

§ 52.25-7 Electric boilers (modifies PEB-1 through PEB-19).

Electric boilers required to comply with this part must meet the applicable provisions in this part and the mandatory requirements in PEB-1 through PEB-19 except PEB-3 of the ASME Code.

§ 52.25-10 Organic fluid vaporizer generators (modifies PVG-1 through PVG-12).

(a) Organic fluid vaporizer generators and parts thereof shall meet the requirements of PVG-1 through PVG-12 of the ASME Code except as noted otherwise in this section.

(b) The application and end use of organic fluid vaporizer generators shall be approved by the Commandant.

§ 52.25-15 Fired thermal fluid heaters.

(a) Fired thermal fluid heaters shall be designed, constructed, inspected, tested, and stamped in accordance with the applicable provisions in this part.

(b) Each fired thermal fluid heater must be fitted with a control which prevents the heat transfer fluid from being heated above its flash point.

(c) The heat transfer fluid must be chemically compatible with any cargo carried in the cargo tanks serviced by the heat transfer system.

(d) Each fired thermal fluid heater must be tested and inspected in accordance with the requirements of subpart 61.30 of this chapter.

[CGFR 68-82, 33 FR 18815, Dec. 18, 1968, as amended by CGD 88-057, 55 FR 24236, June 15, 1990]

§ 52.25-20 Exhaust gas boilers.

Exhaust gas boilers with a maximum allowable working pressure greater than 103 kPa gage (15 psig) or an operating temperature greater than 454 °C. (850 °F.) must be designed, constructed, inspected, tested and stamped in accordance with the applicable provisions in this part. The design temperature of parts exposed to the exhaust gas must be the maximum temperature that could normally be produced by the source of the exhaust gas. This temperature must be verified by testing or by the manufacturer of the engine or other equipment producing the exhaust. Automatic exhaust gas boiler

control systems must be designed, constructed, tested, and inspected in accordance with § 63.25-7 of this chapter.

[CGD 88-057, 55 FR 24236, June 15, 1990]

PART 53—HEATING BOILERS**Subpart 53.01—General Requirements**

Sec.

53.01-1 Incorporation by reference.

53.01-3 Adoption of section IV of the ASME Code.

53.01-5 Scope (modifies HG-100).

53.01-10 Service restrictions and exceptions (replaces HG-101).

Subpart 53.05—Pressure Relieving Devices (Article 4)

53.05-1 Safety valve requirements for steam boilers (modifies HG-400 and HG-401).

53.05-2 Relief valve requirements for hot water boilers (modifies HG-400.2).

53.05-3 Materials (modifies HG-401.2).

53.05-5 Discharge capacities and valve markings.

Subpart 53.10—Tests, Inspection, Stamping, and Reporting (Article 5)

53.10-1 General.

53.10-3 Inspection and tests (modifies HG-500 through HG-540).

53.10-10 Certification by stamping.

53.10-15 Manufacturers' data report forms.

Subpart 53.12—Instruments, Fittings, and Controls

53.12-1 General (modifies HG-600 through HG-640).

AUTHORITY: 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

SOURCE: CGFR 68-82, 33 FR 18826, Dec. 18, 1968, unless otherwise noted.

Subpart 53.01—General Requirements**§ 53.01-1 Incorporation by reference.**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of change in the FEDERAL REGISTER and make the material available to the public. All approved

§ 53.01-3

46 CFR Ch. I (10-1-03 Edition)

material is on file at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC, and at the U.S. Coast Guard, Office of Design and Engineering Standards (G-MSE), 2100 Second Street SW., Washington, DC 20593-0001 and is available from the sources indicated in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

*American Society of Mechanical Engineers
(ASME) International*

Three Park Avenue, New York, NY 10016-5990

Boiler and Pressure Vessel Code, Section IV, Heating Boilers, July 1989 with 1989 addenda....53.01-5; 53.01-10; 53.05-1; 53.05-3; 53.05-5; 53.10-1; 53.10-3; 53.10-10; 53.10-15; 53.12-1

[CGD 88-032, 56 FR 35821, July 29, 1991, as amended by CGD 95-072, 60 FR 50462, Sept. 29, 1995; CGD 96-041, 61 FR 50727, Sept. 27, 1996; USCG-1999-6216, 64 FR 53224, Oct. 1, 1999]

§ 53.01-3 Adoption of section IV of the ASME Code.

(a) Heating boilers shall be designed, constructed, inspected, tested, and stamped in accordance with section IV of the ASME (American Society of Mechanical Engineers) Code as limited, modified, or replaced by specific requirements in this part. The provisions in the appendices to section IV of the ASME Code are adopted and shall be followed when the requirements in section IV make them mandatory. For general information Table 53.01-1(a) lists the various paragraphs in section IV of the ASME Code which are limited, modified, or replaced by regulations in this part.

