

§ 174.190

TABLE 174.185—MINIMAL FREEBOARD AT THE STERN

LBP in meters (feet)	Freeboard at stern in millimeters (inches)
Less than 20 (65)	300 (12)
20 (65) but less than 30 (100)	380 (15)
30 (100) but less than 40 (130)	400 (18)
40 (130) but less than 50 (155)	500 (20)
50 (155) but less than 60 (190)	560 (22)
60 (190) but less than 70 (230)	610 (24)
70 (230) and greater	660 (26)

§ 174.190 Collision bulkhead.

(a) Each OSV must have a collision bulkhead in compliance with §§ 171.085(c)(1), (d), (e)(2), and (f) of this chapter.

(b) Penetration of the collision bulkhead by piping must be minimal, and, where fitted, piping must meet the requirements of §§ 56.50-1(b)(1) and (c) and 128.230 of this chapter.

§ 174.195 Bulkheads in machinery spaces.

(a) The bulkhead in each machinery space of each OSV must be watertight to the bulkhead deck.

(b) Each penetration of, and each opening in, a bulkhead in a machinery space must—

(1) Be kept as high and as far inboard as practicable; and

(2) Except as provided by § 174.210 of this subpart and by paragraph (c) of this section, have means to make it watertight.

(c) No penetration of a bulkhead in a machinery space by a ventilation duct need have means to make the bulkhead watertight if—

(1) Every part of the duct is at least 760 millimeter (30 inches) from the side of the OSV; and

(2) The duct is continuously watertight from the penetration to the main deck.

(d) Each penetration of a bulkhead in a machinery space by piping must meet the design requirements for material and pressure in subchapter F of this chapter.

§ 174.200 Damaged stability in machinery spaces for all OSVs.

Each OSV must be shown by design calculations to comply, under each afloat condition of loading and oper-

ation, with § 174.207 of this subpart in case of damage between any two watertight bulkheads in each machinery space.

§ 174.205 Additional damaged stability for OSVs carrying more than 16 offshore workers.

(a) *Calculations.* Each OSV carrying more than 16 offshore workers must be shown by design calculations to comply, under each afloat condition of loading and operation, with § 174.207 of this subpart in case of the damage specified by paragraph (b) of this section.

(b) *Character of damage.* For paragraph (a) of this section, design calculations must show that the OSV can survive damage at any place other than either the collision bulkhead or a transverse watertight bulkhead unless—

(1) The transverse watertight bulkhead is closer than the longitudinal extent of damage, specified by Table 174.207(a), to the adjacent transverse watertight bulkhead; or

(2) The transverse watertight bulkhead has a step or a recess, which must be assumed damaged, if it is both more than 3 meters (10 feet) in length and located within the transverse extent of damage specified by Table 174.207(a) of this section.

§ 174.207 Damaged stability criteria.

(a) *Extent of damage.* Damage must consist of penetrations having the dimensions specified by table 174.207(a) of this section, except that, if the most disabling penetrations are smaller than the penetrations specified by the table, damage must consist of the smaller penetrations.

(b) *Permeability of spaces.* The permeability of a floodable space must be as specified by Table 174.207(b) of this section.

(c) *Survival conditions.* An OSV is presumed to survive assumed damage if it meets the following conditions in the final stage of flooding:

(1) *Final waterline.* The final waterline, in the final stage of sinkage, heel, and trim, must be below the lower edge of an opening through which progressive flooding may take place, such as an air pipe, a tonnage opening, an

opening closed by a weathertight door or hatch-cover, or a tank vent fitted with a ball check-valve. This opening does not include an opening closed by a—

- (i) Watertight manhole-cover;
- (ii) Flush scuttle;
- (iii) Small hatch-cover for a watertight cargo-tank that maintains the high integrity of the deck;
- (iv) Watertight door in compliance with § 174.210 of this subpart; or
- (v) Side scuttle of the non-opening type.

(2) *Angle of heel.* The angle of heel must not exceed 15 degrees.

(3) *Range of stability.* Through an angle of 20 degrees beyond its position of equilibrium after flooding, an OSV must meet the following conditions:

- (i) The righting arm curve must be positive.
- (ii) The righting arm must be at least 100 millimeters (4 inches).
- (iii) Each submerged opening must be weathertight. (A tank vent fitted with a ball check-valve is weathertight.)

(4) *Progressive flooding.* Piping, ducts, or tunnels within the assumed extent of damage must be either—

- (i) Equipped with arrangements, such as stop check-valves, to prevent progressive flooding of the spaces with which they connect; or
- (ii) Assumed in the calculations required by paragraph (a) of this section to permit progressive flooding of the spaces with which they connect.

(d) *Buoyancy of superstructure.* For paragraph (a) of this section, the buoyancy of any superstructure directly above the side damage must be considered in the most unfavorable condition.

TABLE 174.207(a)—EXTENT OF DAMAGE

	Collision Penetration
Longitudinal extent (vessels with LBP not greater than 45 meters [143 feet]).	.1L or 1.8 meters (6 feet); whichever is greater in length.
Longitudinal extent (vessels with LBP greater than 45 meters [143 feet]).	3 meters (10 feet) + .03L.
Transverse extent*	760 millimeters (30 inches).

TABLE 174.207(a)—EXTENT OF DAMAGE—Continued

Vertical extent.	From baseline upward without limit.
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*The transverse penetration applies inboard from the side of the vessel, at right angles to the centerline, at the level of the deepest load waterline.

TABLE 174.207(b)—PERMEABILITY OF SPACES

Spaces and tanks	Permeability
Storerooms	60 percent.
Accommodations	95 percent.
Machinery	85 percent.
Voids and passageways	95 percent.
Dry-bulk tanks	0 (*) or 95 percent.
Consumable-liquid tanks	0 (*) or 95 percent.
Other liquid tanks	0 (*) 0 (**) or 95 percent.

*Whichever results in the more disabling condition.
 **If tanks are partly filled, the permeability must be determined from the actual density and amount of liquid carried.

§ 174.210 Watertight doors in watertight bulkheads.

(a) This section applies to each vessel with watertight doors in bulkheads made watertight in compliance with this chapter.

(b) Except as provided by paragraph (c) of this section, each watertight door must comply with subpart H of part 170 of this chapter.

(c) A Class-1 door may be installed at any place if—

(1) The door has a quick-acting closing-device operative from both sides of the door;

(2) The door is designed to withstand a head of water equivalent to the depth from the sill of the door to the bulkhead deck or 3 meters (10 feet), whichever is greater; and

(3) The vessel's pilothouse contains a visual indicator showing whether the door is open or closed.

(d) Each watertight door must be marked in compliance with § 131.893 of this chapter.

(e) If a Class-1 door is installed, the vessel's stability letter will require the master to ensure that the door is always closed except when being used for access.

§ 174.215 Drainage of weather deck.

The weather deck must have open rails to allow rapid clearing of water, or must have freeing ports in compliance with § 42.15-70 of this chapter.