

the fluid flow when open and perpendicular to the fluid flow when closed.

(b) Valves of Class I piping systems having diameters exceeding 2 inches must have bolted, pressure seal, or breech lock bonnets and flanged or welding ends. Socket type welding ends must meet § 56.30-5(c) and § 56.30-10(b)(4). For diameters not exceeding 2 inches, screwed union bonnet or bolted bonnet, or bonnetless valves, which prevent the stem from screwing out of the body, may be employed. Outside screw and yoke design must be used for valves 3 inches and larger for pressures above 600 psig. Cast iron valves with screwed-in or screwed-over bonnets are prohibited. Union bonnet type cast iron valves must have the bonnet ring made of steel, bronze, or malleable iron.

(c) Valves must be designed for the maximum pressure to which they may be subjected, but in no case must the design pressure be less than 50 psig. The use of wafer type resilient seated valves is subject to the requirements of § 56.20-15.

(d) Disks or disk faces, seats, stems, and other wearing parts of valves must be made of material possessing corrosion and heat-resisting qualities suitable for the service conditions to which they may be subjected.

(e) Plug cocks must be constructed with satisfactory and positive means of preventing the plug from becoming loosened or removed from the body when the plug is operated.

(f) Cocks must be marked in a straight line with the body to indicate whether they are open or closed.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 77-140, 54 FR 40604, Oct. 2, 1989; CGD 95-012, 60 FR 48050, Sept. 18, 1995; USCG-2004-18884, 69 FR 58346, Sept. 30, 2004; USCG-2003-16630, 73 FR 65176, Oct. 31, 2008]

§ 56.20-15 Valves employing resilient material.

(a) A valve in which the closure is accomplished by resilient nonmetallic material instead of a metal-to-metal seat must comply with the design, material, construction, and testing for valves specified in this section.

(b) Valves employing resilient material are divided into three categories: Positive shutoff, Category A, and Cat-

egory B, and must be tested and used as follows:

(1) *Positive shutoff valves.* The closed valve must pass less than 10 ml/hr (0.34 fluid oz/hr) of liquid, or less than 3 l/hr (0.11 cubic ft/hr) of gas per inch nominal pipe size through the line at full rated pressure after being subjected to the fire test requirements of API 607 (incorporated by reference; see § 56.01-2). Packing material must be fire resistant. Piping subject to internal head pressure from a tank containing oil must be fitted with positive shutoff valves located at the tank in accordance with § 56.50-60(d). Positive shutoff valves may be used in any location in lieu of a Category A or Category B valve.

(2) *Category A valves.* Category A valves may be used in any location except where positive shutoff valves are required by § 56.50-60(d). To be qualified as a Category A valve, the valve must meet the fire test and leakage requirements of API 607.

(i) Category A valves are required at vital piping system manifolds;

(ii) Category A valves must be used in isolation valves in cross-connects between two piping systems, at least one of which is a vital system, where failure of the valve in a fire would prevent the vital system(s) from functioning as designed; and

(iii) Category A valves must be used for valves providing closure for any opening in the shell of the vessel.

(3) *Category B valves.* The closed valve will not provide effective closure of the line or will permit appreciable leakage from the valve after the resilient material is damaged or destroyed. Category B valves are not required to be tested and may be used in any location except where a Category A or positive shutoff valve is required.

(c) Resiliently seated valves previously accepted by the Commandant or the Marine Safety Center may continue to be used within the service restrictions of their acceptance.

[CGD 95-028, 62 FR 51200, Sept. 30, 1997, as amended by USCG-2003-16630, 73 FR 65176, Oct. 31, 2008]