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Group**

**C22.2 No. 41-13**

# Grounding and bonding equipment

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Underwriters Laboratories Inc.  
UL 467  
Tenth Edition

## Grounding and Bonding Equipment

March 22, 2013



ANSI/UL 467-2013

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## Preface

This is the harmonized ANCE, CSA Group, and UL Standard for Grounding and Bonding Equipment. It is the first edition of NMX-J-590-ANCE, the sixth edition of CSA C22.2 No. 41, and the tenth edition of UL 467. This edition of CSA C22.2 No. 41 supersedes the previous edition published in 2007. This edition of UL 467 supersedes the previous edition published in 2007.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the CSA Group, and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Committee for Connectors, of the Council on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA), are gratefully acknowledged.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This standard was reviewed by the CSA Integrated Committee on Electrical Connectors, under the jurisdiction of the CSA Technical Committee on Wiring Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

**Note:** *Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.*

### Level of harmonization

This standard uses the IEC format but is not based on, nor is it considered equivalent to, an IEC standard. This standard is published as an equivalent standard for ANCE, CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

### Reasons for differences from IEC

The Technical Harmonization Committee identified one IEC standard, IEC 60364-5-54, that addresses grounding and bonding equipment included in the scope of this Standard, Electrical installations of buildings – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements, protective conductors and protective bonding conductors. This standard addresses the earthing arrangements, protective conductors, and protective bonding conductors in order to satisfy the safety requirements of the electrical installation. It has the status of a basic safety publication in accordance with IEC Guide 104.

The IEC standards for grounding and bonding equipment are recognized as being generally system specific. The THC determined that the safe use of grounding and bonding equipment is dependent on the design and performance of the grounding and bonding equipment in relation to the North American electrical codes with which they are intended to be installed.

### **Interpretations**

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

### **ANCE effective date**

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### **CSA Group effective date**

The effective date for CSA Group will be announced through CSA Informs or a CSA Group certification notice.

### **UL effective date**

As of March 22, 2013, all products Listed or Recognized by UL must comply with the requirements in this standard except for annexes in the following list, which are effective March 22, 2016.

Annex C and Annex D

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

## 1 Scope

1.1 This Standard applies to grounding and bonding equipment for use in accordance with the *Canadian Electrical Code, Part I, CSA C22.1*, in Canada, the *National Electrical Code, NFPA 70*, in the United States, or the *Standard for Electrical Installations, NOM-001-SEDE*, in Mexico.

1.2 This Standard applies to the following grounding and bonding equipment:

- a) ground clamps, bonding devices, grounding bushings, water-meter shunts, grounding electrodes, and the like used in a grounding system;
- b) equipment for making electrical connections between
  - i) the grounding conductors used in electrical power systems, non-current-carrying metal parts of electrical equipment, armored grounding wires, metal raceways, and the like; and
  - ii) grounding electrodes;
- c) equipment for making electrical connections between
  - i) the grounding conductors used in telecommunications systems such as telephone, radio, CATV, network power broadband, and the like; and
  - ii) grounding electrodes;
- d) hospital grounding jacks and mating grounding cord assemblies (for Mexico and the United States, see Annex A);
- e) bonding devices for making electrical connections between
  - i) the hex head of a brass fitting used in a piping system in accordance with 250.104 of NFPA 70; and
  - ii) the grounding electrodes; and
- f) intersystem bonding terminations for connecting intersystem bonding and grounding conductors for other systems in accordance with NFPA 70.

### Notes:

1) In Canada, "hospital grounding jacks" are not defined in *CSA C22.1, Canadian Electrical Code, Part I*.

2) In Canada, "mating ground cord assemblies" are covered in *CSA C22.2 No. 21* and *CSA C22.2 No. 42*.

## 2 Reference publications

For undated references to Standards, such reference shall be considered to refer to the latest edition and all revisions to that edition up to the time when this Standard was approved. For dated references to Standards, such reference shall be considered to refer to the dated edition and all revisions published to that edition up to the time the Standard was approved.

### ANCE (Association of Standardization and Certification)