Coast Guard, DHS

§ 178.325 Intact stability requirements for a sailing vessel.

(a) Except as provided in paragraphs (b), (c) and (e) of this section, each sailing vessel must undergo a simplified stability proof test in accordance with §178.330 of this part in the presence of a Coast Guard marine inspector.

(b) Each of the following sailing vessels must meet the intact stability standards of §§170.170 and 171.055 in subchapter S of this chapter:

(1) A vessel to be operated on exposed waters;
(2) A vessel to be operated during non-daylight hours;
(3) A vessel of unusual type, rig, or hull form, including vessels without a weathertight deck, such as open boats;
(4) A vessel that carries more than 49 passengers;
(5) A sailing school vessel that carries a combined total of six or more sailing school students or instructors;
(6) A vessel on which downflooding occurs at angles of 60° or less; and
(7) A vessel which has a cockpit longer than Length Over Deck (LOD)/5.

(c) A catamaran must meet the intact stability requirements of §171.057 in subchapter S of this chapter while under sail as well as the intact stability requirements of §170.170 in subchapter S of this chapter while under sail as well as the intact stability requirements of §171.055 in subchapter S of this chapter.

(d) A sailing vessel that is not listed in paragraph (b) or (c) of this section and operates on partially protected waters must be equipped with a self-bailing cockpit.

(e) The cognizant OCMI may perform operational tests to determine whether the vessel has adequate stability and satisfactory handling characteristics
§ 178.330 Simplified stability proof test.

(a) A vessel must be in the condition specified in this paragraph when a simplified stability proof test is performed.

(1) The construction of the vessel must be complete in all respects.

(2) Ballast, if necessary, must be in compliance with §178.510 and must be on board and in place.

(3) Each fuel and water tank must be approximately three-quarters full.

(4) A weight equal to the total weight of all passengers, crew, and other loads permitted on the vessel must be on board and distributed so as to provide normal operating trim and to simulate the vertical center of gravity causing the least stable condition that is likely to occur in service. Unless otherwise specified, weight and vertical center of gravity is assumed to be as follows:

(i) The weight of primary lifesaving equipment should be simulated at its normal location, if not on board at the time of the test;

(ii) The weight of one person is considered to be 72.6 kilograms (160 pounds) except the weight of one person is considered to be 63.5 kilograms (140 pounds) if the vessel operates exclusively on protected waters and the passenger load consists of men, women, and children;

(iii) The vertical center for the simulated weight of passengers, crew, and other loads must be at least 760 millimeters (2.5 feet) above the deck; and

(iv) If the vessel carries passengers on diving excursions, the total weight of diving gear must be included in the loaded condition as follows:

(A) The total weight of individual diving gear for each passenger carried is assumed to be 36 kilograms (80 pounds), which includes the weight of scuba tanks, harness, regulator, weight belt, wet suit, mask, and other personal diving equipment; and

(B) The weight of any air compressors carried.

(v) On vessels having one upper deck above the main deck available to passengers, the weight distribution must not be less severe than the following:

Total Test Weight (W) =
Passenger Capacity of Upper Deck:
Weight on Upper Deck = (# of Passengers on Upper Deck) × (Wt per Passenger) × 1.33
Weight on Main Deck = Total Test Weight − Weight on Upper Deck

(5) All non-return closures on cockpit scuppers or on weather deck drains must be kept open during the test.

(b) A vessel must not exceed the limitations in paragraph (f) of this section, when subjected to the greater of the following heeling moments:

\[ M_p = \frac{(W) (B_p)}{6}; \]

\[ M_w = (P) (A) (H) \]

where:

\( M_p \) = passenger heeling moment in kilograms-meters (foot-pounds);

\( W \) = the total passenger weight using 72.6 kilograms (160 pounds) per passenger, or, if the vessel operates exclusively on protected waters and the passenger load consists of men, women, and children, 63.5 kilograms (140 pounds) per passenger may be used;

\( B_p \) = the maximum transverse distance in meters (feet) of a deck that is accessible to passengers;

\( M_w \) = wind heeling moment in kilograms-meters (foot-pounds);

\( P \) = wind pressure of:

(1) 36.6 kilograms/square meter (7.5 pounds/square foot) for operation on protected waters;

(2) 48.8 kilogram/square meter (10.0 pounds/square foot) for operation on partially protected waters; or

(3) 73.3 kilograms/square meter (15.0 pounds/square foot) for operation on exposed waters;

\( A \) = area, in square meters (square feet), of the projected lateral surface of the vessel above the waterline (including each projected area of the hull, superstructure and area bounded by railings and structural canopies). For sailing vessels this is the bare poles area, or, if the vessel has no auxiliary power, with storm sails set; and

\( H \) = height, in meters (feet), of the center of area (A) above the waterline, measured up from the waterline.