from foam already manufactured sufficient sample material for testing for compliance with the requirements of this specification. A copy of the marine inspector's report, together with the sample material and one copy of an independent laboratory test report will be forwarded to the Commandant and if satisfactory notice of acceptance will be given to the manufacturer.

(c) Acceptance of unicellular plastic foam prior to being incorporated into finished products, or during the course of manufacture, shall in no case be construed as a guarantee of the acceptance of the finished products.

(d) The manufacturer of the foam shall provide the manufacturer of the lifesaving equipment with an affidavit certifying that the foam conforms to all of the requirements of this subpart.

Subpart 164.018—Retroreflective Material for Lifesaving Equipment

SOURCE: CGD 76–028, 44 FR 38786, July 2, 1979, unless otherwise noted.

§ 164.018–1 Scope.

This subpart prescribes design requirements, approval tests, and procedures for approving retroreflective material used on lifesaving equipment.

§ 164.018–3 Classification.

The following types of retroreflective material are approved under this specification:

(a) Type I—Material used on flexible surfaces and rigid surfaces, except rigid surfaces that are continuously exposed.

(b) Type II—Weather resistant material used on continuously exposed rigid surfaces.

§ 164.018–5 Specifications and standards incorporated by reference.

(a) The following federal and military specifications and standards are incorporated by reference into this subpart:

(1) Federal Specification L-P-375 C (April 23, 1970), entitled ''Plastic Film, Flexible, Vinyl Chloride'', as amended by Amendment 2 of December 2, 1976.

(2) Federal Specification L-S-300 B (July 12, 1974), entitled ''Sheeting and Tape, Reflective: Nonexposed Lens, Adhesive Backing.''

(3) Federal Specification CCC-C-426 D (August 12, 1970), entitled ''Cloth, Drill, Cotton.''

(4) Federal Specification CCC-C-443 E (December 2, 1974), entitled ''Cloth, Duck, Cotton (Single and Plied Filling Yarns, Flat).''

(5) Federal Test Method Standard 141a (September 1, 1965), entitled ''Paint, Varnish, Lacquer and Related Materials; Methods of Inspection, Sampling and Testing.'' (Method 6141 ''Washability of Paints'', and Method 6142 ''Scrub Resistance'' as amended May 1, 1974).

(6) Federal Test Method Standard 370 (March 1, 1977), entitled ''Instrumental Photometric Measurements of Retroreflective Materials and Retroreflective Devices.''

(7) Military Specification MIL-C-17415 E (April 16, 1964), entitled ''Cloth, Coated, and Webbing, Inflatable Boat and Miscellaneous Use'', as amended by Amendment 5 of April 26, 1976.

(8) Military Specification MIL-R-21607 D (August 5, 1976), entitled ''Resins, Polyester, Low Pressure Laminating, Fire-retardant.''

(9) Military Specification MIL-C-43006 E (March 24, 1978), entitled ''Cloth and Strip Laminated, Vinyl Nylon High Strength, Flexible.''

(b) Federal and military specifications and standards may be obtained from Customer Service, Naval Publications, Forms Center, 5801 Tabor Ave., Philadelphia, Pa. 19120. These materials are also on file in the Federal Register library.

(c) Approval to incorporate by reference the materials listed in this section was obtained from the Director of the Federal Register on June 14, 1979.

(d) When changes are made to a specification or standard incorporated by reference into this subpart, the effective date for its use will be the effective date set by the issuing authority unless otherwise determined by the Coast Guard.

§ 164.018–7 Approval procedures.

(a) An application for approval of retroreflective material must be sent to the Commandant (G-MSE), U.S. Coast Guard, Washington, DC 20593–0001.

(b) Each application for approval must contain—(1) The name and address of the applicant;

(2) Two copies of plans or specifications of the material;

(3) A detailed description of the quality control procedures used in manufacturing the material; and

(4) A test report containing observations and results of approval testing conducted.

(c) The Commandant advises the applicant whether the retroreflective material is approved. If the material is approved, an approval certificate is sent to the applicant.

[CGD 76–028, 44 FR 38786, July 2, 1979, as amended by CGD 82–063b, 48 FR 4783, Feb. 3, 1983; CGD 88–070, 53 FR 34537, Sept. 7, 1988; CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50734, Sept. 27, 1996]

§ 164.018–9 Design requirements.

(a) Type I retroreflective material must be capable of being attached to lifesaving equipment either by sewing it to the equipment or by means of an adhesive. Type II material must be capable of being attached to lifesaving equipment either by mechanical fasteners or by an adhesive.

(b) The following information must be stated on retroreflective material or on the package in which it is supplied to a user:

(1) Each surface to which the retroreflective material is designed to be attached.

