

TABLE 171.065(a) (METRIC UNITS)

Vessel length (LBP)	Criterion numeral (CN)	FS
Vessel length greater than 120 meters.	CN less than or equal to 23	A
	CN greater than 23 and less than 123.	F1
Vessel length greater than or equal to 61 meters and less than or equal to 120 meters.	CN greater than or equal to 123.	B
	CN less than or equal to S.	1
Vessel length greater than or equal to 61 meters and less than or equal to 120 meters.	CN greater than S and less than 123.	F2
	CN greater than or equal to 123.	B
Vessel length less than 61 meters.	.....	1

Where—  
 FS=the factor of subdivision.  
 $CN=60((M+2P)/V)+2787(N/L^2)$   
 $A=(58/(L-49))+0.18$   
 $B=(29/(L-26))+0.18$   
 $F1=A - ((A - B)(CN - 23)/100)$   
 $S=(323.5 - 25L)/14.6$   
 $F2=1 - ((1 - B)(CN - S)/(123 - S))$   
 L=the length of the vessel (LBP) in meters.  
 M=the sum of the volume of the machinery space and the volumes of any fuel tanks which are located above the inner bottom forward or aft of the machinery space in cubic meters.  
 P=the volume of passenger spaces below the margin line.  
 V=the volume of the vessel below the margin line.  
 N=the number of passengers that the vessel is to be certificated to carry.

TABLE 171.065(b)—TABLE OF X

Vessel LBP in feet (meters)	X <sup>1</sup>
430 (131) .....	1.336
440 (134) .....	1.285
450 (137) .....	1.230
460 (140) .....	1.174
470 (143) .....	1.117
480 (146) .....	1.060
490 (149) .....	1.002
500 (152) .....	0.944
510 (155) .....	0.885
520 (158) .....	0.826
530 (162) .....	0.766
540 (165) .....	0.706
550 (168) .....	0.645
554 (169) and up .....	0.625

<sup>1</sup> Interpolate for intermediate values.

**§ 171.066 Calculation of permeability for Type I subdivision.**

(a) Except as prescribed in paragraph (b) of this section, the following permeabilities must be used when doing the calculations required to demonstrate compliance with § 171.065(a), (b), and (c):

(1) When doing calculations required to demonstrate compliance with § 171.065(a) and (b), the uniform average permeability given by the formulas in Table 171.066 must be used.

(2) When doing calculations required to demonstrate that compartments on opposite sides of a main transverse watertight bulkhead that bounds the machinery space comply with § 171.065(c), the mean of the uniform average permeabilities determined from Table 171.066 for the two compartments must be used.

(b) If an average permeability can be calculated that is less than that given by the formulas in Table 171.066, the lesser value may be substituted if approved by the Commanding Officer, Marine Safety Center. When determining this lesser value, the following permeabilities must be used:

(1) 95% for passenger, crew, and all other spaces that, in the full load condition, normally contain no cargo, stores, provisions, or mail.

(2) 60% for cargo, stores, provisions, or mail spaces.

(3) 85% for spaces containing machinery.

(4) Values approved by the Commanding Officer, Marine Safety Center for double bottoms, oil fuel, and other tanks.

(c) In the case of unusual arrangements, the Commanding Officer, Marine Safety Center may require a detailed calculation of average permeability for the portions of the vessel forward or aft of the machinery spaces. When doing these calculations, the permeabilities specified in paragraph (b) of this section must be used.

(d) When calculating permeability, the total volume of the 'tween deck spaces between two adjacent main transverse watertight bulkheads that contains any passenger or crew space must be regarded as passenger space volume, except that the volume of any space that is completely enclosed in steel bulkheads and is not a crew or passenger space may be excluded.

TABLE 171.066—TABLE OF UNIFORM AVERAGE PERMEABILITIES

Location	Uniform average permeability
Machinery space .....	10 (a-c)
	85+ $\frac{v}{v}$
Volume forward of machinery space .....	35(a)
	63+ _____

TABLE 171.066—TABLE OF UNIFORM AVERAGE PERMEABILITIES—Continued

Location	Uniform average permeability
	v
	35(a)
Volume aft of machinery space .....	63+ $\frac{v}{v}$

For each location specified in this table—  
 a=volume below the margin line of all spaces that, in the full load condition, normally contain no cargo, baggage, stores, provisions, or mail.  
 c=volume below the margin line of the cargo, stores, provisions, or mail spaces within the limits of the machinery space.  
 v=total volume below the margin line.

[CGD 79-023, 48 FR 51017, Nov. 4, 1983, as amended by CGD 88-070, 53 FR 34537, Sept. 7, 1988]

**§ 171.067 Treatment of stepped and recessed bulkheads in Type I subdivision.**

- (a) For the purpose of this section—
  - (1) The main transverse watertight bulkhead immediately forward of a stepped bulkhead is referred to as bulkhead 1; and
  - (2) The main transverse watertight bulkhead immediately aft of the stepped bulkhead is referred to as bulkhead 3.
- (b) If a main transverse watertight bulkhead is stepped, it and bulkheads 1 and 3 must meet one of the following conditions:
  - (1) The separation between bulkheads 1 and 3 must not exceed the following:
    - (i) If the factor of subdivision (FS) determined from §171.065 (a) or (b) is greater than 0.9, the distance between bulkheads 1 and 3 must not exceed the maximum separation calculated to demonstrate compliance with §171.065.
    - (ii) If the factor of subdivision is 0.9 or less, the distance between bulkheads

1 and 3 must not exceed 90% of the floodable length or twice the maximum bulkhead separation calculated to demonstrate compliance with §171.065, whichever is smaller.

(2) Additional watertight bulkheads must be located as shown in Figure 171.067(a) so that distances A, B, C, and D, illustrated in Figure 171.067(a), satisfy the following:

- (i) Distances A and B must not exceed the maximum spacing allowed by §171.065.
- (ii) Distances C and D must not be less than the minimum separation prescribed by §171.065(e).

(3) The distance A, illustrated in Figure 171.067(b), must not exceed the maximum length determined in §171.065 corresponding to a margin line taken 3 inches (7.6 cm) below the step.

(c) A main transverse bulkhead may not be recessed unless all parts of the recess are inboard from the shell of the vessel a distance A as illustrated in Figure 171.067(c).

(d) Any part of a recess that lies outside the limits defined in paragraph (c) of this section must be treated as a step in accordance with paragraph (b) of this section.

(e) The distance between a main transverse watertight bulkhead and the transverse plane passing through the nearest portion of a recessed bulkhead must be greater than the minimum separation specified by §171.065(e).

(f) If a main transverse bulkhead is stepped or recessed, equivalent plane bulkheads must be used in the calculations required to demonstrate compliance with §171.065.