

underdeck passages, etc.) shall be provided for the protection of the crew in getting to and from their quarters, the machinery space and all other parts used in the necessary work of the vessel.

(e) Deck cargo carried on any vessel shall be so stowed that any opening which is in way of the cargo and which gives access to and from the crew's quarters, the machinery space and all other parts used in the necessary work of the vessel, can be properly closed and secured against the admission of water. Effective protection for the crew in the form of guard rails or life lines shall be provided above the deck cargo if there is no convenient passage on or below the deck of the vessel.

[CGFR 68-60, 33 FR 10062, July 12, 1968, as amended by CGFR 68-126, 34 FR 9014, June 5, 1969; CGD 74-164, 41 FR 1470, Jan. 8, 1976]

**§ 42.15-80 Special conditions of assignment for Type "A" vessels.**

(a) *Machinery casings.* Machinery casings on Type "A" vessels as defined in § 42.09-5(b) must be protected by an enclosed poop or bridge of at least standard height, or by a deckhouse of equal height and equivalent strength, except that machinery casings may be exposed if there are no openings giving direct access from the freeboard deck to the machinery space. A door complying with the requirements of § 42.15-10 is permitted in the machinery casing if it leads to a space or passageway which is as strongly constructed as the casing and is separated from the stairway to the engine room by a second weather-tight door of steel or equivalent material.

(b) *Gangway and access.* (1) An efficiently constructed fore and aft permanent gangway of sufficient strength shall be fitted on Type "A" vessels at the level of the superstructure deck between the poop and the midship bridge or deckhouse where fitted, or equivalent means of access shall be provided to carry out the purpose of the gangway, such as passages below deck. Elsewhere, and on Type "A" vessels without a midship bridge, arrangements to the satisfaction of the assigning authority shall be provided to safeguard the crew in reaching all parts used in the necessary work of the ship.

(2) Safe and satisfactory access from the gangway level shall be available between separates crew accommodations and also between crew accommodations and the machinery space.

(c) *Hatchways.* Exposed hatchways on the freeboard and forecastle decks or on the tops of expansion trunks on Type "A" vessels shall be provided with efficient watertight covers of steel or other equivalent material.

(d) *Freeing arrangements.* (1) Type "A" vessels with bulwarks shall have open rails fitted for at least half the length of the exposed parts of the weather deck or other effective freeing arrangements. The upper edge of the sheer strake shall be kept as low as practicable.

(2) Where superstructures are connected by trunks, open rails shall be fitted for the whole length of the exposed parts of the freeboard deck.

[CGFR 68-60, 33 FR 10063, July 12, 1968, as amended by CGFR 68-126, 34 FR 9014, June 5, 1969; CGD 79-153, 48 FR 38647, Aug. 25, 1983]

**Subpart 42.20—Freeboards**

**§ 42.20-3 Freeboard assignment: Type "A" vessels.**

(a) A Type "A" vessel is assigned a freeboard not less than that based on Table 42.20-15(a)(1) provided that the vessel meets the flooding standard in § 42.20-6.

(b) A vessel that meets the requirements of Subpart D, F, or G of Part 172 of this chapter is considered by the Coast Guard as meeting the flooding standard referenced in paragraph (a) of this section.

[CGD 79-153, 48 FR 38647, Aug. 25, 1983 as amended by CGD 79-023, 49 FR 26593, June 28, 1984]

**§ 42.20-5 Freeboard assignment: Type "B" vessels.**

(a) Each Type "B" vessel is assigned a freeboard from Table 42.20-15(b)(1) that is increased or decreased by the provisions of this section.

(b) Each Type "B" vessel that has a hatchway in position 1, must have the freeboard assigned in accordance with paragraph (a) of this section increased by the amount given in Table 42.20-5(b) unless the hatch cover complies with:

(1) Section 42.15-25(d); or

§ 42.20-5

46 CFR Ch. I (10-1-06 Edition)

(2) Section 42.15-30.

TABLE 42.20-5(B)—FREEBOARD INCREASE OVER TABULAR FREEBOARD FOR TYPE “B” VESSELS WITH HATCH COVERS NOT COMPLYING WITH § 42.15-25(D) OR § 42.15-30.

[Metric]

Length of ship (meters)	Freeboard increase <sup>1</sup> (millimeters)
<sup>2</sup> 108	50
109	52
110	55
111	57
112	59
113	62
114	64
115	68
116	70
117	73
118	76
119	80
120	84
121	87
122	91
123	95
124	99
125	103
126	108
127	112
128	116
129	121
130	126
131	131
132	136
133	142
134	147
135	153
136	159
137	164
138	170
139	175
140	181
141	186
142	191
143	196
144	201
145	206
146	210
147	215
148	219
149	224
150	228
151	232
152	236
153	240
154	244
155	247
156	251
157	254
158	258
159	261
160	264
161	267
162	270
163	273
164	275
165	278
166	280
167	283
168	285
169	287
170	290
171	292

TABLE 42.20-5(B)—FREEBOARD INCREASE OVER TABULAR FREEBOARD FOR TYPE “B” VESSELS WITH HATCH COVERS NOT COMPLYING WITH § 42.15-25(D) OR § 42.15-30.—Continued

[Metric]

Length of ship (meters)	Freeboard increase <sup>1</sup> (millimeters)
172	294
173	297
174	299
175	301
176	304
177	306
178	308
179	311
180	313
181	315
182	318
183	320
184	322
185	325
186	327
187	329
188	332
189	334
190	336
191	339
192	341
193	343
194	346
195	348
196	350
197	353
198	355
199	357
<sup>3</sup> 200	358

<sup>1</sup>Freeboards at intermediate lengths of ship shall be obtained by linear interpolation.

