UL 834

STANDARD FOR SAFETY

Heating, Water Supply, and Power Boilers – Electric

UL Standard for Safety for Heating, Water Supply, and Power Boilers – Electric, UL 834

Fifth Edition, Dated April 13, 2004

Summary of Topics

This revision of ANSI/UL 834 dated July 17, 2019 includes Limit control clarifications.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The revisions are substantially in accordance with Proposal(s) on this subject dated May 17, 2019.

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Standard for Heating, Water Supply, and Power Boilers – Electric

The first edition was titled Standard for Electric Boilers

First Edition – November, 1976
Second Edition – July, 1980
Third Edition – November, 1991
Fourth Edition – January, 1995

Fifth Edition

April 13, 2004

This ANSI/UL Standard for Safety consists of the Fifth edition including revisions through July 17, 2019.

The most recent designation of ANSI/UL 834 as an American National Standard (ANSI) occurred on July 11, 2019. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements cover electric heating, water supply, and power boilers rated at 15,000 volts or less intended for commercial or industrial applications utilizing hot water or steam. They may also be used for commercial, industrial, or residential use space heating applications.

1.2 The boilers covered by these requirements are intended for installation in accordance with the National Electrical Code, NFPA 70, the International Mechanical Code, and the Uniform Mechanical Code.

1.3 Each boiler consists of sheathed resistance-type heating elements and a vessel or tank constructed, inspected, and stamped in accordance with the applicable sections of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Each boiler is provided with one or more safety valves or safety relief valves conforming to ASME requirements with all necessary temperature or pressure regulating controls, including an integral limit control, wiring, and auxiliary equipment assembled as a unit.

1.4 These requirements do not cover water supply boilers and hot water and steam generating equipment employing constructions which are outside the scope of, or not covered by, the ASME codes, nor commercial cooking or medical and dental equipment, nor other electric heating equipment or appliances which are covered in, or as part of, separate, individual requirements. Electrode-type boilers also are not covered by these requirements.

1.5 The equipment covered by this standard shall be one of the following types of water heating boilers:

a) High Pressure – A boiler furnishing:

1) Steam at pressures in excess of 15 psi (103 kPa); or

2) Hot water at temperatures in excess of 250°F (121°C) or at pressures in excess of 160 psi (1103 kPa).

b) Low-Pressure Hot-Water and Low-Pressure Steam – A boiler furnishing:

1) Hot water at pressures not exceeding 160 psi and at temperatures not more than 250°F; or

2) A boiler furnishing steam at pressures not more than 15 psi.

c) Miniature – A boiler that does not exceed the following limits:

1) 16 inches (406 mm) inside diameter of shell; and

2) 5 cubic feet (0.14 m^3) gross volume, exclusive of casing and insulation, and 100 psi (690 kPa) maximum allowable working pressure.

For the applicable ASME Code symbol, see Section 5.

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components generally used in the products covered by this standard.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.5 A component of a boiler intended to be manually operated or adjusted or that will definitely require periodic servicing, for example replacement or cleaning, shall be accessible without the use of special tools.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

5 Special Designations

5.1 A boiler assembly shall be constructed, equipped, inspected, tested, and marked in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. The boiler marking shall consist of the ASME Code symbol and one of the following Designators.

″E″ – Designates a high pressure boiler [see 1.5(a)] constructed as follows:

1) The boiler pressure vessel has been assembled by a manufacturer other than the boiler manufacturer in accordance with the ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers or Section VIII, Division 1 as permitted by ASME Boiler and Pressure Vessel Code, Section I, Part PEB, Rules for Construction of Pressure Vessels;

2) The pressure vessel is stamped with the ASME Code Designator ″S″, ″M″, or ″U″; and

3) The boiler is assembled by methods that do not involve any welding or brazing of parts to the pressure vessel.