

*ibr\_locations.html*. You may obtain copies of the material from the sources specified in the following paragraphs.

(b) American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959.

(1) ASTM A 36/A 36M-08, Standard Specification for Carbon Structural Steel, (approved May 15, 2008), IBR approved for §160.133-7 (“ASTM A 36”).

(2) ASTM A 276-08a, Standard Specification for Stainless Steel Bars and Shapes, (approved October 1, 2008), IBR approved for §160.133-7 (“ASTM A 276”).

(3) ASTM A 313/A 313M-08, Standard Specification for Stainless Steel Spring Wire, (approved October 1, 2008), IBR approved for §160.133-7 (“ASTM A 313”).

(4) ASTM A 314-08, Standard Specification for Stainless Steel Billets and Bars for Forging, (approved October 1, 2008), IBR approved for §160.133-7 (“ASTM A 314”).

(5) ASTM A 653/A 653M-08, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process, (approved July 15, 2008), IBR approved for §§160.133-7, 160.133-13, and 160.133-15. (“ASTM A 653”).

(6) ASTM F 1166-07, Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities, (approved January 1, 2007), IBR approved for §160.133-7 (“ASTM F 1166”).

(c) International Maritime Organization (IMO), Publications Section, 4 Albert Embankment, London, SE1 7SR, United Kingdom, +44 (0)20 7735 7611, <http://www.imo.org/>.

(1) IMO Resolution A.760(18), Symbols Related to Life-Saving Appliances and Arrangements, (adopted November 4, 1993), IBR approved for §160.133-19 (“IMO Res. A.760(18)”).

(2) Life-Saving Appliances, including LSA Code, 2010 Edition, (2010), pages 7-71 (“IMO LSA Code”), IBR approved for §§160.133-3 and 160.133-7.

(3) Life-Saving Appliances, including LSA Code, 2010 Edition, (2010), Revised recommendation on testing of life-saving appliances, pages 79-254 (“IMO Revised recommendation on testing”), IBR approved for §§160.133-7 and 160.133-13 (“IMO Revised recommendation on testing”).

(4) MSC/Circular 980, Standardized Life-saving Appliance Evaluation and Test Report Forms, (February 13, 2001), IBR approved for §160.133-13 (“IMO MSC Circ. 980”).

(5) MSC.1/Circular 1205, Guidelines for Developing Operation and Maintenance Manuals for Lifeboat Systems, (May 26, 2006), IBR approved for §160.133-21 (“IMO MSC.1 Circ. 1205”).

#### § 160.133-7 Design, construction, and performance of release mechanisms.

(a) To seek Coast Guard approval of a release mechanism, a manufacturer must comply with, and each release mechanism must meet, the requirements of the following—

(1) IMO LSA Code, chapter IV/4.4.7.6 (incorporated by reference, see §160.133-5 of this subpart), and a release mechanism for free-fall lifeboats must also meet the applicable provisions of chapter VI/6.1.4;

(2) IMO Revised recommendation on testing, Part 1/6.9 (incorporated by reference, see §160.133-5 of this subpart);

(3) 46 CFR part 159; and

(4) This subpart.

(b) Each release mechanism must meet the following requirements—

(1) *Design*. All functions of the release mechanism, including removal of interlocks, operation of the release handle, resetting the hooks, and reattaching the falls to the hooks, must be designed to be operable by persons wearing immersion suits;

(2) Each release mechanism should be designed following standard human engineering practices described in ASTM F 1166 (incorporated by reference, see §160.133-5 of this subpart). Design limits should be based on a range from the fifth percentile female to the ninety-fifth percentile male values for critical body dimensions and functional capabilities as described in ASTM F 1166. The dimensions for a person wearing an immersion suit correspond to the arctic clothed dimensions of ASTM F 1166;

(3) *Steel*. Each major structural component of each release mechanism must be constructed of steel. Other materials may be used if accepted by the Commandant as equivalent or superior.

Sheet steel and plate must be low-carbon, commercial quality, either corrosion resistant or galvanized as per ASTM A 653 (incorporated by reference, see §160.133-5 of this subpart), coating designation G115. Structural steel plates and shapes must be carbon steel as per ASTM A 36 (incorporated by reference, see §160.133-5 of this subpart). All steel products, except corrosion resistant steel, must be galvanized to provide high-quality zinc coatings suitable for the intended service life in a marine environment. Each fabricated part must be galvanized after fabrication. Corrosion resistant steel must be a type 302 stainless steel per ASTM A 276, ASTM A 313 or ASTM A 314 (incorporated by reference, see §160.133-5 of this subpart) or another corrosion resistant stainless steel of equal or superior corrosion resistant characteristics;

(4) *Welding.* Welding must be performed by welders certified by the Commandant, a classification society recognized by the Commandant in accordance with 46 CFR 8.220, the U.S. Navy, or the national body where the release mechanism is constructed or the national body's designated recognized organization. Only electrodes intended for use with the material being welded may be used. All welds must be checked using appropriate non-destructive tests;

(5) Metals in contact with each other must be either galvanically compatible or insulated with suitable non-porous materials. Provisions must also be made to prevent loosening or tightening resulting from differences of thermal expansion, freezing, buckling of parts, galvanic corrosion, or other incompatibilities;

