

UL 183

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Manufactured Wiring Systems

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UL Standard for Safety for Manufactured Wiring Systems, UL 183

Third Edition, Dated October 23, 2003

Revisions: This Standard contains revisions through and including March 30, 2007.

Summary of Topics

These revisions to ANSI/UL 183 include the following changes in requirements:

Addition of glossary terms

Addition of a requirement for receptacles mounted on covers

Addition of a green color marking for a pressure terminal connector

Addition of a requirement for identification of grounded conductors

Addition of Section 14B, Control Circuits

Addition of Section 14C, Laser Devices

Revisions to the grounding requirements

Addition of requirements for accessibility to uninsulated live parts

Revision of requirements for the Pull-Out Test

Update to the Standards for Components, Appendix A

Text that has been changed in any manner is marked with a vertical line in the margin. Changes in requirements are marked with a vertical line in the margin and are followed by an effective date note indicating the date of publication or the date on which the changed requirement becomes effective.

A change in an effective date is indicated by a note following the affected item, and giving both the previous effective date and the new date the requirement becomes effective.

The following table lists the future effective dates with the corresponding reference.

Future Effective Date	Reference
October 23, 2008	Paragraphs 10.8, 10.9, 37.18, 38.5, and Section 34
March 26, 2009	Paragraphs 10.10, 13.10, 14.5, 37.19, 16.4, 16.5, and Sections 14B, 14C, 20A

The new and revised requirements are substantially in accordance with UL's Proposal(s) on this subject dated October 6, 2006 and February 16, 2007.

The revisions dated March 30, 2007 include a reprinted title page (page1) for this Standard.

In the revisions dated March 30, 2007, pages 20A and 20B have been intentionally deleted from the Standard due to the deletion or relocation of text. Please discard any previous versions of these pages from your paper copy of the Standard.

The revisions dated August 15, 2006 were issued to postpone the effective date of October 23, 2006 to October 23, 2008.

The revisions dated March 3, 2005 were issued to postpone the effective date of October 23, 2005 to October 23, 2006.

As indicated on the title page (page 1), this UL Standard for Safety is an American National Standard. Attention is directed to the note on the title page of this Standard outlining the procedures to be followed to retain the approved text of this ANSI/UL Standard.

The UL Foreword is no longer located within the UL Standard. For information concerning the use and application of the requirements contained in this Standard, the current version of the UL Foreword is located on ULStandardsInfoNet at: <http://ulstandardsinfo.net.ul.com/ulforeword.html>

The master for this Standard at UL's Northbrook Office is the official document insofar as it relates to a UL service and the compliance of a product with respect to the requirements for that product and service, or if there are questions regarding the accuracy of this Standard.

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New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

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This Standard consists of pages dated as shown in the following checklist:

Page	Date
1-3	March 30, 2007
4-5	October 23, 2003
6	October 25, 2004
7-8B	March 30, 2007
9-10B	October 25, 2004
11	October 23, 2003
12	October 25, 2004
13	March 30, 2007
14	October 25, 2004
15-20	March 30, 2007
21	October 23, 2003
22-22B	March 30, 2007
23	October 23, 2003
24-26D	October 25, 2004
27	August 15, 2006
28-29	October 23, 2003
30	October 25, 2004
31-32	March 30, 2007
A1-A2	March 30, 2007
SR1-SR2	March 30, 2007

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OCTOBER 23, 2003
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ANSI/UL 183-2007

1

UL 183

Standard for Manufactured Wiring Systems

First Edition – October, 1984
Second Edition – August, 1993

Third Edition

October 23, 2003

The most recent designation of ANSI/UL 183 as an American National Standard (ANSI) occurred on March 22, 2007.

This ANSI/UL Standard for Safety, which consists of the Third edition with revisions through March 30, 2007, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements. 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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APPENDIX A

Standards for Components.....	A1
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INTRODUCTION

1 Scope

1.1 These requirements cover wiring systems for use in outdoor locations, field-installed wiring assemblies using off-site manufactured subassemblies for branch circuits, remote-control circuits, signaling circuits, and communication circuits in accessible areas. The products covered under this standard are to be installed in accordance with Article 604 of the National Electrical Code, ANSI/NFPA 70.

2 Glossary

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

2.2 ACCESSIBLE PART – A part that is:

- a) Located so that it can be contacted by a person; or
- b) Not recessed the required distance behind an opening.

2.2.1 BRANCH CIRCUIT – The circuit conductors between the final over-current device protecting the circuit and the outlet(s).

2.2.1 added March 30, 2007

2.2.2 BRANCH CIRCUIT, MULTIWIRE – A branch circuit that consists of two or more ungrounded conductors that have a voltage between them, and a grounded conductor that has equal voltage between it and each ungrounded conductor of the circuit, and that is connected to the neutral or grounded conductor of the system.

2.2.2 added March 30, 2007

2.2.3 CLASS 2 CIRCUIT – An isolated secondary circuit involving a potential of not more than 30-volt rms maximum 42.4 volts peak open circuit secondary potential under any condition of loading or open circuit by:

- a) An inherently-limited Class 2 transformer;
- b) A combination of an isolated transformer secondary winding and a fixed impedance or regulating network that together comply with the performance requirements for an inherently-limited Class 2 transformer;
- c) A dry-cell battery having output characteristics not greater than those of an inherently-limited Class 2 transformer;
- d) Any combination of (a), (b), and (c) that together comply with the performance requirements for an inherently-limited Class 2 transformer; or
- e) One or more combinations of a Class 2 transformer and an overcurrent protective device that together comply with the performance requirements for a noninherently-limited Class 2 transformer.

