UL 207

STANDARD FOR SAFETY

Refrigerant-Containing Components and Accessories, Nonelectrical

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UL Standard for Safety for Refrigerant-Containing Components and Accessories, Nonelectrical, UL 207

Ninth Edition, Dated August 26, 2022

Summary of Topics

This revision of ANSI/UL 207 dated April 20, 2026 includes the following changes in requirements:

– Miscellaneous Requirements; 19.2, 20.1.2, Table 24.1, A5.4.4 note

– Joining Method Update; 9.7

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

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated March 7, 2025.

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AUGUST 26, 2022
(Title Page Reprinted: April 20, 2026)

ANSI/UL 207-2026

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UL 207

Standard for Refrigerant-Containing Components and Accessories, Nonelectrical

The First edition was titled Refrigerant-Containing Components and numbered, UL 207 (C).

First Edition –January, 1954
Second Edition – October, 1973
Third Edition – May, 1975
Fourth Edition – January, 1982
Fifth Edition – December, 1986
Sixth Edition – March, 1993
Seventh Edition – November, 2001
Eighth Edition –April, 2009

Ninth Edition

August 26, 2022

This ANSI/UL Standard for Safety consists of the Ninth Edition including revisions through April 20, 2026.

The most recent designation of ANSI/UL 207 as an American National Standard (ANSI) occurred on April 20, 2026. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

The Department of Defense (DoD) has adopted UL 207 on April 30, 1976. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

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

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INTRODUCTION

1 Scope

1.1 These requirements cover nonelectrical refrigerant-containing components and accessories, intended for field installation in accordance with the Safety Code for Mechanical Refrigeration, ASHRAE 15, in refrigeration systems, air conditioning equipment, or both, charged with the refrigerants identified for use in the component or accessory. The requirements also apply to components and accessories intended for use by manufacturers in factory-assembled systems or units, in which case the component or accessory is also judged under the requirements for the individual system or unit.

1.2 These requirements do not apply to:

a) Electric valves and electric refrigeration controllers, hermetic refrigerant motor-compressors and the like, which are covered in or as part of separate, individual requirements.

b) Electrical components of assemblies incorporating these refrigerant-containing components or accessories, and

c) Pressure vessels bearing the ASME Code “U” symbol which are within the Scope of the ASME Boiler and Pressure Vessel Code, Section VIII.

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.

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.

3 Units of Measurement

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

4 Terminology

4.1 As used in this standard, the term “component” refers to a refrigerant-containing component or accessory unless otherwise specified.

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5 Undated References

5.1 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.

6 Refrigerants

6.1 The kind of refrigerant employed in the system shall comply with the Standard for Refrigerants, UL 2182.

7 Glossary

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

7.2 ACCUMULATOR – A storage chamber for low side liquid refrigerant; also known as surge drum, surge header. Also, a pressure vessel whose volume is used in a refrigerant circuit to reduce pulsation.

7.3 CAPILLARY TUBE – Device made of tubing with an outer diameter less than 3/16 in. (4.7 mm) and used to reduce the pressure of the refrigerant between the condenser and evaporator. It also regulates the refrigerant flow.

7.4 CASCADE SYSTEM – A refrigeration system that incorporates two or more independent vapor-compressor refrigeration cycles in series. This is done to acquire low temperatures that may not be readily achieved with a single refrigeration cycle.

7.5 COMPRESSOR, OPEN-TYPE – A refrigerant compressor with a shaft or other moving part extending through its casing to be driven by an outside source of power thus requiring a shaft seal or equivalent rubbing contact between a fixed and moving part.

7.6 CONDENSER – That part of the system designed to liquefy refrigerant vapor by removal of heat.

7.7 CONDENSER COIL – A condenser constructed of pipe or tubing other than a shell and tube or shell and coil type.

7.8 CONDENSER, SHELL-AND-TUBE (OR SHELL-AND-COIL) – A condenser in which a nest of tubes or pipes, or a coil of tube or pipe, is contained in a shell. The tube(s) or pipe(s) carries fluid through it while the shell is also provided with an inlet and outlet for fluid flow.

7.9 CONDENSER, TUBE-IN-TUBE – Consists of one or more assemblies of two tubes, one within the other, in which the refrigerant vapor is condensed either in the annular space or in the inner tube.