(2) The instructions for attaching the material to each surface described in paragraph (b)(1) of this section.

(c) When retroreflective material designed for use with an adhesive is tested in accordance with the ''adhesion'' test method listed in §164.018–11, the material must not peel for a distance of more than 5 cm (2 in.).

(d) When dry material is tested in accordance with the ''reflective intensity'' test method listed in §164.018–11, the reflective intensity of the material must be equal to or greater than the values for reflective intensity listed in Table 164.018–9.

(e) When wet material is tested in accordance with the ''reflective intensity during rainfall'' test method listed in §164.018–11, the reflective intensity of the material must be at least 90 percent of the values listed in Table 164.018–9.

(f) The reflective intensity of material after testing in accordance with the ''resistance to accelerated weathering'' test method listed in §164.018–11 must be at least 50 percent of the values listed in Table 164.018–9.

(g) After testing in accordance with the ''fungus resistance'' test method listed in §164.018–11, retroreflective material must not support fungus growth, and the reflective intensity of the material must be equal to or greater than the values for reflective intensity listed in Table 164.018–9.

(h) The reflective intensity of materials after testing in accordance with the ''resistance to water immersion'' test method described in §164.018–11, must be equal to or greater than the values listed in Table 164.018–9, except that retroreflectivity is not required in the area extending outward 5 mm (0.2 inches) from each side of the cuts made in the material.

(i) The reflective intensity of material after testing in accordance with the ''abrasion resistance'' test method described in §164.018–11(b)(2), must be at least 50 percent of the values listed in Table 164.018–9

(j) After retroreflective material is tested in accordance with the ''soil resistance and cleanability'' test method described in §164.018–11(b)(3) the material must not have any visible damage or permanent soiling.

(k) Except as provided in paragraphs (c) through (j) of this section, retroreflective material when tested in accordance with the test methods listed in §164.018–11 must meet the requirements prescribed for those test methods in Federal Specification L-S-300.

TABLE 164.018–9—REFLECTIVE INTENSITY

Divergence angle [1] (Observation angle) [2]	Incidence angle [1] (Entrance angle) [2]	Reflective intensity [1] (Specific intensity per unit area) [2]
0.2°	−4°	150
.2°	+30°	75
.2°	+45°	50
.5	−4°	57
.5	+30°	33
.5	+45°	25
2.0°	−4°	2.5
2.0°	+30°	2.0
2.0°	+45°	1.0

[1] These terms are described in Federal Specification L-S-300.

[2] These terms are described in Federal Test Method Standard 370.

§ 164.018–11 Approval tests.

(a) Retroreflective material submitted for Coast Guard approval must be tested in accordance with the following test methods described in Federal Specification L-S-300:

(1) Test conditions.

(2) Test panels.

(3) Adhesion test method using a 0.79 kg (1.75 lb.) test weight, except that one test panel must be immersed in distilled water in a covered container for 16 hours before the weight is applied and the other test panel must be immersed in salt water (4% NaCl by weight) in a covered container for 16 hours before the weight is applied. (This test method is required only for retroreflective material that is designed for use with an adhesive. If a particular test panel used in testing results in a test failure, the retroreflective material will not be approved for attachment to material of the type used as the test panel. The retroreflective material may nevertheless be approved for use with other types of material depending on the results of testing with the other panels. See paragraph (d) of this section for a listing of tests panels used.)

(4) Flexibility at standard conditions test method, except that when testing Type I material—

(i) The material must be unmounted;

(ii) A 1.5 mm (1/16-inch) mandrel must be used in place of the mandrel described in the test method; and

(iii) After testing at standard conditions, the material must be placed in a chamber at a temperature of −18 °C. (0 °F.) for at least 1 hour and then retested in the chamber at that temperature.

(5) Reflective intensity.

(6) Resistance to accelerated weathering test method and subtest methods ''reflective intensity after accelerated weathering,'' ''reflective intensity during rainfall,'' and ''adhesion after accelerated weathering.'' (The ''adhesion after accelerated weathering'' test method is required only for materials designed for use with an adhesive. The ''resistance to accelerated weathering'' test method must be performed for 250 hours, if testing Type I material, and for 1,000 hours if testing Type II material.)

(7) Resistance to heat, cold, and humidity.

(8) Fungus resistance.