TABLE 53.01-1(A)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION IV OF THE ASME CODE

Paragraphs in section IV, ASME Code ¹ and disposition	Unit of this part
HG-100 modified by	53.01-5(b)
HG-101 replaced by	53.01-10
HG-400 modified by	53.05-1
HG-400.2 modified by	53.05-2
HG-401 modified by	53.05-1
HG-401.2 modified by	53.05-3
HG-500 through HG-540 modified by	53.10-3

TABLE 53.01-1(A)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION IV OF THE ASME CODE—Continued

Paragraphs in section IV, ASME Code ¹ and disposition	Unit of this part
HG-600 through HG-640 modified by	53.12-1

¹The references to specific provisions in the ASME Code are coded. The first letter "H" refers to section IV. The letter following "H" refers to a part or subpart in section IV. The number following the letters refers to the paragraph so numbered in the text of the part or subpart in section IV.

(b) References to the ASME Code, such as paragraph HG-307, indicate:

H=Section IV, Heating Boilers, ASME Code.
G=Part containing general requirements.
3=Article in part.
307=Paragraph within Article 3.

(c) When a paragraph or a section of the regulations in this part relates to material in section IV of the ASME Code, the relationship with the code will be shown immediately following the heading of the section or at the beginning of the paragraph as follows:

(1) (Modifies H____.) This indicates that the material in H____ is generally applicable but is being altered, amplified or augmented.

(2) (Replaces H____.) This indicates that H____ does not apply.

(3) (Reproduces H____.) This indicates that H____ is being identically reproduced for convenience, not for emphasis.

[CGFR 68-82, 33 FR 18826, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9976, June 17, 1970; CGD 81-79, 50 FR 9435, Mar. 8, 1985. Re-designated and amended by CGD 88-032, 56 FR 35821, July 29, 1991]

§ 53.01-5 Scope (modifies HG-100).

(a) The regulations in this part apply to steam heating boilers, hot water boilers (which include hot water heating boilers and hot water supply boilers), and to appurtenances thereto. The requirements in this part shall be used in conjunction with section IV of the ASME Code. Table 54.01-5(a) of this subchapter gives a breakdown by parts in this subchapter of the regulations governing various types of pressure vessels and boilers.

(b) (Modifies HG-100.) The requirements of Part HG of section IV, Heating Boilers, of the ASME Code shall be

used except as noted otherwise in this part.

[CGFR 68-82, 33 FR 18826, Dec. 18, 1968, as amended by CGD 81-79, 50 FR 9435, Mar. 8, 1985]

§ 53.01-10 Service restrictions and exceptions (replaces HG-101).

(a) *General.* The service restrictions and exceptions shall be as indicated in this section in lieu of the requirements in HG-101 of the ASME Code.

(b) *Service restrictions.* (1) Boilers of wrought materials shall be restricted to a maximum of 103 kPa gage (15 psig) for steam and a maximum of 689 kPa (100 psig) or 121 °C (250 °F) for hot water. If operating conditions exceed these limits, design and fabrications shall be in accordance with part 52 of this subchapter.

(2) Boilers of cast iron materials shall be restricted to a maximum of 103 kPa gage (15 psig) for steam and to a maximum of 206 kPa gage (30 psig) or 121 °C (250 °F) for hot water.

(c) *Hot water supply boilers.* (1) Electrically fired hot water supply boilers which have a capacity not greater than 454 liters (120 gallons), a heat input not greater than 58.6 kilowatts (200,000 B.t.u. per hour), and are listed as approved under Underwriters' Laboratories Standard 174 or 1453 are exempted from the requirements of this part provided they are protected by a pressure relief device. This relief device need not comply with § 53.05-2.

(2) Oil fired hot water supply boilers shall not be exempted from the requirements of this part on the basis of size or heat input.

(d) Exhaust gas type boilers shall be restricted to a working pressure equal to or less than 103 kPa gage (15 psig) and an operating temperature equal to or less than 454 °C (850 °F). The design temperature of parts exposed to the exhaust gas must be the maximum temperature that could normally be produced by the source of exhaust gas. This temperature shall be verified by testing or by the manufacturer of the engine or other equipment producing the exhaust.

(e) Heating boilers whose operating conditions are within the service restrictions of § 53.01-10(b)(1) may be constructed in accordance with section I of

the ASME Code. In addition, these heating boilers must:

(1) Be stamped with the appropriate ASME Code symbol in accordance with PG-104 through PG-113 of the ASME Code;

(2) Meet the service restrictions of § 53.01-10(b)(2) if made of cast iron;

(3) Have safety valves which meet the requirements of § 52.01-120 of this subchapter;

(4) If a hot water supply boiler, have a temperature relief valve or a pressure-temperature relief valve in accordance with § 53.05-2(c);

(5) If automatically controlled, meet the applicable requirements in part 63 of this subchapter; and

(6) Meet the inspection and test requirements of § 53.10-3.