A circuit derived from a line-connected circuit by connecting impedance in series with the supply circuit as a means of limiting the voltage and current is not considered to be a Class 2 circuit.

2.2.3 added March 30, 2007

2.3 CONNECTOR – Polymeric material that houses the contacts. Connectors are secured in place within an enclosure. In some instances, the connector serves as the polymeric enclosure for the contacts.

2.4 ENCLOSURE – A housing which provides a degree of protection against contacting live parts (i.e., connector, conductors, and contacts). The enclosures are constructed of metal, polymeric material, or hybrid (combination of metal and polymer).

2.5 ENCLOSURE, ENVIRONMENTAL – The portion or portions of a device intended to provide a degree of protection to the contacts, blades, terminals, conductors, and other live parts of the device and of any adjoining devices or components comprising a complete protective system against outdoor conditions, both when the device is unmated and when it is fully connected to its intended mating device.

2.6 FITTING – A means of securing conduit, cable, or raceway to an enclosure or box.

2.7 INSULATION, BASIC – The insulation necessary for the intended functioning of the product and for basic protection against the risk of electric shock.

2.8 INSULATION, SUPPLEMENTARY – An independent insulation provided in addition to the basic insulation to reduce the risk of electric shock in case of breakdown of the basic insulation.

2.8.1 LIMITED POWER SOURCE (LPS) – A limited power source is as specified in the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1, and shall comply with the requirements of UL 60950-1.

2.8.1 added March 30, 2007

2.9 LOW-VOLTAGE CIRCUIT – A circuit involving a potential of not more than 30 volts dc or ac rms (42.4 volts ac peak).

2.10 RACEWAY – A completely enclosed channel intended specifically for holding and routing wiring and providing separation of:

- a) Power and lighting circuits; and
- b) Power-limited or communication circuits.

2.11 RISK OF ELECTRIC SHOCK – A risk of electric shock is considered to exist in any accessible connective part of a system if a potential greater than 42.4 volts peak (30 volts rms) exists, and the available current is more than 5 milliamperes (7.07 mA peak) through a 1500-ohm resistor connected between:

- a) The part and other accessible connective parts; or
- b) Between the part and ground.

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2.12 RISK OF FIRE – A risk of fire is considered to exist in any branch-circuit-connected component part or assembly. In addition, risk of a fire is considered to exist in a component part or assembly if the power supply for such a part or assembly is capable of delivering more than 15 watts into an external resistor connected between the point in question and any return to the supply. A power supply not capable of delivering more than 15 watts as previously mentioned, is considered to be energy limited.

2.13 SECONDARY CIRCUIT – A circuit that is supplied by an induced voltage from a primary, where a primary circuit is that supplied by a branch circuit.

2.13 added March 30, 2007

3 Components

3.1 A component of a product covered by this standard shall comply with the requirements for that component, and shall be used in accordance with its recognized rating and other limitations of use. See Appendix A for a list of standards covering components used in the products covered by this standard.

3.3.1 Component receptacles shall be used with conductors or leads in accordance with their recognized rating and other limitations of use in accordance with the Standard for Attachment Plugs and Receptacles, UL 498.

3.3.1 added October 25, 2004

3.2 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.

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

3.4 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.

3.5 Prefabricated floor boxes shall comply with the Standard for Metallic Outlet Boxes, UL 514A, when used as a component of a manufactured wiring system.

3.6 NEMA type receptacles shall comply with the Standard for Attachment Plugs and Receptacles, UL 498, when used as a component of a manufactured wiring system.

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4 Units of Measurement

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

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.

CONSTRUCTION

6 General

6.1 A manufactured wiring system shall be formed and assembled so that it has the strength and secureness of connections necessary to resist the abuses to which it is subjected without introducing a risk of fire, electric shock, or injury to persons due to the total or partial separation and resulting reduction of spacings, loosening or displacement of parts, or other serious defects.

6.2 Manufactured wiring systems intended for outdoor locations shall comply with the outdoor use construction and performance requirements specified in Section 32, Outdoor Use Performance, and 37.17.

7 Connecting Cable and Flexible Metal Conduit

7.1 Cable shall be Type AC or Type MC, having 8 AWG (8.4 mm²), 10 AWG (5.3 mm²), or 12 AWG (3.3 mm²) insulated copper ungrounded circuit conductors nominally rated 600 volts. A bare or insulated copper grounding conductor equivalent in size to the ungrounded circuit conductor shall also be provided.

Exception No. 1: A fixture tap not longer than 6 feet (1.83 m) and intended for connection to a single fixture may contain conductors smaller than 12 AWG but not smaller than 18 AWG.

Exception No. 2: Conductors for use in remote control, signaling, or communications circuits may be smaller than 12 AWG.

Exception No. 3: The grounded circuit conductor of type MC or type AC cable may be larger in size than the other conductors provided the grounded circuit conductor does not exceed 8 AWG (8.4 mm²).

7.1 revised October 25, 2004

7.2 Type AC or Type MC shall comply with the Standard for Armored Cable, UL 4, or the Standard for Metal Clad Cables, UL 1569.

7.3 Flexible metal conduit or liquid-tight flexible conduit shall be 3/8 inch (9.5 mm) or larger trade size provided with 8 AWG (8.4 mm²), 10 AWG (5.3 mm²), or 12 AWG (3.3 mm²) insulated copper conductors and an insulated or uninsulated copper-grounding conductor equivalent in size to the ungrounded circuit conductor.

Exception No. 1: Conductors shall not be smaller than 12 AWG unless they comply with Exception No. 1 or Exception No. 2 of 7.1.

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