UL 732

STANDARD FOR SAFETY

Oil-Fired Storage Tank Water Heaters

UL Standard for Safety for Oil-Fired Storage Tank Water Heaters, UL 732

Sixth Edition, Dated January 31, 2018

Summary of Topics

This revision of ANSI/UL 732 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS).

The requirements are substantially in accordance with Proposal(s) on this subject dated May 18, 2018.

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Standard for Oil-Fired Storage Tank Water Heaters

The first through third editions were titled Oil-Fired Water Heaters.

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Sixth Edition

January 31, 2018

This ANSI/UL Standard for Safety consists of the Sixth Edition including revisions through August 9, 2018.

The most recent designation of ANSI/UL 732 as a Reaffirmed American National Standard (ANS) occurred on August 9, 2018. 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 oil-fired storage-tank water-heating appliances having a fuel input of not more than 200,000 Btu per hour (60 kW). These requirements do not apply to heaters that include storage vessels having a water capacity of more than 120 gallons (454.2 liters), or that are intended for heating water to a temperature of more than 200°F (93.3°C).

1.2 The oil-burning equipment covered by these requirements are intended for installation in accordance with the National Fire Protection Association Standard for the Installation of Oil Burning Equipment, NFPA 31, the International Mechanical Code and the Uniform Mechanical Code.

2 Glossary

2.1 For the purpose of this standard the following definitions apply.

2.2 ANTIFLOODING DEVICE – A primary safety control that causes the fuel flow to be shut off upon a rise in fuel level or upon receiving excess fuel, and that operates before discharge of fuel can occur.

2.3 APPLIANCE FLUE – The flue passages within the appliance.

2.4 AUTOMATICALLY LIGHTED APPLIANCE – An appliance in which fuel to the main burner is turned on and ignited automatically.

2.5 BAFFLE – An object placed in an appliance to direct the flow of air or flue gases.

2.6 BURNER – A device for the final conveyance of fuel or a mixture of fuel and air to the combustion zone.

2.7 BURNER, MECHANICAL-ATOMIZING – A power operated burner that prepares and delivers the fuel and all or part of the air by mechanical process in controllable quantities for combustion. Some examples are air atomizing, high- and low-pressure atomizing, horizontal and vertical rotary atomizing, and vertical rotary wall-flame burners.

2.8 BURNER, MECHANICAL-DRAFT – A burner that includes a power driven fan, blower, or other mechanism as the principal means for supplying air for combustion.

2.9 BURNER, NATURAL-DRAFT – A burner that principally depends upon the natural draft created in the flue to induce into the burner the air required for combustion.

2.10 BURNER, VAPORIZING – A burner consisting of an oil-vaporizing bowl or other receptacle to which liquid fuel may be fed in controllable quantities; the heat of combustion is used to vaporize the fuel, with provision for admitting air and mixing it with the fuel vapor in combustible proportions.

2.11 CASING – An enclosure forming the outside of the appliance, no parts of which are likely to be subjected to intense heat.

2.12 CHIMNEY CONNECTOR – The pipe that connects a solid or liquid fuel-burning appliance to a chimney.

2.13 COMBUSTIBLE MATERIAL – Combustible material as pertaining to materials adjacent to or in contact with heat-producing appliances, chimney connectors and vent connectors, steam and hot-water pipes, and warm-air ducts means material made of or surfaced with wood, compressed paper, plant fibers, or other material that will ignite and burn. Such material shall be considered as combustible even though flameproofed, fire-retardant treated, or plastered.

2.14 COMBUSTION – The rapid oxidation of fuel accompanied by the production of heat, or heat and light.

2.15 COMBUSTION CHAMBER – The portion of an appliance within which combustion occurs.

2.16 COMBUSTION (FLAME) SAFEGUARD – A safety combustion control.

2.17 CONSTANT-LEVEL VALVE – A device that maintains a constant level of fuel oil in a reservoir for delivery to the burner.

2.18 CONTROL – A device intended to regulate the fuel, air, water, or electrical supply to the controlled equipment. It may be automatic, semiautomatic, or manual.

2.19 CONTROL, LIMIT – An automatic safety control responsive to changes in liquid level, pressure, or temperature; for limiting the operation of the controlled equipment.

2.20 CONTROL, SAFETY – An automatic control including a relay, switch, or other auxiliary equipment used in conjunction therewith to form a safety control system that is intended to reduce the likelihood of operation of the controlled equipment that would result in a risk of fire or injury to persons.

2.21 CONTROL, PRIMARY-SAFETY – An automatic safety control intended to reduce the likelihood of abnormal discharge of fuel at the burner in case of ignition failure or flame failure.

2.22 CONTROL, SAFETY-COMBUSTION – A primary-safety control responsive directly to flame properties; sensing the presence of flame and causing fuel to be shut off in event of flame failure.

2.23 DRAFT REGULATOR – A device that functions to maintain a desired draft in the appliance by automatically reducing the chimney draft to the desired value.

2.24 ELECTRICAL CIRCUITS:

a) High-Voltage Circuit – A circuit involving a potential of not more than 600 volts and having circuit characteristics in excess of those of a low-voltage circuit.

b) Low-Voltage Circuit – A circuit involving a potential of not more than 30 volts rms alternating-current (42.4 volts peak or direct current) and supplied by:

1) A primary battery;

2) A Class 2 transformer; or

3) A combination of transformer and fixed impedance that, as a unit, complies with all the performance requirements for a Class 2 transformer.

A circuit derived from a high-voltage circuit, by connecting resistance in series with the supply circuit as a means of limiting the voltage and current is not considered to be a low-voltage circuit.

c) Safety-Control Circuit – A circuit involving one or more safety controls.

2.25 FLUE COLLAR – That portion of an appliance constructed for attachment of the chimney or vent connector.

2.26 FLUE GASES – Combustion products and excess air.

2.27 FUEL OIL – Any hydrocarbon oil defined by Standard Specifications for Fuel Oils, ASTM D396-1992.

2.28 HEATING SURFACE – A surface that transmits heat directly from flame or flue gases to the medium to be heated.

2.29 INDIRECT-FIRED APPLIANCE – An appliance constructed so that combustion products or flue gases are not mixed in the appliance with the medium to be heated; hence is provided with a flue collar.

2.30 MAINTENANCE – The periodic tasks usually performed to operate and maintain an appliance, such as air, fuel, pressure, and temperature regulation, cleaning, lubrication, resetting of controls, and the like. Repair and replacement of parts other than those expected to be renewed periodically is not considered to be maintenance. Some examples of maintenance are:

a) Cleaning or replacing nozzles, atomizers, and pilots.

b) Setting ignition electrodes.

c) Cleaning strainers or replacing strainer or filter element.

d) Resetting safety control.

e) Replacing igniter cable.