§ 171.052 Passenger heel requirements for pontoon vessels.

(a) Each pontoon vessel, in each condition of loading and operation, must have an area under the righting arm curve from the angle of equilibrium to an angle of 40 degrees, the downflooding angle, or the angle of the maximum righting arm, whichever is less, of at least:

(1) For operation on exposed or partially protected waters—
   (i) 10 foot-degrees with a crowding density of 5 square feet per person (2.15 persons per square meter); and
   (ii) 7 foot-degrees with a crowding density of 2 square feet per person (5.38 persons per square meter); and

(2) For operation on protected waters—
   (i) 5 foot-degrees with a crowding density of 5 square feet per person (2.15 persons per square meter); and
   (ii) 2 foot-degrees with a crowding density of 2 square feet per person (5.38 persons per square meter).

(b) When assessing compliance with the criteria of this section, passengers are assumed to be distributed in all areas accessible to passengers so as to produce the most unfavorable combination of heel and trim.


§ 171.055 Intact stability requirements for a monohull sailing vessel or a monohull auxiliary sailing vessel.

(a) Except as specified in paragraph (b) of this section, each monohull sailing vessel and auxiliary sailing vessel must be shown by design calculations to meet the stability requirements in this section.

(b) Additional or different stability requirements may be needed for a vessel of unusual form, proportion, or rig. The additional requirements, if needed, will be prescribed by the Commandant.

(c) Each vessel must have positive righting arms in each condition of loading and operation from—

(1) 0 to at least 70 degrees of heel for service on protected or partially protected waters; and

(2) 0 to at least 90 degrees of heel for service on exposed waters.

(d) Each vessel must be designed to satisfy the following equations:

(1) For a vessel in service on protected or partially protected waters—

\[ \frac{1000(W)HZA}{(A)(H)} \geq X \]

\[ \frac{1000(W)HZB}{(A)(H)} \geq Y \]

\[ \frac{1000(W)HZC}{(A)(H)} \geq Z \]

where—

\[ X = 1.0 \text{ long tons/sq. ft. (10.9 metric tons/sq. meter)} \]

\[ Y = 1.1 \text{ long tons/sq. ft. (12.0 metric tons/sq. meter)} \]

\[ Z = 1.25 \text{ long tons/sq. ft. (13.7 metric tons/sq. meter)} \]

(2) For a vessel on exposed waters—
