



UL 130

STANDARD FOR SAFETY

Electric Heating Pads

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UL Standard for Safety for Electric Heating Pads, UL 130

Thirteenth Edition, Dated July 15, 2011

Summary of Topics

This revision was issued to incorporate changes to the switch temperature limits.

The effective date for UL LLC will be announced through Industry File Review – Announcement Letter.

The revised requirements are substantially in accordance with Proposal(s) on this subject dated October 31, 2014.

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.

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The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

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UL 130

Standard for Electric Heating Pads

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The fifth edition was titled Standard for Electrically Heated Pads and Bedding.

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Third Edition – September, 1942
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Sixth Edition – November, 1968
Seventh Edition – August, 1975
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Ninth Edition – December, 1985
Tenth Edition – July, 1990
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Twelfth Edition – October, 2001

Thirteenth Edition

July 15, 2011

This UL Standard for Safety consists of the Thirteenth Edition including revisions through May 6, 2015.

The Department of Defense (DoD) has adopted UL 130 on February 15, 1983. 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 UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover electric heating pads for use in accordance with the National Electrical Code on either direct-current or single-phase alternating-current nominal 120 V supply circuits.

1.2 Pads are made in a variety of shapes and sizes for direct or indirect application to persons. A pad of unusual size or odd shape is to be judged on its compliance with the requirements in this standard and on further examination and tests to determine its acceptability for the intended use and possible misuses.

2 Components

2.1 A component of a product covered by this standard shall:

- a) Comply with the requirements for that component as indicated in this standard;
- b) Be used in accordance with its rating(s) established for the intended conditions of use;
- c) Be used within its established use limitations or conditions of acceptability;
- d) Additionally comply with the applicable requirements of this end product standard; and
- e) Not contain mercury.

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.

Exception No. 1: A component of a product covered by this standard is not required to comply with a specific component requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product;
- b) Is superseded by a requirement in this standard; or
- c) Is separately investigated when forming part of another component, provided the component is used within its established ratings and limitations.

Exception No. 2: A component complying with a component standard other than those cited in this standard is acceptable if:

- a) The component also complies with the applicable component standard identified in this standard; or
- b) The component standard:
 - 1) Is compatible with the ampacity and overcurrent protection requirements NFPA 70, where appropriate;
 - 2) Considers long-term thermal properties of polymeric insulating materials in accordance with Polymeric Materials - Long Term Property Evaluations, UL 746B; and

3) Any use limitations of the other component standard is identified and appropriately accommodated in the end use application. For example, a component used in a household application, but intended for industrial use and complying with the relevant component standard may assume user expertise not common in household applications.

2.2 A component that is also intended to perform other functions, such as over current protection, ground-fault circuit-interruption, surge suppression, any other similar functions, or any combination thereof, shall comply additionally with the requirements of the applicable standard(s) that cover devices that provide those functions.

Exception: Where these other functions are not required for the application and not identified as part of markings, instructions, or packaging for the appliance, the additional component standard(s) need not be applied.

2.3 A component not anticipated by the requirements of this standard, not specifically covered by the component standards identified in this standard, and that involves a potential risk of electric shock, fire, or personal injury, shall be additionally investigated in accordance with the applicable standard.

2.4 With regard to a component being additionally investigated, reference to construction and performance requirements in another end product standard is appropriate where that standard anticipates normal and abnormal use conditions consistent with the application of this standard.

2.5 Materials used in a Class 105 (A) insulation system shall comply with the Heating Test, Section 27. Materials used in an insulation system that operates above Class 105 (A) temperatures shall comply with the Standard for Systems of Insulating Materials - General, UL 1446.

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 Glossary

5.1 For the purpose of this standard, the following definitions apply.

5.2 **LOW-VOLTAGE CIRCUIT** – A circuit involving a potential of not more than 30 volts and supplied by a primary battery, by a standard Class 2 transformer, or by a combination of a transformer and a fixed impedance that, as a unit, complies with all the performance requirements for a Class 2 transformer. A circuit derived from a line-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.

CONSTRUCTION

6 General

6.1 Each pad shall be provided with a means to limit temperatures, be cord-connected, and have a moisture-resistant construction. A pad shall also be supplied with a switch, and a vinyl envelope with a supplementary cover or a treated fabric envelope with or without a supplementary cover, and shall be single- or multiple-heat.

6.2 Any supplementary cover, when provided, shall be easily removable to make the heating pad envelope readily accessible for inspection.

7 Envelope

7.1 The envelope shall be of materials acceptable for the application and shall enclose all electrical parts of the pad without any ventilation or other openings.

7.2 An envelope of unsupported vinyl sheeting on a household pad shall not be thinner than 0.012 inch (0.3 mm). See 7.3 and 7.4 for the method of measurement.

7.3 The average thickness of a rectangular specimen measuring approximately 1 by 4 inches (25 by 102 mm) is to be determined from measurements made by means of a dead-weight dial micrometer having a flat anvil and a flat-faced cylindrical presser foot that is 0.25 ± 0.01 inch (6.35 ± 0.25 mm) in diameter and exerts 85 ± 3 gf (0.83 ± 0.03 N) on the specimen. The calibration of the dial on the micrometer is to facilitate estimation of each measurement to 0.0001 inch (0.0025 mm).

7.4 The thickness of a specimen is to be measured midway across the width of the specimen at the center of its length and at points 1/2 inch (13 mm) from each end. Each measurement is to be estimated at the nearest 0.0001 inch (0.0025 mm) and recorded. The smallest of the three recorded thicknesses is to be rounded off to the nearest 0.001 inch (0.025 mm).

7.5 A heating pad provided with a treated fabric envelope and no supplementary cover shall comply with the flammability tests specified in 21.2.1 – 21.6.17 and the Ease of Ignition Test, Section 22.

7.6 All seams in a treated-fabric envelope shall be strongly stitched or otherwise equivalently secured and shall be positioned where they are not unduly subject to stress during actual use.