conduct flammable, combustible, or dangerous fluids, or for vital systems unless approved by the Marine Safety Center.

NOTE: For definitions of flammable or combustible fluids, see §§ 30.10–15 and 30.10–22 or parts 151–154 of this chapter. Dangerous fluids are those covered by regulations in part 98 of this chapter.

(b) The possibility of galvanic corrosion due to the relative solution potentials of copper and aluminum and their alloys should be considered when used in conjunction with each other or with steel or with other metals and their alloys when an electrolyte is present.

(c) A suitable thread compound must be used in making up threaded joints in aluminum pipe to prevent seizing which might cause leakage and perhaps prevent disassembly. Pipe in the annealed temper should not be threaded.

(d) The corrosion resistance of copper bearing aluminum alloys in a marine atmosphere is poor and alloys with copper contents exceeding 0.6 percent should not be used. Refer to Table 56.60–2(a) of this part for further guidance.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 77–140, 54 FR 40612, Oct. 2, 1989; CGD 95–027, 61 FR 26001, May 23, 1996]

§ 56.60–25 Nonmetallic materials.

(a) Plastic pipe installations shall be in accordance with the International Maritime Organization (IMO) resolution A.753(18), Guidelines for the Application of Plastic Pipes on Ships and the following supplemental requirements:

(1) Materials used in the fabrication of plastic pipe shall comply with the appropriate standards listed in § 56.01–2 of this chapter.

(2) Plastic pipe is not permitted in a concealed space in an accommodation or service area, such as behind ceilings or linings or between double bulkheads, unless—

(i) Each trunk or duct containing such piping is completely surrounded by ''A'' class divisions; or

(ii) An approved smoke-detection system is fitted in the concealed space and each penetration of a bulkhead or deck and each installation of a draft stop is made in accordance with IMO resolution A.753(18) to maintain the integrity of fire divisions.

(3) Plastic pipe used outboard of the required metallic shell valve in any piping system penetrating the vessel's shell (see § 56.50–95(f)) shall have the same fire endurance as the metallic shell valve. Where the shell valve and the plastic pipe are in the same unmanned space, the valve shall be operable from above the freeboard deck.

(4) Pipe that is to be used for potable water shall bear the seal of approval or NSF mark of the National Sanitation Foundation Testing Laboratory, Incorporated, School of Public Health, University of Michigan, Ann Arbor, MI 48103.

(b) *Nonmetallic flexible hose.* (1) Nonmetallic flexible hose must be in accordance with SAE J–1942 and may be installed only in vital and nonvital fresh and salt water systems, nonvital pneumatic systems, lube oil and fuel systems, and fluid power systems.

(2) Nonmetallic flexible hose may be used in vital fresh and salt water systems at a maximum service pressure of 150 psi. Nonmetallic flexible hose may be used in lengths not exceeding 30 inches where flexibility is required subject to the limitations of paragraphs (a) (1) through (4) of this section. Nonmetallic flexible hose may be used for plastic pipe in duplicate installations in accordance with paragraph (a) of this section.

(3) Nonmetallic flexible hose may be used for plastic pipe in nonvital fresh and salt water systems and nonvital pneumatic systems subject to the limitations of paragraphs (a) (1) through (4) of this section. Unreinforced hoses are limited to a maximum service pressure of 50 psi, reinforced hoses are limited to a maximum service pressure of 150 psi.

(4) Nonmetallic flexible hose may be used in lube oil, fuel oil and fluid power systems only where flexibility is required and in lengths not exceeding 30 inches.

(5) Nonmetallic flexible hose must be complete with factory-assembled end fittings requiring no further adjustment of the fittings on the hose, except that field attachable type fittings may be used. Hose end fittings must comply

with SAE J–1475. Field attachable fittings must be installed following the manufacturer's recommended practice. If special equipment is required, such as crimping machines, it must be of the type and design specified by the manufacturer. A hydrostatic test of each hose assembly must be conducted in accordance with §56.97–5 of this part.

(c) Plastic valves, fittings, and flanges may be used in systems employing plastic pipe. Such valves, fittings, and flanges shall be designed, fabricated, tested, and installed so as to satisfy the intent of the requirements for plastic pipe contained in this section.

(d) If it is desired to use nonmetallic materials other than those specified in this section, a request furnishing the chemical and physical properties of the material shall be submitted to the Commandant for consideration.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9979, June 17, 1970; CGD 72–104R, 37 FR 14234, July 18, 1972; CGD 73–254, 40 FR 40165, Sept. 2, 1975; CGD 77–140, 54 FR 40613, Oct. 2, 1989; CGD 88–032, 56 FR 35822, July 29, 1991; CGD 83–043, 60 FR 24775, May 10, 1995; CGD 95–072, 60 FR 50462, Sept. 29, 1995; CGD 96–041, 61 FR 50728, Sept. 27, 1996; CGD 95–028, 62 FR 51201, Sept. 30, 1997; USCG–2002–13058, 67 FR 61278, Sept. 30, 2002]

Subpart 56.65—Fabrication, Assembly and Erection

§56.65–1 General (replaces 127 through 135.4).

(a) The requirements for fabrication, assembly and erection in subparts 56.70 through 56.90 shall apply in lieu of 127 through 135.4 of ANSI-B31.1. Those paragraphs reproduced are so noted.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9978, June 17, 1970]

Subpart 56.70—Welding

§56.70–1 General.

(a) The following generally applies to all types of welding, such as stud welding, casting repair welding and all processes of fabrication welding. Where the detailed requirements are not appropriate to a particular process, alternatives must be approved by the Marine Safety Center.

[CGD 77–140, 54 FR 40614, Oct. 2, 1989]

§56.70–3 Limitations.

Backing rings. Backing strips used at longitudinal welded joints must be removed.

[CGD 73–254, 40 FR 40165, Sept. 2, 1975]

§56.70–5 Material.

(a) *Filler metal.* All filler metal, including consumable insert material, must comply with the requirements of section IX, ASME Boiler and Pressure Vessel Code and §57.02–5 of this subchapter.

(b) *Backing rings.* When metallic backing rings are used they shall be made from material of weldable quality compatible with the base metal, whether subsequently removed or not. When nonmetallic backing rings are used they shall be of material which does not deleteriously affect either base or weld metal, and shall be removed after welding is completed. Backing rings may be of the consumable insert type, removable ceramic type, of solid or split band type. A ferrous backing ring which becomes a permanent part of the weld shall not exceed 0.05 percent sulphur. If two abutting surfaces are to be welded to a third member used as a backing ring and one or two of the three members are ferritic and the other member or members are austenitic, the satisfactory use of such materials shall be determined by procedure qualifications.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 73–254, 40 FR 40165, Sept. 2, 1975; USCG–2002–13058, 67 FR 61278, Sept. 30, 2002]

§56.70–10 Preparation (modifies 127.3).

(a) *Butt welds (reproduces 127.3.1)*—(1) *End preparation.* (i) Oxygen or arc cutting is acceptable only if the cut is reasonably smooth and true, and all slag is cleaned from the flame cut surfaces. Discoloration which may remain on the flame cut surface is not considered to be detrimental oxidation.

(ii) Butt-welding end preparation dimensions contained in ANSI-B16.25 or any other end preparation which meets