



UL 1692

STANDARD FOR SAFETY

Polymeric Materials – Coil Forms

UL Standard for Safety for Polymeric Materials – Coil Forms, UL 1692

Second Edition, Dated June 30, 1999

SUMMARY OF TOPICS

This revision of ANSI/UL 1692 dated January 8, 2019, is being issued to indicate the most recent designation as a Reaffirmed American National Standard.

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 requirements are substantially in accordance with Proposal(s) on this subject dated October 12, 2018.

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JUNE 30, 1999

(Title Page Reprinted: January 8, 2019)



ANSI/UL 1692-2009 (R2019)

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UL 1692

Standard for Polymeric Materials – Coil Forms

First Edition – May, 1994

Second Edition

June 30, 1999

This ANSI/UL Standard for Safety consists of the Second Edition including revisions through January 8, 2019.

The most recent designation of ANSI/UL 1692 as a Reaffirmed American National Standard (ANS) occurred on January 8, 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 parts made of polymeric materials that are used in electrical equipment and describe the various test procedures and their use in the testing of such parts and equipment.

1.2 These requirements do not cover the specific insulating systems that are covered by the requirements contained in the Standard for Systems of Insulating Materials, General, UL 1446.

1.3 Test procedures are provided herein for the evaluation of polymeric materials in specific applications. These test procedures include references to data obtained from small-scale property tests conducted under standard conditions as well as other practical means of evaluation.

1.4 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this Standard, and that involves a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements to determine that the level of safety as originally anticipated by the intent of this Standard is maintained. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this Standard shall not be judged to comply with this Standard. Where appropriate, revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this Standard.

1.4 revised June 30, 1999

2 Glossary

2.1 RISK OF ELECTRIC SHOCK – A risk of electric shock is considered to exist at any part if:

- a) The potential between the part and earth ground or any other accessible part is more than 42.4 V peak, and
- b) The continuous current flow through a 1500 ohm resistor connected across the potential exceeds 0.5 mA.

2.2 RISK OF FIRE – A risk of fire is considered to exist at any two points in a circuit where:

- a) The open circuit voltage is more than 42.4 V peak and the energy available to the circuit under any condition of load, including short circuit, results in a current of 8 A or more after 1 minute of operation, or
- b) A power of more than 15 watts can be delivered into an external resistor connected between the two points.

3 General

3.1 If a value for measurement is followed by a value in other units, the use of either value can be expected to provide equivalent results in the application of such requirements. Each of the requirements is stated in SI units as well as in U.S. customary units. Equivalent, although not necessarily exactly identical results, are to be expected from applying a requirement in SI units or U.S. customary units. Equipment calibrated in metric units is to be used when a requirement is applied in metric terms.

4 Thermoplastic Coil Forms

4.1 Sections 5 – 8 contain requirements for insulation systems which employ thermoplastic materials as major insulation, such as ground and interwinding insulation ultimate encapsulant that is not enclosed in metal, and are used in motors, contactors, relays, solenoids and transformers.

4.2 Sections 5 – 8 apply to such insulation systems operating at a hot-spot temperature of 105°C (221°F), or below.

4.3 Insulation systems operating above a hot-spot temperature of 105°C (221°F) shall be evaluated with respect to the requirements for Systems of Insulating Materials – General, UL 1446.

4.4 The requirements in Sections 5 – 8 only apply to thermoplastic materials used as major insulation. Samples of a product which have been evaluated under these requirements, and have been found not to comply, shall be analyzed to determine whether the noncompliance was due to the thermoplastic insulating material, or whether it was due to a material not covered by these requirements.

4.4 revised July 15, 2009

4.5 A thermoplastic insulating material used as major insulation in an insulation system electrically isolates the windings and other live parts of the system from other live parts and/or dead metal parts.

4.6 A thermoplastic insulating material used as major insulation in an insulation system, shall have short- and long-term electrical and mechanical properties such that the ability of the material to serve as electrical insulation and maintain physical spacings between windings and dead metal parts of the system is not impaired.

4.7 If a thermoplastic insulating material used as major insulation in an insulation system melts or distorts under intended and/or abnormal use, such melting or distortion shall not result in a risk of electric shock or fire.

4.8 A thermoplastic insulating material used as major insulation in an insulation system shall be acceptable for the end-use application under both intended and abnormal temperature conditions.

4.9 For the purposes of these requirements, each secondary winding tap other than a center tap, and each primary winding tap that is intended to supply power to a load, shall be considered to be the equivalent of a secondary winding.