

than the cross-sectional area of the valve inlet connection.

(n) Double flame screens of 20×20 corrosion-resistant wire mesh with a ½-inch corrosion-resistant separator on a single screen of 30×30 corrosion-resistant wire mesh shall be fitted on all openings to atmosphere. The net free area through the flame screens shall not be less than 1½ times the cross-sectional area of the vent inlet from the cargo tanks.

(o) Valve bodies may have screwed or flanged pipe connections, or such types of connections as may be approved by the Commanding Officer, USCG Marine Safety Center. If flanged, the thickness and drilling shall comply with USA standards for 150-pound bronze flanged fittings.

(p) Where design of valve does not permit complete drainage of condensate to attached cargo tank or vent line, the valve body shall be fitted with a plugged drain opening on the side of the atmospheric outlet of not less than ½ inch pipe size.

(q) Relief pressure adjusting mechanisms shall be permanently secured by means of lockwires, locknuts, or other acceptable means.

(r) Pressure-vacuum relief valves constructed in accordance with ISO 15364 (incorporated by reference; see 46 CFR 162.017-1) meet the requirements of this subpart.

[CGFR 50-9, 15 FR 1680, Mar. 25, 1950, as amended by CGFR 68-82, 33 FR 18907, Dec. 18, 1968; CGD 88-032, 56 FR 35827, July 29, 1991; CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50734, Sept. 27, 1996; USCG 2001-10224, 66 FR 48620, Sept. 21, 2001; USCG-2003-16630, 73 FR 65202, Oct. 31, 2008]

§ 162.017-4 Inspections and testing.

Pressure-vacuum relief valves may be inspected and tested at the plant of the manufacturer. An inspector may conduct such tests and examinations as may be necessary to determine compliance with this specification.

[56 FR 35827, July 29, 1991]

§ 162.017-5 Marking.

(a) Each valve shall be legibly marked with the style, type or other designation of the manufacturer, the size, pressure and vacuum setting and name or registered trademark of the

manufacturer and Coast Guard approval number. The minimum wording for showing the approval number shall be “USCG/162.017/* **” or “USCG 162.017-* **”.

(b) [Reserved]

[CGFR 68-82, 33 FR 18908, Dec. 18, 1968, as amended by USCG 2001-10224, 66 FR 48620, Sept. 21, 2001]

§ 162.017-6 Procedure for approval.

(a) *General.* Pressure-vacuum relief valves intended for use on tank vessels must be approved for such use by the Commanding Officer, U.S. Coast Guard Marine Safety Center. Applications for approval may be delivered by visitors to the Commanding Officer, U.S. Coast Guard Marine Safety Center, 1900 Half Street, SW, Suite 1000, Room 525, Washington, DC 20024, or transmitted by mail to: Commanding Officer, U.S. Coast Guard Marine Safety Center, 2100 2nd St. SW., Stop 7126, Washington, DC 20593-7126, in a written or electronic format. Information for submitting the VSP electronically can be found at <http://www.uscg.mil/HQ/MS>.

(b) *Drawings and specifications.* Manufacturers desiring approval of a new design or type of pressure-vacuum relief valve shall submit drawings in quadruplicate showing the design of the valve, the sizes for which approval is requested, method of operation, thickness and material specification of component parts, diameter of seat opening and lift of discs, mesh and size of wire of flame screens.

(c) *Pre-approval tests.* Before approval is granted, the manufacturer shall have tests conducted, or submit evidence that such tests have been conducted, by the Underwriters' Laboratories, the Factory Mutual Laboratories, or by a properly supervised and inspected test laboratory acceptable to the Commandant (CG-521), relative to determining the lift, relieving pressure and vacuum, and flow capacity of a representative sample of the pressure-vacuum relief valve in each size for which approval is desired. Test reports including flow capacity curves must be

**Number to be assigned by the Commanding Officer, USCG Marine Safety Center.

§ 162.018-1

submitted to the Commanding Officer, USCG Marine Safety Center.

[56 FR 35827, July 29, 1991, as amended by CGD 95-072, 60 FR 50467, Sept. 29, 1995; CGD 96-041, 61 FR 50734, Sept. 27, 1996; USCG 2001-10224, 66 FR 48620, Sept. 21, 2001; USCG-2004-18884, 69 FR 58350, Sept. 30, 2004; USCG-2007-29018, 72 FR 53967, Sept. 21, 2007; USCG-2009-0702, 74 FR 49238, Sept. 25, 2009]

Subpart 162.018—Safety Relief Valves, Liquefied Compressed Gas

§ 162.018-1 Applicable specifications, and referenced material.

(a) There are no other specifications applicable to this subpart except as noted in this subpart.

(b) The following referenced material from industry standards of the issue in effect on the date safety relief valves are manufactured shall form a part of the regulations of this subpart (see §§ 2.75-17 through 2.75-19 of Subchapter A (Procedures Applicable to the Public) and Subpart 50.15 of Subchapter F (Marine Engineering) of this chapter):

(1) ASME (American Society of Mechanical Engineers) Code (see § 50.15-5 of subchapter F (Marine Engineering) of this chapter): The following paragraph from section VIII of the ASME Code:

(i) UG-131, flow rating of valves, see § 162.018-7(a).

(2) CGA (Compressed Gas Association) standard: The following standard of the Compressed Gas Association (see § 50.15-20(a) of Subchapter F (Marine Engineering) of this chapter):

(i) S-1.2.5.2, Flow test data for safety and relief valves for use on pressure vessels, see § 162.018-7(a).

(c) A copy of this specification and the referenced material listed in this section, if used, shall be kept on file by the manufacturer, together with the approved plans, specifications, and certificate of approval. It is the manufacturer's responsibility to have the latest issue, including addenda and changes, of the referenced material on hand when manufacturing equipment under this subpart.

(1) The ASME Code may be obtained from the American Society of Mechanical Engineers, United Engineering

46 CFR Ch. I (10-1-11 Edition)

Center, 345 East 47th Street, New York, N.Y. 10017.

(2) The CGA standard may be obtained from the Compressed Gas Association, 500 Fifth Avenue, New York, N.Y. 10036.

[CGFR 68-82, 33 FR 18908, Dec. 18, 1968]

§ 162.018-2 Scope.

(a) This specification covers requirements for the design, construction and testing of safety relief valves intended for use on unfired pressure vessels containing liquefied compressed gases installed on merchant vessels subject to inspection by the Coast Guard.

(b) [Reserved]

[CGFR 52-43, 17 FR 9540, Oct. 18, 1952]

§ 162.018-3 Materials.

(a) The materials used in the manufacture of safety relief valves shall conform to the applicable requirements of subchapter F (Marine Engineering) of this chapter, except as otherwise specified in this subpart, and shall be resistant to the corrosive or other action of the liquefied compressed gas in the liquid or gas phase.

(b) All pressure containing external parts of valves must be constructed of materials melting above 1700 °F. for liquefied flammable gas service. Consideration of lower melting materials for internal pressure-containing parts will be given if their use provides significant improvement to the general operation of the valve. Flange gaskets shall be metal or spiral wound asbestos.

(c) Nonferrous materials shall not be used in the construction of valves for anhydrous ammonia or other service where susceptible to attack by the lading.

(d) The seats and disks shall be of suitable corrosion resistant material. Seats and disks of cast iron or malleable iron shall not be used. Springs shall be of best quality spring steel consistent with the design of the valve and the service requirement.

[CGFR 52-43, 17 FR 9540, Oct. 18, 1952, as amended by CGFR 68-82, 33 FR 18908, Dec. 18, 1968; CGD 72-206R, 38 FR 17230, June 29, 1973]