

(f) After repairs have been made the vessel shall again be tested in the regular way, and if it passes the test, the marine inspector may accept it. If it does not pass the test, the marine inspector can order supplementary repairs, or, if in his judgment the vessel is not suitable for service, he may permanently reject it.

**§ 54.10-15 Pneumatic test (modifies UG-100).**

(a) Pneumatic testing of welded pressure vessels shall be permitted only for those units which are so designed and/or supported that they cannot be safely filled with water, or for those units which cannot be dried and are to be used in a service where traces of the testing medium cannot be tolerated.

(b) Proposals to pneumatically test shall be submitted to the cognizant Officer in Charge, Marine Inspection, for approval.

(c) Except for enameled vessels, for which the pneumatic test pressure shall be at least equal to, but need not exceed, the maximum allowable working pressure to be marked on the vessel, the pneumatic test pressure shall be at least equal to 1.25 times the maximum allowable working pressure to be stamped on the vessel multiplied by the lowest ratio (for the materials of which the vessel is constructed) of the stress value "S" for the test temperature of the vessel to the stress value "S" for the design temperature (see UG-21 of the ASME Code). In no case shall the pneumatic test pressure exceed 1.25 times the basis for calculated test pressure as defined in UA-60(e) of the ASME Code.

(d) The pneumatic test of pressure vessels shall be accomplished as follows:

(1) The pressure on the vessel shall be gradually increased to not more than half the test pressure.

(2) The pressure will then be increased at steps of approximately one-tenth the test pressure until the test pressure has been reached.

(3) The pressure will then be reduced to the maximum allowable working pressure of the vessel to permit examination.

(e) Pressure vessels pneumatically tested shall also be leak tested. The

test shall be capable of detecting leakage consistent with the design requirements of the pressure vessel. Details of the leak test shall be submitted to the Commandant for approval.

(f) After satisfactory completion of the pneumatic pressure test, the vessel may be stamped in accordance with § 54.10-20. A marine inspector shall observe the pressure vessel in a loaded condition at the first opportunity following the pneumatic test. The tank supports and saddles, connecting piping, and insulation if provided shall be examined to determine if they are satisfactory and that no leaks are evident.

(g) The pneumatic test is inherently more hazardous than a hydrostatic test, and suitable precautions shall be taken to protect personnel and adjacent property.

**§ 54.10-20 Marking and stamping.**

(a) *Pressure vessels (replaces UG-116, except paragraph (k), and UG-118).* Pressure vessels that are required by § 54.10-3 to be stamped with the Coast Guard Symbol must also be stamped with the following information:

(1) Manufacturer's name and serial number.

(2) Coast Guard number, see § 50.10-30 of this subchapter.

(3) Coast Guard Symbol, which is affixed only by the marine inspector.

(4) Maximum allowable working pressure — kPa (— psig) at — °C (— °F).

(5) Class.

(6) Minimum service temperature allowed, if below — 18 °C (0 °F)

(7) Water capacity in liters (U.S. gallons), if a cargo carrying pressure vessel.

(b) *Multichambered pressure vessels (replaces UG-116(k)).* In cases where more than one pressure vessel is involved in an integral construction, as with a heat exchanger, the manufacturer may elect to class the component pressure vessels differently. In such cases he shall stamp the combined structures as required in paragraph (a) of this section with information for each pressure vessel. Where an item for stamping is identical for both vessels, as with name and address of manufacturer, it need not be duplicated. However, where differences exist, each

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value and the vessel to which it applies shall be clearly indicated.

(c) *Stamping data (replaces UG-117).* Except as noted in paragraph (d) of this section, the data shall be stamped directly on the pressure vessel. The data shall be legibly stamped and shall not be obliterated during the service life of the pressure vessel. In the event that the portion of the pressure vessel upon which the data is stamped is to be insulated or otherwise covered, the data shall be reproduced on a metal nameplate. This plate shall be securely attached to the pressure vessel. The nameplate shall be maintained in a legible condition such that it may be easily read.

(1) Those parts of pressure vessels requiring Coast Guard shop inspection under this part which are furnished by other than the shop of the manufacturer responsible for the completed vessel shall be stamped with the Coast Guard Symbol, the Marine Inspection Office identification letters (see § 50.10-30 of this subchapter) and the word "Part", the manufacturer's name and serial number, and the design pressure.

(d) Thin walled vessels (modifies UG-119). In lieu of direct stamping on the pressure vessel, the information required by paragraph (a) of this section shall be stamped on a nameplate permanently attached to the pressure vessel when the pressure vessel is constructed of—

(1) Steel plate less than one-fourth inch thick; or

(2) Nonferrous plate less than one-half inch thick.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9977, June 17, 1970; CGD 72-206R, 38 FR 17226, June 29, 1973; CGD 77-147, 47 FR 21810, May 20, 1982]

**§ 54.10-25 Manufacturers' data report forms (modifies UG-120).**

(a) The Manufacturers' data report form, as provided by the Coast Guard, shall be completed in duplicate and certified by the manufacturer for each pressure vessel required to be shop inspected under these regulations. The original of this form shall be delivered to the Coast Guard inspector.

(b) Data forms for those parts of a pressure vessel requiring inspection, which are furnished by other than the

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shop of the manufacturer responsible for the completed unit, shall be executed in triplicate by the manufacturer of the parts. The original and one copy shall be delivered to the Coast Guard inspector who shall forward one copy of the report to the Officer in Charge, Marine Inspection, having cognizance over the final assembly. These partial data reports, together with the final inspection and tests, shall be the final Coast Guard inspector's authority to apply the Coast Guard symbol and number. A final data report shall be executed by the manufacturer or assembler who completes the final assembly and tests.

(c) If a pressure vessel is required to be inspected in accordance with § 54.10-3(c), the manufacturer's data reports required by UG-120 must be made available to the Coast Guard inspector for review prior to inspection of the pressure vessel.

(Approved by the Office of Management and Budget under control number 2130-0181)

[CGFR 69-127, 35 FR 9977, June 17, 1970 as amended by CGD 77-147, 47 FR 21810, May 20, 1982]

**Subpart 54.15—Pressure-Relief Devices**

**§ 54.15-1 General (modifies UG-125 through UG-136).**

(a) All pressure vessels built in accordance with applicable requirements in Division 1 of section VIII of the ASME Code must be provided with protective devices as indicated in UG-125 through UG-136 except as noted otherwise in this subpart.

(b) The markings shall be in accordance with this chapter for devices covered by § 54.15-10.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 88-032, 56 FR 35822, July 29, 1991]

**§ 54.15-3 Definitions (modifies UA-60).**

(a) Definitions applicable to this subpart are in § 52.01-3 of this subchapter.

**§ 54.15-5 Protective devices (modifies UG-125).**

(a) All pressure vessels must be provided with protective devices. The protective devices must be in accordance with the requirements of UG-125