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

K=38 in English units.
K=13.93 in metric units.

174.015 Intact stability.
174.020 Alternate intact stability criterion.

(c) When a heeling arm curve, calculated in accordance with paragraph (d) of this section, is plotted against the vessel's righting arm curve—

(1) Equilibrium must be reached before the downflooding angle; and

(2) The residual righting energy must be at least 2 foot-degrees (.61 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(iii) 40 degrees.

(d) The heeling arm curve specified in paragraph (c) of this section must be calculated by the following equation:

$$HA = \frac{2(N)(P \times D)^{2/3}}{(s)(h)(\cos \theta)} \cdot K\Delta$$

where—

HA=heeling arm.

θ=angle of heel.

N, P, D, K, s, h, and Δ are as defined in paragraph (b) of this section.

(e) For the purpose of this section, downflooding angle means the static angle from the intersection of the vessel's centerline and waterline in calm water to the first opening that does not close watertight automatically.

(f) For the purpose of this section, at each angle of heel, a vessel's righting arm may be calculated considering either—

(1) The vessel is permitted to trim free until the trimming moment is zero; or

(2) The vessel does not trim as it heels.

PART 174—SPECIAL RULES PERTAINING TO SPECIFIC VESSEL TYPES

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- 174.350 Specific applicability.
- 174.355 Definitions.
- 174.360 Calculations.

AUTHORITY: 42 U.S.C. 9118, 9119, 9153; 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 79-023, 48 FR 51048, Nov. 4, 1983, unless otherwise noted.

Subpart A—General

§ 174.005 Applicability.

Each of the following vessels must comply with the applicable provisions of this part:

- (a) Deck cargo barge.
- (b) Mobile offshore drilling unit (MODU) inspected under subchapter IA of this chapter.
- (c) Tugboat and towboat inspected under subchapter I of this chapter.
- (d) Self-propelled hopper dredge having an assigned working freeboard.
- (e) Oceangoing ships of 500 gross tons or over, as calculated by the International Convention on Tonnage Measurement of Ships, 1969, designed primarily for the carriage of dry cargoes, including roll-on/roll-off ships.
- (f) Offshore supply vessel inspected under subchapter L of this chapter.
- (g) Liftboat inspected under subchapter L of this chapter.

[CGD 95-012, 60 FR 48052, Sept. 18, 1995; 60 FR 50120, Sept. 28, 1995, as amended by CGD 82-004 and CGD 86-074, 60 FR 57671, Nov. 16, 1995; CGD 82-004 and CGD 86-074, 62 FR 49353, Sept. 19, 1997]

§ 174.007 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal

Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved material is on file at the U.S. Coast Guard, Office of Design and Engineering Standards (G-MSE), 2100 Second Street SW., Washington, DC 20593-0001 and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. All approved material is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

American Society for Testing and Materials (ASTM)

100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM F 1196-94, Standard Specification for Sliding Watertight Door Assemblies—174.100

ASTM F 1197-89 (1994), Standard Specification for Sliding Watertight Door Control Systems—174.100

[CGD 88-032, 56 FR 35828, July 29, 1991, as amended by CGD 95-072, 60 FR 50468, Sept. 29, 1995; CGD 96-041, 61 FR 50734, Sept. 27, 1996; CGD 97-057, 62 FR 51049, Sept. 30, 1997; USCG-1999-5151, 64 FR 67186, Dec. 1, 1999; 69 FR 18803, Apr. 9, 2004]

Subpart B—Special Rules Pertaining to Deck Cargo Barges

§ 174.010 Specific applicability.

Each barge that carries cargo above the weather deck must comply with this subpart.

§ 174.015 Intact stability.

(a) Except as provided in § 174.020, in each condition of loading and operation, each barge must be shown by design calculations to have an area under the righting arm curve up to the angle of maximum righting arm, the downflooding angle, or 40 degrees, whichever angle is smallest, equal to or greater than—