7.10 CONDENSER, WATER-COOLED – An assembly of elements by which the flows of the refrigerant vapor and water are maintained in such a heat transfer relationship that the refrigerant vapor is condensed into a liquid and the water is heated.

7.11 CONTINUOUS OPERATING TEMPERATURE – The expected degree of hotness or coldness of a component surface during normal operating conditions and when the component is used in an expected application.

7.12 CRITICAL PRESSURE, CRITICAL TEMPERATURE AND CRITICAL VOLUME – Terms given to the state points of a substance at which liquid and vapor have identical properties. Above the critical pressure or critical temperature there is no line of demarcation between liquid and gaseous phases.

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7.13 DESICCANT – Any adsorbent that removes water or water vapor from the refrigerant.

7.14 DESIGN PRESSURE – The maximum allowable working pressure for which a specific part of a system is designed.

7.15 DOUBLE WALL CONSTRUCTION – A refrigerant containing component, such as a heat exchanger having two distinct thicknesses of material separating the fluid on one side of the component from the heat transfer fluid on the other side of the component. A component of this type incorporates either a vented interface or redundant construction to prevent the leakage from one fluid into the other. For the purposes of this definition, the term “fluid” is meant to encompass both liquids and gases.

7.16 DRIER – A device containing a desiccant placed in the refrigerant circuit, its primary purpose being to collect and hold within the desiccant all water in the system in excess of the amount which can be tolerated in the circulating refrigerant.

7.17 EVAPORATOR – That part of the system designed to vaporize liquid refrigerant to produce refrigeration.

7.18 EVAPORATOR COIL – An evaporator constructed of pipe or tubing other than a shell-and-tube or shell-and-coil type.

7.19 FILTER – A device intended to remove solid material from a fluid.

7.20 FIN – An extended surface, such as metal sheets attached to tubes, intended to increase the heat transfer area.

7.21 FUSIBLE ELEMENT – A metal with a relatively low melting point located within the relief opening of a fusible plug. The metal is intended to melt and flow away allowing the release of pressure if a pre-determined temperature is reached.

7.22 FUSIBLE PLUG – A device having a predetermined-temperature fusible element for the relief of pressure.

7.23 HEAT EXCHANGER (INTERCHANGER) – A device specifically designed to transfer heat between refrigerant in the high side and low side of the system.

7.24 HIGH SIDE – The parts of a refrigerating system subjected to condenser pressure.

7.25 JOINT, BRAZED – A gastight joint obtained by the joining of metal parts with alloys which melt at temperatures higher than 800 °F (427 °C) but less than the melting temperatures of the joined parts.

7.26 JOINT, MECHANICAL – A gastight joint obtained by the joining of metal parts through a positive holding mechanical construction.

7.27 JOINT, SOLDERED – A gastight joint obtained by the joining of metal parts with metallic mixtures or alloys which melt at temperatures not exceeding 800 °F (427 °C) and above 400 °F (204 °C).

7.28 JOINT, WELDED – A gastight joint obtained by the joining of metal parts in the plastic or molten state.

7.29 LINE SETS, REFRIGERATION – Pipes or tubing carrying refrigerant and connected between a condenser and a remotely located evaporator. One line is the “suction line” (also known as the “return” or “vapor” line) which carries the cooler gas refrigerant from the evaporator to the compressor and the other

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line is the “liquid line” which carries the warmer liquid refrigerant from the condenser to the expansion device/evaporator. The suction line would typically be insulated and have a larger diameter than the liquid line. These pipes or tubing can be used in both refrigeration or air conditioning applications.

7.30 LIQUID INDICATOR – A device located in the liquid line of a refrigerating system and having a sight port by which liquid flow may be observed.

7.31 LIQUID RECEIVER – A vessel permanently connected to a system by inlet and outlet pipes for the storage of liquid refrigerant.

7.32 LOW SIDE – The parts of a refrigerating system subjected to evaporator pressure.

7.33 MANIFOLD – That portion of the refrigeration circuit in which several branches are close together. Also, a single piece in which there are several fluid paths.

7.34 MAXIMUM ABNORMAL PRESSURE – The maximum pressure that could occur within a specific part of a system during any abnormal operating condition.

7.35 MUFFLER – Intended to dampen or remove hot gas pulsations set-up by a compressor, inserted in the discharge line as close to the compressor as is practical.

