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(3) Longitudinal acceleration, meaning the motion acceleration of surge and pitch and gravity component of pitch.

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983]

§ 154.410 Cargo tank sloshing loads.

(a) For the calculation required under § 154.406 (a)(5) and (b), the determined sloshing loads resulting from the accelerations under § 154.409(f) must be specially approved by the Commandant (G–MSO).

(b) If the sloshing loads affect the cargo tank scantlings, an analysis of the effects of the sloshing loads in addition to the calculation under paragraph (a) of this section must be specially approved by the Commandant (G–MSO).

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983]

§ 154.411 Cargo tank thermal loads.

For the calculations required under § 154.406(a)(4), the following determined loads must be specially approved by the Commandant (G–MSO):

(a) Transient thermal loads for the cooling down periods of cargo tanks for design temperatures lower than −55°C (−67°F).

(b) Stationary thermal loads for cargo tanks for design temperatures lower than −55°C (−67°F) that cause high thermal stress.

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983]

§ 154.412 Cargo tank corrosion allowance.

A cargo tank must be designed with a corrosion allowance if the cargo tank:

(a) is located in a space that does not have inert gas or dry air; or

(b) carries a cargo that corrodes the tank material.

NOTE: Corrosion allowance for independent tank type C is contained in § 54.01–35 of this chapter.

INTEGRAL TANKS

§ 154.418 General.

An integral tank must not be designed for a temperature colder than −10°C (14°F), unless the tank is specially approved by the Commandant (G–MSO).

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983]

§ 154.419 Design vapor pressure.

The P_o of an integral tank must not exceed 24.5 kPa gauge (3.55 psig) unless special approval by the Commandant (G–MSO) allows a P_o between 24.5 kPa gauge (3.55 psig) and 69 kPa gauge (10 psig).

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 82–063b, 48 FR 4782, Feb. 3, 1983]

§ 154.420 Tank design.

(a) The structure of an integral tank must meet the deep tank scantling standards of the American Bureau of Shipping published in ''Rules for Building and Classing Steel Vessels'', 1981.

(b) The structure of an integral tank must be designed and shown by calculation to withstand the internal pressure determined under § 154.407.

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 77–069, 52 FR 31630, Aug. 21, 1987]

§ 154.421 Allowable stress.

The allowable stress for the integral tank structure must meet the American Bureau of Shipping's allowable stress for the vessel's hull published in ''Rules for Building and Classing Steel Vessels'', 1981.

[CGD 74–289, 44 FR 26009, May 3, 1979, as amended by CGD 77–069, 52 FR 31630, Aug. 21, 1987]

MEMBRANE TANKS

§ 154.425 General.

The design of the hull structure and the design of the membrane tank system, that includes the membrane tank, secondary barrier, including welds, the supporting insulation, and pressure control equipment, must be specially