<sup>2</sup>108 and below.

<sup>3</sup>Ships above 200 meters in length are subject to individual determination by the Commandant.

[English]

Length of ship (feet)	Freeboard increase <sup>1</sup> (inches)
<sup>2</sup> 350	2.0
360	2.3
370	2.6
380	2.9
390	3.3
400	3.7
410	4.2
420	4.7
430	5.2
440	5.8
450	6.4
460	7.0
470	7.6
480	8.2
490	8.7
500	9.2
510	9.6
520	10.0
530	10.4
540	10.7
550	11.0
560	11.4
570	11.8
580	12.1
590	12.5
600	12.8
610	13.1

[English]

Length of ship (feet)	Freeboard increase <sup>1</sup> (inches)
620	13.4
630	13.6
640	13.9
650	14.1
<sup>3</sup> 660	14.3

<sup>1</sup> Freeboards at intermediate lengths of ship be obtained by linear interpolation.

<sup>2</sup> 350 and below.

<sup>3</sup> Ships above 660 feet in length are subject to individual determination by the Commandant.

(c) Any Type “B” vessel that is greater than 100 meters (328 feet) in length and any hopper dredge meeting the requirements in Subpart C of Part 44 of this chapter may have a reduced freeboard from that assigned under Table 42.20-15(b)(1) in accordance with paragraph (d) or paragraph (e) of this section if—

(1) The measures provided for the protection of the crew are adequate;

(2) The freeing arrangements are adequate; and

(3) The hatchway covers in positions 1 and 2 comply with the provisions of § 42.15-30 and have adequate strength, special care being given to their sealing and securing arrangements.

(d) The freeboards for a Type “B” vessel which comply with paragraph (c) of this section may be reduced up to 60 percent of the total difference between the freeboards in Table 42.20-15(b)(1) and Table 42.20-15(a)(1) provided that the vessel meets the flooding standard in § 42.20-7.

(e) The freeboards for a Type “B” vessel which complies with paragraph (c) of this section may be reduced up to the total difference between the freeboard tables referenced in paragraph (d) of this section provided that the vessel meets the flooding standard in § 42.20-8 and the provisions of § 42.15-80 (a), (b) and (d) as if it were a Type “A” vessel.

[CGD 79-153, 48 FR 38647, Aug. 25, 1983, as amended by CGD 76-080, 54 FR 36976, Sept. 6, 1989]

#### § 42.20-6 Flooding standard: Type “A” vessels.

(a) Design calculations must be submitted that demonstrate that the vessel will remain afloat in the conditions of equilibrium specified in § 42.20-12 assuming the damage specified in § 42.20-

11 as applied to the following flooding standards:

(1) If the vessel is over 150 meters (492 feet) in length it must be able to withstand the flooding of any one compartment, except the machinery space.

(2) If the vessel is over 225 meters (738 feet) in length, it must be able to withstand the flooding of any one compartment, treating the machinery space as a floodable compartment.

(b) When doing the calculations required in paragraph (a) of this section, the following permeabilities must be assumed:

(1) 0.95 in all locations except the machinery space.

(2) 0.85 in the machinery space.

[CGD 79-153, 48 FR 38648, Aug. 25, 1983]

#### § 42.20-7 Flooding standard: Type “B” vessel, 60 percent reduction.

(a) Design calculations must be submitted that demonstrate that the vessel will remain afloat in the conditions of equilibrium specified in § 42.20-12 assuming the damage specified in § 42.20-11 as applied to the following flooding standards:

(1) If the vessel is 225 meters (738 feet) or less in length, it must be able to withstand the flooding of any one compartment, except the machinery space.

(2) If the vessel is over 225 meters (738 feet) in length, it must be able to withstand the flooding of any one compartment, treating the machinery space as a floodable compartment.

(b) When doing the calculations required in paragraph (a) of this section, the following permeabilities must be assumed:

(1) 0.95 in all locations except the machinery space.

(2) 0.85 in the machinery space.

[CGD 79-153, 48 FR 38648, Aug. 25, 1983]

#### § 42.20-8 Flooding standard: Type “B” vessel, 100 percent reduction.

(a) Design calculations must be submitted that demonstrate that the vessel will remain afloat in the conditions of equilibrium specified in § 42.20-12 assuming the damage specified in § 42.20-11 as applied to the following flooding standards:

(1) If the vessel is 225 meters (738 feet) or less in length, it must be able to