7.36 NOMINAL RATED RUPTURE PRESSURE – The average of the minimum and maximum marked bursting pressures of a rupture member.

7.37 OIL SEPARATOR – A device for separating oil and oil vapor from the refrigerant, usually installed in the compressor discharge line.

7.38 PIPING – The pipe or tube mains for interconnecting the various parts of a refrigerating system. Piping includes pipe, flanges, bolting, gaskets, valves, fittings, the pressure containing parts of other components such as expansion joints, strainers, and devices which serve such purposes as mixing, separating, snubbing, distributing, metering or controlling flow, pipe supporting fixtures and structural attachments.

7.39 PRESSURE REGULATING RELIEF VALVE – Similar to a pressure relief valve except specifically intended for use with refrigeration systems utilizing carbon dioxide (R744) as the refrigerant. The pressure relief setting of this valve is always lower than the relief setting of a pressure relief valve. This valve may open and re-close many times during the life of the system.

7.40 PRESSURE-LIMITING DEVICE – A pressure-responsive mechanism designed to automatically stop the operation of the pressure imposing element at a predetermined pressure.

7.41 PRESSURE-RELIEF DEVICE – A pressure actuated valve or rupture member designed to automatically relieve excessive pressure.

7.42 PRESSURE-RELIEF VALVE – A pressure actuated valve held closed by a spring or other means and designed to automatically relieve pressure in excess of its setting.

7.43 PRESSURE, SATURATION – The pressure at which there is stable coexistence of the vapor and liquid, or the vapor and solid phase.

7.44 PRESSURE, SUCTION (BACK) – The operating pressure measured in the suction line at the compressor inlet.

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7.45 PRESSURE, VAPOR – The pressure exerted by a vapor. Sometimes synonymous with saturated vapor pressure.

7.46 REDUNDANT CONSTRUCTION – A type of double wall construction used within a refrigerant containing component, such as a heat exchanger, that is not provided with a vented interface. Any leakage of a fluid through one wall of the component is prevented from entering the other side of the component by the second (redundant) wall.

7.47 REFRIGERANT – A substance used to produce refrigeration by its expansion or vaporization.

7.48 RELIEF TEMPERATURE, FUSIBLE PLUG – The temperature at which a complete blowout of the fusible element occurs allowing pressure to be relieved.

7.49 REFRIGERATION FITTING – Device used for joining together tubing, piping or refrigerant-containing components within air conditioning and refrigeration systems including but not limited to flare and compression types; press types and those designed for quick-connection or disconnection. This type of fitting is also considered to be a mechanical joint.

7.50 RUPTURE MEMBER – A device which will rupture at a predetermined pressure.

7.51 SECONDARY LOOP – A piping circuit containing a fluid circulating within the circuit. The fluid transfers heat from a remote type refrigerator to a colder heat exchanger located within the circuit. The circuit normally includes a circulating pump as well as other associated fittings. Such a circuit is considered to be equivalent to the low-side parts that are located in a refrigeration system.

7.52 STRAINER – A device for withholding foreign matter from a flowing liquid or gas.

7.53 TEMPERATURE, SATURATION – For a fluid, the boiling point corresponding to a given pressure; evaporation temperature; condensation temperature.

7.54 TUBE, FINNED – A heat transfer tube or pipe with extended surface in the form of fins, discs or ribs.

7.55 TUBE, SEAMLESS – A tube produced with an initially continuous periphery.

7.56 TUBE, SOFT COPPER – A seamless, soft copper tube, annealed to assure quality for bending and flaring.

7.57 TUBE, WELDED – A tube made from plate, sheet or strip with welded longitudinal or helical joint.

7.58 ULTIMATE STRENGTH – The highest stress level which the component can tolerate without rupture.

7.59 UNPROTECTED TUBING – Tubing which is not protected by an enclosure or suitable location so that it is exposed to crushing, abrasion, puncture or similar mechanical damage under installed conditions.

7.60 VALVE, CHARGING – A valve used to charge or add refrigerant to the system, or add oil to the compressor crankcase.

7.61 VALVE, CHECK – A valve allowing (fluid) flow in one direction only.

7.62 VALVE, STOP – A device intended to shut off the flow of refrigerant.

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