance, the persons used to determine seating capacity shall wear insulated buoyant immersion suits rather than lifejackets.

(4) *Boarding test (Paragraph 1/5.8)*. This test must be performed using each boarding ramp or boarding ladder which is installed on the liferaft.

(5) *Canopy-closure test (Paragraph 1/5.12)*. This test is required only for SOLAS A and SOLAS B inflatable liferafts. For a davit-launched liferaft, any opening near the lifting eye should be sealed during the test to prevent the ingress of water. The water accumulated within the liferaft at the end of the test must not exceed 4 liters (1 gallon).

(6) *Detailed inspection (Paragraph 1/5.14)*. The independent laboratory’s inspection of the prototype liferaft under

§ 160.151-13(a) satisfies the requirements of paragraph 1/5.14.

(7) *Davit-launched liferafts—strength test (Paragraph 1/5.16.1)*. The calculation of combined strength of the lifting components must be based on the lesser of—

(i) The lowest breaking strength obtained for each item; or

(ii) The component manufacturer’s ultimate strength rating.

(d) The boarding ramp on each liferaft equipped with one must be demonstrated capable of supporting one person weighing 100 kg (220 lb), sitting or kneeling and not holding onto any other part of the liferaft.

§ 160.151-29 Additional approval tests for SOLAS A and SOLAS B inflatable liferafts.

To verify compliance with the requirements of Regulation III/39.5.1, the following test must be conducted for SOLAS A and SOLAS B inflatable liferafts in addition to those required by § 160.151-27 and IMO Resolution A.689(17):

(a) *Test of filling time for stability appendages*. A representative sample of each type and size of stability appendage to be fitted to a liferaft must be tested as follows:

(1) The appendage must be attached to a testing jig similar in material and construction to the appendage’s intended location on a liferaft. The method of attachment must be the same as used on a liferaft. The appendage and jig must be attached to a scale capable of recording peak readings, and suspended over a pool of calm water. The dry weight must be recorded.

(2) The appendage and jig must then be quickly lowered into the water until the appendage is completely submerged. When the appendage has been in the water for 25 seconds, it must be smoothly lifted completely out of the water, and the peak weight after the appendage is removed from the water recorded.

(3) The difference in weights measured according to paragraphs (a) (1) and (2) of this section must be at least 60 percent of the appendage’s volume, calculated in accordance with § 160.151-17(a)(2)(i).

(b) [Reserved]

[CGD 85-205, 62 FR 25547, May 9, 1997, as amended by USCG-1998-4442, 63 FR 52192, Sept. 30, 1998]

§ 160.151-31 Production inspections and tests of inflatable liferafts.

(a) Production inspections and tests of inflatable liferafts must be carried out in accordance with the procedures for independent laboratory inspection in part 159, subpart 159.007, of this chapter and with those of this section.

(b) Each liferaft approved by the Coast Guard must be identified with unique lot and serial numbers as follows:

(1) Each lot must consist of not more than 50 liferafts of the same design and carrying capacity.

(2) A new lot must begin whenever the liferafts undergo changes of design, material, production method, or source of supply for any essential component.

(3) The manufacturer may use a running-lot system, whereby the fabrication of the individual liferafts of a lot occurs over an extended interval under an irregular schedule. Each running lot must comprise not more than 10 liferafts of the same design and carrying capacity. Each running-lot system must be in accordance with a procedure proposed by the manufacturer and approved by the Commandant.

(4) Unless a lot is a running lot, each lot must consist of liferafts produced under a process of continuous production.

(c) Among the records required to be retained by the manufacturer under §159.007-13 of this chapter, are affidavits or invoices from the suppliers identifying all essential materials used in the production of approved liferafts, together with the lot numbers of the liferafts constructed with those materials.

(d) Each approved liferaft must pass each of the inspections and tests described in IMO Resolution A.689(17), part 2, paragraphs 5.1.3 through 5.1.6 inclusive, and prescribed by paragraphs (e) through (g) of this section. For a davit-launched liferaft, these tests must be preceded by the test described in IMO Resolution A.689(17), part 2, paragraph 5.2.

(e) The test described in IMO Resolution A.689(17), Paragraph 2/5.1.5, must be conducted under the following conditions:

(1) The test must last 1 hour, with a maximum allowable pressure drop of 5 percent after compensation for changes in ambient temperature and barometric pressure.

(2) For each degree Celsius of rise in temperature, 0.385 kPa must be subtracted from the final pressure reading (0.031 psig per degree Fahrenheit). For each degree Celsius of drop in temperature, 0.385 kPa must be added to the final pressure reading (again, 0.031 psig per degree Fahrenheit).

(3) For each mm of mercury of rise in barometric pressure, 0.133 kPa must be added to the final temperature-corrected pressure reading (0.049 psig per 0.1 inch of mercury). For each mm of mercury of drop in barometric pressure, 0.133 kPa must be subtracted from the final temperature-corrected pressure reading (again, 0.049 psig per 0.1 inch of mercury). Corrections for changes in ambient barometric pressure are necessary only if a measuring instrument open to the atmosphere, such as a manometer, is used.

(f) One liferaft from each lot of fewer than 30 liferafts, and two from each lot of 30 to 50 liferafts, must pass the test described in IMO Resolution A.689(17), part 2, paragraphs 5.1.1 and 5.1.2. If any liferaft fails this test—

(1) The reason for the failure must be determined;

(2) Each liferaft in the lot must be examined for the defect and repaired if repairable, or scrapped if irreparable; and

(3) The lot test must be repeated, including random selection of the liferaft or liferafts to be tested. If any liferafts from the lot have left the place of manufacture, they must be recalled for examination, repair, and testing as necessary; or else the required actions must take place at an approved servicing facility.

(g) The manufacturer shall arrange for inspections by an accepted independent laboratory at least once in each calendar quarter in which production of liferafts approved by the Coast Guard takes place. The time and date of each inspection must be selected by