

line of which at its lowest point at side is less than 7 feet (2.14 meters) above the deepest load line, an indicator light for each door which warns when the door is open must be installed on the bridge.

[CGD 79-023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 80-159, 51 FR 33059, Sept. 18, 1986]

§ 170.260 Class 2 doors; permissible locations.

(a) Except as provided in paragraphs (b) and (c) of this section, a Class 2 door is permitted only if—

(1) Its sill is above the deepest load line; and

(2) It is not a door described in § 170.265(d).

(b) If passenger spaces are located below the bulkhead deck, Class 2 doors with sills below the deepest load line may be used if—

(1) The number of watertight doors located below the deepest load line that are used intermittently during operation of the vessel does not exceed two, and;

(2) The doors provide access to or are within spaces containing machinery.

(c) If no passenger spaces are located below the bulkhead deck, Class 2 doors may be used if the number of watertight doors located below the deepest load line that are used intermittently during operation of the vessel does not exceed five.

(d) In determining whether Class 2 doors are allowed under paragraph (c) of this section, the watertight doors at the entrance to shaft tunnels need not be counted. If Class 2 doors are allowed under paragraph (c) of this section, the doors at the entrance to shaft tunnels may also be Class 2.

§ 170.265 Class 3 doors; required locations.

The following doors must always be Class 3:

(a) Doors in all locations not addressed in §§ 170.255 and 170.260.

(b) Doors between coal bunkers below the bulkhead deck that must be opened at sea.

(c) Doors into trunkways that pass through more than one main transverse watertight bulkhead if the door

sills are less than 2.14 meters above the deepest load line.

(d) Doors below a deck, the molded line of which, at its lowest point at side, is less than 2.14 meters (7 feet) above the deepest load line if—

(1) The vessel is engaged on a short international voyage as defined in § 171.010 of this subchapter; and

(2) The vessel is required by § 171.065 of this subchapter to have a factor of subdivision of 0.5 or less.

[CGD 79-023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 85-080, 61 FR 944, Jan. 10, 1996; CGD 96-041, 61 FR 50734, Sept. 27, 1996]

§ 170.270 Door design, operation, installation, and testing.

(a) Each Class 1 door must have a quick action closing device operative from both sides of the door.

(b) Each Class 1 door on a vessel in ocean service must be designed to withstand a head of water equivalent to the depth from the sill of the door to the margin line but in no case less than 10 feet (3.05 meters).

(c) Each Class 2 and Class 3 door must—

(1) Be designed, constructed, tested, and marked in accordance with ASTM F 1196 (incorporated by reference, see § 170.015);

(2) Have controls in accordance with ASTM F 1197 (incorporated by reference, see § 170.015); and

(3) If installed in a subdivision bulkhead, meet Supplemental Requirements Nos. S1 and S3 of ASTM F 1196 (incorporated by reference, see § 170.015), unless the watertight doors are built in accordance with plans previously approved by the Coast Guard, in which case, only Supplemental Requirements Nos. S1 and S3.1.4 of ASTM F 1196 (incorporated by reference, see § 170.015) must be met. In either case, control systems for watertight doors must have power supplies, power sources, installation tests and inspection, and additional remote operating consoles in accordance with Supplemental Requirements Nos. S1 through S4 of ASTM F 1197 (incorporated by reference, see § 170.015).

(d) Installations of sliding watertight door assemblies must be in accordance with the following:

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(1) Before a sliding watertight door assembly is installed in a vessel, the bulkhead in the vicinity of the door opening must be stiffened. Such bulkhead stiffeners, or deck reinforcement where flush deck door openings are desired, must not be less than 6 inches nor more than 12 inches from the door frame so that an unstiffened diaphragm of bulkhead plating 6 to 12 inches wide is provided completely around the door frame. Where such limits cannot be maintained, alternative installations will be considered by the Marine Safety Center. In determining the scantlings of these bulkhead stiffeners, the door frame should not be considered as contributing to the strength of the bulkhead. Provision must also be made to adequately support the thrust bearings and other equipment that may be mounted on the bulkhead or deck.

(2) Sliding watertight door frames must be either bolted or welded watertight to the bulkhead.

(i) If bolted, a suitable thin heat and fire resistant gasket or suitable compound must be used between the bulkhead and the frame for watertightness. The bulkhead plating must be worked to a plane surface in way of the frame when mounting.

(ii) If welded, caution must be exercised in the welding process so that the door frame is not distorted.

(e) For each watertight door which is in a required subdivision bulkhead, an indicator light must be installed in the pilothouse and at each other vessel operating station from which the door is not visible. The indicator must show whether the door is open or closed.

[CGD 79-023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 88-032, 56 FR 35828, July 29, 1991; CGD 85-080, 61 FR 944, Jan. 10, 1996; USCG-2000-7790, 65 FR 58464, Sept. 29, 2000]

§ 170.275 Special requirements for cargo space watertight doors.

(a) A door between cargo spaces—

(1) Must not be designed for remote operation;

(2) Must be located as high as practicable; and

(3) Must be located as far inboard of the side shell as practicable but in no case closer to the side shell than one-fifth of the beam of the vessel where

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the beam is measured at right angles to the centerline of the vessel at the level of the deepest load line.

(b) If the door is accessible while the ship is in operation, it must have installed a lock or other device that prevents unauthorized opening.

(c) Before installing a watertight door in a cargo space, approval must be obtained from the Commanding Officer, Marine Safety Center.

[CGD 79-023, 48 FR 51010, Nov. 4, 1983, as amended by CGD 88-070, 53 FR 34537, Sept. 7, 1988]

Subpart I—Free Surface

§ 170.285 Free surface correction for intact stability calculations.

(a) When doing the intact stability calculations required by this subchapter, the virtual increase in the vessel's vertical center of gravity due to liquids in tanks must be determined by calculating—

(1) For each type of consumable liquid, the maximum free surface effect of at least one transverse pair of wing tanks or a single centerline tank; and

(2) The maximum free surface effect of each partially filled tank containing non-consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.

§ 170.290 Free surface correction for damage stability calculations.

(a) When doing the damage stability calculations required by this subchapter, the virtual increase in the vessel's vertical center of gravity due to liquids in tanks must be determined by calculating—

(1) For each type of consumable liquid, the free surface effect of at least one transverse pair of wing tanks or a single centerline tank; and

(2) The free surface effect of each partially filled tank containing other than consumable liquids.

(b) For the purpose of paragraph (a)(1) of this section, the tank or combination of tanks selected must be those having the greatest free surface effect.