

the corresponding ISO 14125 test method (incorporated by reference, see §160.156-5 of this subpart). The tensile strength, lengthwise, must be determined as per ASTM D 638 or ISO 527 (incorporated by reference, see §160.156-5 of this subpart).

(C) Each major FRP component, such as the hull, canopy, and inner liner(s) of each prototype FRP rescue boat, must be examined and weighed after it is completed but before it is assembled. If the rescue boat is constructed by the spray lay-up technique, the hull and canopy thicknesses must be measured using ultrasonic or equivalent techniques;

(ii) *Steel construction.* Steel sheet and plate used for the hull, floors, and other structural components of a prototype steel rescue boat must meet the bend tests requirement specified under ASTM A 653 (incorporated by reference, see §160.156-5 of this subpart) after galvanizing or other anti-corrosion treatment has been applied. This may be demonstrated through supplier's certification papers or through witnessing actual tests;

(iii) *Welding.* Structural components of each prototype rescue boat joined by welding must be joined by the welding procedures and materials per the plans reviewed under §160.156-9 of this subpart and by welders appropriately qualified;

(iv) *Buoyancy material.* If block foam buoyancy material is used, each piece must be weighed after it is cut and shaped to make sure that the correct amount of foam is installed. If foamed-in-place buoyancy material is used, a separate sample of the foam must be poured, and used to make a density determination after it has set. The density must be $32 \pm 8 \text{ kg/m}^3$ ($2 \pm 0.5 \text{ lb/ft}^3$). Each major subassembly such as the hull-with-liner and canopy-with-liner must be weighed after the buoyancy foam is installed and before it is further assembled;

(v) *Coated fabric.* Coated fabric for inflatable collars used in the construction of each rescue boat must meet the requirements specified under §160.156-7(b)(3) of this subpart. This may be demonstrated through a supplier's certification papers or through witnessing actual tests;

(vi) Installation of the propulsion system; and

(vii) Installation of the steering system.

(3) The independent laboratory must submit the inspection report to the Commandant.

§ 160.156-13 Approval inspections and tests for prototype rescue boats and fast rescue boats.

(a) After the Commandant notifies the manufacturer that the prototype rescue boat is in compliance with the requirements of §160.156-11 of this subpart, the manufacturer may proceed with the prototype approval inspections and tests required under this section. The prototype rescue boat, the construction of which was witnessed under §160.135-11 of this part, must be used for the tests in this section.

(b) Except as provided in paragraph (f) of this section, the Coast Guard must conduct the approval inspections and witness the approval tests required under this section.

(c) *Manufacturer requirements.* To proceed with approval inspections and tests required by this section, the manufacturer must—

(1) Notify the Commandant and cognizant Officer in Charge, Marine Inspection (OCMI) of where the approval inspections and tests required under this section will take place, and such notification must be in sufficient time to allow making travel arrangements;

(2) Arrange a testing schedule that allows for a Coast Guard inspector to travel to the site where the testing is to be performed;

(3) Admit the Coast Guard inspector to any place where work or testing is performed on rescue boats or their component parts and materials for the purpose of—

(i) Conducting inspections as necessary to determine that the prototype is constructed by the methods and with the materials specified in the plans reviewed under §160.156-9, and the inspection report under §160.156-11, of this subpart;

(ii) Assuring that the quality assurance program of the manufacturer is satisfactory;

(iii) Witnessing tests; and

(iv) Taking samples of parts or materials for additional inspections or tests; and

(4) Make available to the Coast Guard inspector the affidavits or invoices from the suppliers of all essential materials used in the production of rescue boats, together with records identifying the lot or serial numbers of the rescue boats in which such materials were used.

(d) *Tests.* (1) *Prototype rescue boat readiness.* All tests must be conducted on a completely outfitted rescue boat, including fixed equipment such as a compass, searchlight, and navigating lights. Loose equipment may be substituted by weights.

(2) *FRP prototype rescue boat lay-up.* For the prototype of each design of an FRP rescue boat, the lay-up must be made of unpigmented resins and clear gel coat.

(3) *Fuel tank.* Each non-portable fuel tank must be tested by a static head above the tank top of 3 m (10 ft) of water without showing any leaks or signs of permanent distortion.

(4) *IMO Revised recommendation on testing.* Each prototype rescue boat of each design must pass each of the tests for the applicable hull type described in the IMO Revised recommendation on testing, part 1, section 7 (incorporated by reference, see §160.156-5 of this subpart). Tests must be conducted in accordance with these paragraphs of IMO Revised recommendation on testing, Part 1, with the following modifications:

(i) *Fire retardancy/release mechanism and engine tests* (Paragraphs 1/6.2, 6.9, 6.10, 6.14). The tests in the following IMO Revised recommendation on testing paragraphs may be accomplished independent of the rescue boat, and may be considered completed and need not be repeated if the tests have been previously shown to meet the following necessary requirements—

(A) Paragraphs 6.9.3 through 6.9.6;

(B) Paragraphs 6.10.2 through 6.10.6; and

(C) Paragraphs 6.14.6 through 6.14.8.

