change must be published in the FEDERAL REGISTER and the material made available. All approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the U.S. Coast Guard, Lifesaving and Fire Safety Division (CG-5214),2100 2nd St., SW., Stop 7126, Washington, DC 20593–7126.

(b) The materials approved for incorporation by reference in this subpart are:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

ASTM C 177–85 (1993), Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus—160.174–17

ASTM C 518–91, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus—160.174–17

ASTM D 975–98, Standard Specification for Diesel Fuel Oils—160.174–17

ASTM D 1004–94a, Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting—160.174–17

ASTM D 1518–85 (1990), Standard Test Method for Thermal Transmittance of Textile Materials—160.174–17

GENERAL SERVICES ADMINISTRATION

Specification Unit (WFSIA), Regional Office Building, Room 6039, 7th and D Streets SW., Washington, DC 20407

Federal Standard No. 751a—Stitches, Seams, and Stitchings.

National Bureau of Standards Special Publication 440—Color, Universal Language and Dictionary of Names.

[CGD 84–069b, 51 FR 19343, May 29, 1986, as amended by CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50733, Sept. 27, 1996; CGD 97–057, 62 FR 51049, Sept. 30, 1997; USCG–1999–6216, 64 FR 53228, Oct. 1, 1999; USCG –1999–5151, 64 FR 67184, Dec. 1, 1999; USCG–2009–0702, 74 FR 49238, Sept. 25, 2009]

§ 160.174–5 Independent laboratory.

(a) The approval and production tests and inspections in this subpart must be conducted by an independent laboratory accepted by the Coast Guard under subpart 159.010 of this chapter.

(b) [Reserved]

§ 160.174–7 Approval procedures.

(a) *General.* A thermal protective aid is approved by the Coast Guard under the procedures in subpart 159.005 of this chapter.

(b) *Approval testing.* Each approval test must be conducted in accordance with § 160.174–17.

§ 160.174–9 Construction.

(a) *General.* Each thermal protective aid must be constructed primarily of a durable insulating or heat reflecting material that meets the thermal insulation requirements in § 160.174–11(a). Each aid must be designed to cover the wearer's entire body, except for the area of the mouth, nose, and eyes.

(b) *Seams.* Stitching, if used in structural seams of a thermal protective aid, must be lock type stitching that meets the requirements in Federal Standard No. 751 for one of the following:

(1) Class 300 lockstitch.

(2) Class 700 single thread lock stitch.

(c) *Seam strength.* Each seam must have a strength of at least 225 Newtons (50 lb.).

(d) *Hardware.* All hardware of a thermal protective aid must be of a size and design that allows ease of operation by the wearer. The hardware must be attached to the aid in a manner that allows the wearer to operate it easily and that prevents it from attaining a position in which it can be operated improperly.

(e) *Metal parts.* Each metal part of a thermal protective aid must be—

(1) 410 stainless steel or have salt water and salt air corrosion characteristics equal to or superior to 410 stainless steel; and

(2) Galvanically compatible with each other metal part in contact with it.

(f) *Thermal protective aid exterior.* The primary color of the exterior surface of each thermal protective aid must be vivid reddish orange (color number 34 of National Bureau of Standards Publication 440). The exterior surface of the aid must resist tearing when tested as prescribed in § 160.174–17(i).

(g) *Hand and arm construction.* The hand of each thermal protective aid must be a glove that allows sufficient dexterity for the wearer to close and open the zipper or other hardware of the aid and to open and eat survival rations, unless the glove is removable.

The glove may not be removable unless it is attached to the arm and unless it can be secured to the arm or stowed in a pocket on the arm when not in use.

(h) *Retroreflective material.* Each thermal protective aid must be fitted with at least 200 cm^2 (31 sq. in.) of Type I retroreflective material that meets subpart 164.018 of this chapter.

(i) *Size.* Each thermal protective aid must fit persons ranging in weight from 50 kg. (110 lbs.) to 150 kg. (330 lbs.) and in height from 1.5 m. (59 in.) to 1.9 m. (75 in.).

(j) *Lifejacket.* Each thermal protective aid must be designed so that any Type I Personal Flotation Device meeting the requirements of this chapter can be worn inside the aid and, when worn, will not damage the aid and will not adversely affect its performance.

§ 160.174–11 Performance.

(a) *Thermal protection.* The thermal protective aid must be designed to protect against loss of body heat as follows:

(1) The thermal conductivity of the material from which the thermal protective aid is constructed must be not more than 0.25 W/(m − °K).

(2) The thermal protective aid must prevent evaporative heat loss.

(3) The aid must function properly at an air temperature of −30 °C (−22 °F) to +20 °C (68 °F).

(b) *Donning Time.* Each thermal protective aid must be designed to enable a person to don the aid correctly within one minute after reading the donning and use instructions described in § 160.174–15(a).

(c) *Storage Temperature.* A thermal protective aid must not be damaged by storage in its storage case at any temperature between −30 °C (−22 °F) and +65 C (149 °F).

(d) *In water performance.* The thermal protective aid must be designed to permit the wearer to remove it in the water within two minutes, if it impairs ability to swim.

(e) *Water penetration.* The fabric from which the thermal protective aid is constructed must maintain its watertight integrity when supporting a column of water 2 meters high.

(f) *Oil resistance.* Each thermal protective aid must be designed to be useable after 24 hours exposure to diesel oil.

§ 160.174–13 Storage case.

Each thermal protective aid must be provided with a ziplock bag or equivalent storage case.

§ 160.174–15 Instructions.

(a) Each thermal protective aid must have instructions for its donning and use in an emergency. The instructions must be in English and must not exceed 50 words. Illustrations must be used in addition to the words. The instructions must include advice as to whether to swim in the aid or discard it if the wearer is thrown into the water.

(b) The instructions required by paragraph (a) of this section must be on the exterior of the storage case, printed on a waterproof card attached to the storage case, or printed on the thermal protective aid and visible through a transparent storage case. The instructions must also be available in 8½×11 inch loose-leaf format for inclusion in the vessel's training manual.

§ 160.174–17 Approval testing.

(a) *General.* A thermal protective aid must be tested as prescribed in this section.

(b) *Mobility and swimming tests.* The mobility and swimming capabilities of each thermal protective aid must be tested under the following conditions and procedures:

(1) *Test subjects.* Seven males and three females must be used in the tests described in this paragraph. The subjects must represent each of the three physical types (ectomorphic, endomorphic, and mesomorphic). Each subject must be in good health. The heaviest male subject must weigh at least 25 kg (55 lb) more than the lightest male subject. The heaviest female subject must weigh at least 25 kg (55 lb) more than the lightest female subject. The heaviest subject must weigh 150±5 Kg (330±11 lbs.) and the lightest subject must weigh 50±5 Kg (110±11 lbs.). Each subject must be unfamiliar with the specific thermal protective aid under