(6) Screws, nuts, bolts, pins, keys, and other similar hardware, securing moving parts must be fitted with suitable lock washers, cotter pins, or locks to prevent them from coming adrift;

(7) The on-load operation of the release mechanism must require two separate, deliberate actions by the operator;

(8) The mechanical protection required by LSA Code Chapter IV/4.4.7.6.2.2 must only be able to be engaged when the release mechanism is properly and completely reset. Proper

engagement of the mechanical protection must be visually indicated;

(9) The release and recovery procedures required by LSA Code Chapter IV/4.4.7.6.5 must be included as an illustrated operation instruction plate or placard. The plate or placard must be corrosion resistant and weatherproof and must be marked with the word "Danger". The illustrations must correspond exactly to those used in the instruction and maintenance manual provided by the manufacturer;

(10) The release lever or control must be red in color, and the area immediately surrounding the control must be a sharply contrasting light color;

(11) The release lever and its connection to the release mechanism must be of sufficient strength so that there is no deformation of the release lever or the release control assembly during on-load release;

(12) Positive means of lubrication must be provided for each bearing which is not permanently lubricated. Points of lubrication must be so located that they are clearly visible and accessible in the installed position in the boat;

(13) A hydraulic system, if used to activate the release mechanism, must be in accordance with 46 CFR part 58, subpart 58.30, with hose and fittings in accordance with 46 CFR part 56, subpart 56.60, except that—

(i) Push-on type fittings such as Aeroquip 1525-X, 25156-X, and FC332-X are not permitted;

(ii) The length of nonmetallic flexible hose is limited to 760 mm (30 in); and

(iii) If a hand pump is provided, adequate space must be provided for the hand pump or hand operation;

(14) Each release mechanism designed to launch a boat by free-fall must not be able to carry any weight until the release mechanism is properly reset, and each of the two independent activation systems required to be operated from inside the boat must require at least two independent actions from different locations inside the boat to release the hook; and

(15) Each release mechanism must have mechanical protection against accidental or premature release that can only be engaged when the release mechanism is properly and completely

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reset. Proper engagement of the mechanical protection must be visually indicated.

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

§ 160.133-9 Preapproval review.

(a) Except as provided in paragraph (c) of this section, the Commandant must conduct the preapproval review, required by this section, in accordance with 46 CFR 159.005-5.

(b) *Manufacturer requirements.* To seek Coast Guard approval of a release mechanism, the manufacturer must submit an application to the Commandant meeting the requirements of 46 CFR 159.005-5 for preapproval review. To meet the requirements of 46 CFR 159.005-5(a)(2), the manufacturer must submit in triplicate—

(1) A list of drawings, specifications, manuals, and any other documentation submitted, with each document identified by number, title, revision issue, and date;

(2) General arrangement and assembly drawings, including principal dimensions;

(3) Stress calculations for all load carrying parts, including the release hooks, release mechanisms, and connections;

(4) Hydraulic systems drawings and specifications, if installed;

(5) Drawings of all signs and placards showing actual inscription, format, color, and size;

(6) An operation, maintenance, and training manual as described in §§ 160.133-19 and 160.133-21 of this subpart;

(7) A description of the quality control procedures and recordkeeping that will apply to the production of the release mechanism, which must include but is not limited to—

(i) The system for checking material certifications received from suppliers;

(ii) The method for controlling the inventory of materials;

(iii) The method for checking quality of fabrication and joints, including welding inspection procedures; and

(iv) The inspection checklists used during various stages of fabrication to assure that the approved release mechanism complies with the approved

plans and the requirements of this subpart;

(8) Full details of any other unique capability;

(9) Any other drawing(s) necessary to show that the release mechanism complies with the requirements of this subpart;

(10) The location or address of all manufacturing sites, including the name and address of any subcontractors, where the release mechanism will be constructed; and

(11) The name of the independent laboratory that will perform the duties prescribed in § 160.133-15 of this subpart.

(c) At the request of the manufacturer and discretion of the Commandant, an independent laboratory may conduct preapproval review required by this section, so long as the preapproval review is conducted in accordance with the procedures agreed upon between the independent laboratory and Commandant under 46 CFR part 159, subpart 159.010.

(d) *Plan quality.* The plans and specifications submitted to the Commandant under this section must—

(1) Be provided in English, including all notes, inscriptions, and designations for configuration control;

(2) Address each of the applicable items in paragraph (b) of this section in sufficient detail to show that the release mechanism meets the construction requirements of this subpart;

(3) Accurately depict the proposed release mechanism;

(4) Be internally consistent;

(5) Be legible; and

(6) If reviewed by an independent laboratory under paragraph (c) of this section, include the independent laboratory's attestation that the plans meet the quality requirements of this section.

(e) *Alternatives.* Alternatives in materials, parts, or construction, and each item replaced by an alternative, must be clearly indicated as such in the plans and specifications submitted to the Commandant under this section.

(f) *Coast Guard review.* If the plans or specifications do not comply with the requirements of this section, Coast Guard review may be suspended, and the applicant notified accordingly.