

The applicant may observe the test and measurements.

(e) The Commandant sends a copy of the test report to the applicant and advises him whether the material is approved. If the material is approved, an approval certificate is sent to the applicant.

[CGD 74-129, 41 FR 41701, Sept. 23, 1976, 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; USCG-2009-0702, 74 FR 49238, Sept. 25, 2009]

#### § 164.009-11 Furnace apparatus.

(a) The test furnace apparatus consists of a furnace tube, stabilizer, draft shield, furnace stand, temperature coil controls with a voltage stabilizer, specimen holder, specimen insertion device, and three thermocouples (a furnace thermocouple to measure furnace temperature, a surface thermocouple to measure temperature at the surface of a specimen, and a specimen thermocouple to measure temperature at the center of a specimen). A detailed plan of the construction and arrangement of the furnace apparatus may be obtained from the Commandant (CG-521).

(b) Temperatures measured by the thermocouples are recorded by an instrument having a measuring range that corresponds to the temperature changes that occur during a furnace calibration or test. The temperature recording equipment is accurate to within at least 0.5 percent of temperatures recorded during a test.

[CGD 74-129, 41 FR 41701, Sept. 23, 1976, as amended by CGD 82-063b, 48 FR 4783, Feb. 3, 1983; CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50734, Sept. 27, 1996; USCG-2009-0702, 74 FR 49238, Sept. 25, 2009]

#### § 164.009-13 Furnace calibration.

A calibration is performed on each new furnace and on each existing furnace as often as necessary to ensure that the furnace is in good working order. In each calibration the energy input to the furnace is adjusted so that the furnace thermocouple gives a steady reading of  $750 \pm 10$  °C. The wall temperature of the furnace tube is then measured by an optical micro-pyrometer at intervals of 10mm on 3 equally spaced vertical axes. The furnace is

correctly calibrated if the temperature of the furnace tube wall is between 825 and 875 °C. 50 mm above and below the midline of the wall and if the average wall temperature is approximately 850 °C.

#### § 164.009-15 Test procedure.

(a) *General.* Paragraphs (b) through (k) of this section contain the test procedures for each material submitted for approval, except fiberglass and other materials that melt at  $750 \pm 10$  °C. Paragraph (l) of this section contains test procedures for fiberglass and other materials that melt at  $750 \pm 10$  °C.

(b) *Preparation of specimens.* (1) The designated laboratory prepares 5 cylindrical specimens representative of the properties of the sample submitted for testing. The dimensions of each specimen are as follows:

diameter:  $45(+2/-0)$  mm

height:  $50 \pm 3$  mm

volume:  $80 \pm 5$  cm<sup>3</sup>

(2) If the height of the sample, except a composite material, is less than 47 mm, the specimens prepared consist of layers of the sample.

(3) If the sample is a composite material and has a height that is not  $50 \pm 3$  mm, the layers of the specimen prepared are proportional in thickness to the layers of the sample.

(4) The top and bottom faces of each specimen prepared are the faces of the material as manufactured.

(5) If it is not practicable to prepare a specimen by the procedures described in paragraphs (b)(2) through (b)(4) of this section, the test is performed on five specimens of each component of the sample made to the dimensions prescribed in paragraph (b)(1) of this section.

(c) *Conditioning of specimen.* Each specimen is conditioned for at least 20 hours in a ventilated oven maintained at  $60 \pm 5$  °C. and is then cooled to room temperature in a desiccator.

(d) *Weight of specimen.* The weight of each conditioned specimen after cooling is determined before it is tested.

(e) *Placement of specimen in holder.* After a specimen is conditioned and weighed, it is placed in the specimen