(b) Retroreflective material submitted for approval must also be tested as follows:

(1) *Resistance to water immersion.* Two test panels are used. The test panels and test conditions must meet paragraphs (a)(1) and (a)(2) of this section. The retroreflective material on each test panel is cut with a sharp knife from each corner to the corner diagonally opposite so that an ''X'' is formed. The cuts must be made completely through the material to the metal panel. One panel is immersed in distilled water in a covered container. The other panel is immersed in salt water (4% NaCl by weight) in a covered container. After 16 hours in water, the panels are removed from the containers, rinsed of deposits, and dried. Reflective intensity values at the angles listed in Table 164.018–9 must be measured within 2 hours after removal of the panels from the water. When measuring the reflective intensity values, the area within 5 mm (0.2 in.) of either side of the ''X'' cuts, and within 5 mm of the cut edges of the material, must not be counted.

(2) *Abrasion resistance.* One test panel is used. The panel and test conditions must meet paragraphs (a)(1) and (a)(2) of this section. The test apparatus must meet Federal Test Method Standard 141, Method 6142, except that the brush must be dry. One thousand brush strokes are applied to the material. The test panel is then wiped with a clean soft cloth. Thereafter, the reflective intensity of the area of the material in contact with the brush is measured at the angles listed in Table 164.018–9.

(3) *Soil resistance and cleanability.* One panel is used. The test panel and test conditions must meet paragraphs (a)(1) and (a)(2) of this section. A soiling medium is applied to the material as described in Federal Test Method Standard 141, Method 6141. The soiled area is then covered with a laboratory watch glass or similar device. After 24 hours, the material is uncovered and the soil medium wiped off with a clean, dry,

soft cloth. The material is then wetted with mineral spirits and wiped with a cloth soaked in mineral spirits. Thereafter, it is washed with a 1 percent (by weight) solution of detergent in warm water and rinsed and dried with a clean, dry, soft cloth.

(c) Each measurement of reflective intensity required in paragraphs (a), (b)(1), and (b)(2) of this section must be made using either—

(1) The L-S-300 procedure for measuring reflective intensity; or

(2) The procedure for measuring specific intensity per unit area in Federal Test Method Standard 370, except that the test apparatus arrangement required in L-S-300 must be used.

(d) If material is designed for use with an adhesive, the ''adhesion'' test method required by paragraph (a)(3) of this section must be repeated using a 0.79 kg. (1.75 lb.) test weight and using each of the following materials as test panels in place of the aluminum test panels required by this test method:

(1) Smooth panel of cured polyester laminating resin meeting MIL-R-21607 (Types I and II material).

(2) Cotton drill (Type I material only) meeting CCC-C-426, or cotton duck meeting CCC-C-443 (Type I material only).

(3) Vinyl-nylon laminated cloth meeting MIL-C-43006 (Type I material only).

(4) Vinyl film meeting L-P-375 (Type I material only).

(5) Rubber coated cloth meeting MIL-C-17415 (Type I material only).

(e) Each flexible material listed in paragraph (d) of this section when used as a test panel must be bonded to a rigid backing.

(f) Test panel material listed in paragraph (d) of this section must—

(1) Be taken from an item of Coast Guard approved lifesaving equipment; or

(2) Be certified by the manufacturer of the material that it meets the applicable specification in paragraph (d) of this section.

§ 164.018–13 Production inspections.

The Coast Guard does not inspect retroreflective material approved under this subpart on a regular schedule. However, the Commandant may select samples and conduct tests and examinations whenever necessary to determine whether retroreflective material is being manufactured in compliance with the requirements of this subpart.

Subpart 164.019—Personal Flotation Device Components

SOURCE: CGD 84–068, 58 FR 29494, May 20, 1993, unless otherwise noted.

§ 164.019–1 Scope.

(a) This subpart contains general requirements for standard personal flotation device (PFD) components, procedures for acceptance of non-standard PFD components, and production quality control requirements for all PFD components, used in the construction of PFDs approved under part 160 of this subchapter.

(b) Other subparts of this part contain specific requirements applicable to particular PFD components used in the construction of Coast Guard-approved PFDs.

(c) Part 160 of this chapter contains specific requirements and limitations concerning the use of PFD components in the construction of particular Coast Guard-approved PFDs.

§ 164.019–3 Definitions.

Acceptance means certification by the Coast Guard that a component is suitable for use in the manufacture of Coast Guard-approved PFDs.

Commandant means the Chief of the Lifesaving and Fire Safety Division, Marine Safety and Environmental Protection, U.S. Coast Guard. Address: Commandant (G-MSE), U.S. Coast Guard Headquarters, 2100 Second St. SW., Washington, DC 20593–0001. Telephone: 202 372–1392.

Component manufacturer means either a component manufacturer or supplier seeking acceptance of a component, or a component manufacturer or supplier who has obtained acceptance of a component.

Inspector means a Coast Guard marine inspector, authorized representative of the Coast Guard, or a recognized laboratory representative.