(f) *Controls and miscellaneous accessories.* Refer to part 63 of this subchapter for the requirements governing controls and miscellaneous accessories.

[CGFR 68-82, 33 FR 18826, Dec. 18, 1968, as amended by CGD 81-79, 50 FR 9435, Mar. 8, 1985]

Subpart 53.05—Pressure Relieving Devices (Article 4)

SOURCE: CGD 81-79, 50 FR 9435, Mar. 8, 1985, unless otherwise noted.

§ 53.05-1 Safety valve requirements for steam boilers (modifies HG-400 and HG-401).

(a) The pressure relief valve requirements and the safety valve requirements for steam boilers must be as indicated in HG-400 and HG-401 except as noted otherwise in this section.

(b) Each steam boiler must have at least one safety valve.

§ 53.05-2 Relief valve requirements for hot water boilers (modifies HG-400.2).

(a) The relief valve requirements for hot water boilers must be as indicated in article 4 of section IV of the ASME Code except as noted otherwise in this section.

(b) *Hot water heating boilers.* Each hot water heating boiler must have at least one safety relief valve.

(c) *Hot water supply boilers.* Each hot water supply boiler must have at least

§ 53.05-3

one safety relief valve and a temperature relief valve or a pressure-temperature relief valve. The valve temperature setting must not be more than 99 °C (210 °F).

§ 53.05-3 Materials (modifies HG-401.2).

(a) Materials for valves must be in accordance with HG-401.2 of the ASME Code except nonmetallic materials may be used only for gaskets and packing.

§ 53.05-5 Discharge capacities and valve markings.

(a) The discharge capacities and valve markings must be as indicated in HG-402 of the ASME Code. The discharge capacities must be certified by the National Board of Boiler and Pressure Vessel Inspectors.

Subpart 53.10—Tests, Inspection, Stamping, and Reporting (Article 5)

§ 53.10-1 General.

(a) The tests, inspection, stamping, and reporting of heating boilers shall be as indicated in Article 5, Part HG of section IV of the ASME Code except as noted otherwise in this subpart.

§ 53.10-3 Inspection and tests (modifies HG-500 through HG-540).

(a) The inspections required by HG-500 through HG-540 must be performed by the "Authorized Inspector" as defined in HG-575 of the ASME Code. The Authorized Inspector shall hold a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors. After installation, heating boilers must be inspected for compliance with this part by a marine inspector.

(b) Automatically controlled boilers must be subjected to the operating tests prescribed in part 63 of this subchapter.

(c) All heating boilers must have the operation of their pressure relieving devices checked after the final installation.

[CGD 81-79, 50 FR 9436, Mar. 8, 1985]

46 CFR Ch. I (10-1-03 Edition)

§ 53.10-10 Certification by stamping.

Stamping of heating boilers shall be as indicated in HG-530 of the ASME Code.

[CGD 81-79, 50 FR 9436, Mar. 8, 1985]

§ 53.10-15 Manufacturers' data report forms.

The manufacturers' data report forms required by HG-520 of the ASME Code must be made available to the marine inspector for review. The Authorized Inspector's National Board commission number must be included on the manufacturers' data report forms.

[CGD 81-79, 50 FR 9436, Mar. 8, 1985]

Subpart 53.12—Instruments, Fittings, and Controls

§ 53.12-1 General (modifies HG-600 through HG-640).

(a) The instruments, fittings and controls for heating boilers shall be as indicated in HG-600 through HG-640 of section IV of the ASME Code except as noted otherwise in this section.

(b) For control systems for automatic auxiliary heating equipment, the requirements in part 63 of this subchapter govern and shall be followed.

PART 54—PRESSURE VESSELS

Subpart 54.01—General Requirements

Sec.

- 54.01-1 Incorporation by reference
- 54.01-2 Adoption of division 1 of section VIII of the ASME Code.
- 54.01-5 Scope (modifies U-1 and U-2).
- 54.01-10 Steam generating pressure vessels (modifies U-1(e)).
- 54.01-15 Exemptions from shop inspection and plan approval (replaces U-1(c) (6) through (9)).
- 54.01-17 Pressure vessel for human occupancy (PVHO).
- 54.01-18 Plan approval.
- 54.01-25 Miscellaneous pressure components (modifies UG-11).
- 54.01-30 Loadings (modifies UG-22).
- 54.01-35 Corrosion (modifies UG-25).
- 54.01-40 External pressure (modifies UG- 28).

Subpart 54.03—Low Temperature Operation

- 54.03-1 Scope.
- 54.03-5 General.