(ii) *Impact test* (Paragraph 1/6.4). The rigid vertical surface must not be displaced or deformed as a result of the test.

(iii) *Flooded stability test for rigid rescue boats only* (Paragraph 1/6.8). Any materials used to raise the test weights representing the rescue boat occupants above the seat pan must be at least as dense as fresh water.

(iv) *Rescue boat operational test, operation of engine* (Paragraph 1/7.1.5). For the 4-hour rescue boat maneuvering period, the rescue boat must not (except for a short period to measure towing force and to demonstrate towing fixture durability) be secured, and must be run through its full range of speeds and full range of all controls throughout the period.

(v) *Survival recovery test* (Paragraph 1/6.10.8). The recovery demonstration must show that no more than two crewmembers are required to recover a helpless person of ninety-fifth percentile by weight described in ASTM F 1166 (incorporated by reference, see §160.156-5 of this subpart) while the crewmembers and helpless person are each wearing a lifejacket.

(vi) *Rescue boat seating space test* (Paragraph 1/7.1.3). The average mass of persons used to test the rescue boat seating space must be determined by weighing as a group or individually. Each person must wear an inherently buoyant SOLAS lifejacket with at least 150 N of buoyancy or a Coast Guard-approved lifejacket approved under approval series 160.155. The operator(s) must demonstrate that the rescue boat can be operated while wearing a Coast Guard approved, insulated-buoyant immersion suit approved under approval series 160.171. The Commandant will give consideration to requests to test at, and designate rescue boats for, a heavier occupant weight than that stated in the IMO LSA Code, chapter V (incorporated by reference, §160.156-5 of this subpart).

(5) *Visual inspection.* Each rescue boat must be visually inspected to confirm—

(i) Compliance with this subpart;

(ii) Conformance with the plans reviewed under §160.156-9 of this subpart; and

(iii) Ease of operation and maintenance.

(e) *Test waiver.* The Commandant may waive certain tests for a rescue boat identical in construction to smaller and larger rescue boats that have

successfully completed the tests. Tests associated with rescue boat components that have already been approved by the Commandant are not required to be repeated.

(f) At the request of the manufacturer and discretion of the Commandant, an independent laboratory may perform approval inspections and witness approval tests required by this section so long as the inspections and tests are performed and witnessed in accordance with the procedures agreed upon between the independent laboratory and Commandant under 46 CFR part 159, subpart 159.010.

(g) After completion of approval inspections and tests required by this section, the manufacturer must comply with the requirements of 46 CFR 159.005-9(a)(5) by preparing and submitting to the Commandant for review—

(1) The prototype approval test report containing the same information recommended by IMO MSC Circ. 980 (incorporated by reference, see §160.156-5 of this subpart). The report must include a signed statement by the Coast Guard inspector (or independent laboratory as permitted by paragraph (f) of this section) who witnessed the testing, indicating that the report accurately describes the testing and its results; and

(2) The final plans of the rescue boat as built. The plans must include, in triplicate—

(i) The instructions for training and maintenance described in §§160.156-19 and 160.156-21 of this subpart; and

(ii) The final version of the plans required under §160.156-9 of this subpart.

(h) The Commandant will review the report and plans submitted under paragraph (g) of this section, and, if satisfactory to the Commandant, will approve the plans under 46 CFR 159.005-13.

§ 160.156-15 Production inspections, tests, quality control, and conformance of rescue boats and fast rescue boats.

(a) Unless the Commandant directs otherwise, an independent laboratory must perform or witness, as appropriate, inspections, tests, and oversight required by this section. Production inspections and tests of rescue boats must be carried out in accordance with

the procedures for independent laboratory inspection in 46 CFR part 159, subpart 159.007 and in this section, unless the Commandant authorizes alternative tests and inspections. The Commandant may prescribe additional production tests and inspections necessary to maintain quality control and to monitor compliance with the requirements of this subpart.

(b) *Manufacturer's responsibility.* The manufacturer must—

(1) Institute a quality control procedure to ensure that all production rescue boats are produced to the same standard, and in the same manner, as the prototype rescue boat approved by the Commandant. The manufacturer's quality control personnel must not work directly under the department or person responsible for either production or sales;

(2) Schedule and coordinate with the independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section) to ensure that all tests are performed as described in this section;

(3) Submit to the Commandant, a yearly report that contains the following—

(i) Serial number and date of final assembly of each rescue boat constructed;

(ii) Name of the representative of the independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section); and

(iii) Name of the vessel and company receiving the rescue boat, if known;

(4) Ensure that the arrangement and materials entering into the construction of the rescue boat are in accordance with plans approved under §160.156-13(h) of this subpart;

(5) Allow an independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section) access to any place where materials are stored for the rescue boat, work or testing is performed on rescue boats or their component parts and materials, or records are retained to meet the requirements of paragraph (c) of this section, for the purpose of—

(i) Assuring that the quality control program of the manufacturer is satisfactory;

(ii) Witnessing tests; or