

# Grounding and bonding equipment



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Standard for Safety for Grounding and Bonding Equipment

Seventh Edition, Dated April 29, 2022

**Summary of Topics**

***This is the new Seventh Edition of the Standard for Grounding and Bonding Equipment, dated April 29, 2022.***

***As noted in the Commitment for Amendments statement located on the back side of the title page, UL, CSA, and ANCE are committed to updating this harmonized standard jointly.***



Association of Standardization and Certification  
NMX-J-590-ANCE  
Second Edition



CSA Group  
CSA C22.2 No. 41:22  
Seventh Edition



Underwriters Laboratories Inc.  
UL 467  
Eleventh Edition

## Grounding and Bonding Equipment

April 29, 2022



ANSI/UL 467-2022

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This ANSI/UL Standard for Safety consists of the Eleventh edition. The most recent designation of ANSI/UL 467 as an American National Standard (ANSI) occurred on April 29, 2022. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

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**CONTENTS**

|   |          |
|---|----------|
| <b>Preface .....</b>  | <b>7</b> |
| 1 Scope .....   | 9        |
| 2 Reference publications .....  | 9        |
| 3 Definitions .....   | 11       |
| 4 General requirements .....  | 12       |
| 5 Components .....  | 12       |
| 6 Construction .....  | 12       |
| 6.1 General .....   | 12       |
| 6.2 Protective-type ground clamps .....                               | 13       |
| 6.3 Strap-type clamps.....  | 14       |
| 6.4 Protection against corrosion .....                                | 14       |
| 6.5 Ground clamps.....  | 15       |
| 6.6 Bushings.....   | 15       |
| 6.7 Fittings.....   | 16       |
| 6.8 Water-meter shunts .....  | 16       |
| 6.9 Armored grounding wire .....                                      | 16       |
| 6.10 Grounding electrodes.....  | 17       |
| 6.11 Ground mesh.....   | 18       |
| 6.12 Miscellaneous devices .....                                      | 18       |
| 7 Test requirements .....   | 19       |
| 7.1 Wire connectors .....   | 19       |
| 7.2 Tightening force for ground clamps .....                          | 19       |
| 7.3 Pull – protective-type ground clamp .....                         | 19       |
| 7.4 Grounding and bonding devices with throat liners.....             | 19       |
| 7.5 Short-time current.....   | 19       |
| 7.6 Thickness of protective coating.....                              | 19       |
| 7.7 Rod electrodes .....  | 20       |
| 7.8 Coating integrity .....   | 20       |
| 7.9 Temperature conditioning (communications strap-type clamp) .....  | 20       |
| 7.10 Grounding and bonding devices for the termination of armor ..... | 20       |
| 8 Sampling requirements.....  | 20       |
| 8.1 Wire connectors .....   | 20       |
| 8.2 Tightening force for ground clamps .....                          | 20       |
| 8.3 Pull – protective-type ground clamp .....                         | 20       |
| 8.4 Grounding and bonding devices with throat liners.....             | 21       |
| 8.5 Short-time current.....   | 21       |
| 8.6 Thickness of protective coating.....                              | 21       |
| 8.7 Rod electrodes .....  | 21       |
| 8.8 Coating integrity .....   | 21       |
| 8.9 Temperature conditioning (communications strap-type clamp) .....  | 21       |
| 8.10 Grounding and bonding devices for the termination of armor ..... | 21       |
| 9 Test methods .....  | 21       |
| 9.1 Wire connectors .....   | 21       |
| 9.2 Tightening force for ground clamps .....                          | 22       |
| 9.3 Pull – protective-type ground clamp .....                         | 22       |
| 9.4 Grounding and bonding devices with throat liners.....             | 22       |
| 9.5 Short-time current.....   | 22       |
| 9.6 Thickness of protective coating.....                              | 23       |
| 9.7 Rod electrodes .....  | 24       |
| 9.8 Coating integrity .....   | 24       |
| 9.9 Temperature conditioning (communications strap-type clamp) .....  | 25       |
| 9.10 Grounding and bonding devices for the termination of armor ..... | 25       |

|    |                                       |    |
|----|---------------------------------------|----|
| 10 | Marking, labeling, and packaging..... | 25 |
|----|---------------------------------------|----|

### **Annex A – (Normative – United States and Mexico only) Hospital Grounding Equipment**

|     |   |    |
|-----|---|----|
| A.1 | General.....                                | 34 |
| A.2 | Construction.....                           | 34 |
|     | A.2.1 Cord.....                             | 34 |
|     | A.2.2 Field-wiring terminals and leads..... | 34 |
|     | A.2.3 Grounding jacks.....                  | 34 |
|     | A.2.4 Samples.....                          | 35 |
| A.3 | Performance.....                            | 35 |
|     | A.3.1 Contact resistance.....               | 35 |
|     | A.3.2 Endurance.....                        | 35 |
|     | A.3.3 Strain relief.....                    | 35 |
|     | A.3.4 Flame resistance.....                 | 35 |
|     | A.3.5 Dielectric voltage withstand.....     | 35 |
|     | A.3.6 Accelerated aging.....                | 35 |
| A.4 | Marking.....                                | 36 |

### **Annex B (informative) – French translations and markings**

### **Annex C – (Normative – United States only) Protector Grounding Conductor – For Use in Communications Circuits**

#### **INTRODUCTION**

|     |            |    |
|-----|------------|----|
| C.1 | Scope..... | 38 |
|-----|------------|----|

#### **CONSTRUCTION**

|     |   |    |
|-----|---|----|
| C.2 | Conductors.....                             | 38 |
| C.3 | Covering.....                               | 38 |
| C.4 | Marking.....                                | 39 |
|     | C.4.1 General.....                          | 39 |
|     | C.4.2 Month and year of manufacture.....    | 39 |
|     | C.4.3 Multiple manufacturing locations..... | 39 |

#### **PERFORMANCE**

|     |                          |    |
|-----|--------------------------|----|
| C.5 | Physical properties..... | 39 |
| C.6 | Flammability.....        | 39 |

### **Annex D – (Normative) Exothermic Welding Connection Systems**

#### **INTRODUCTION**

|     |            |    |
|-----|------------|----|
| D.1 | Scope..... | 40 |
|-----|------------|----|

#### **CONSTRUCTION**

|     |                                |    |
|-----|--------------------------------|----|
| D.2 | General.....                   | 40 |
| D.3 | Markings.....                  | 40 |
| D.4 | Installation instructions..... | 40 |

**PERFORMANCE**

|     |                           |    |
|-----|---------------------------|----|
| D.5 | Short-time current .....  | 40 |
| D.6 | Mechanical sequence ..... | 41 |

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## Preface

This is the harmonized ANCE, CSA Group, and UL standard for grounding and bonding equipment. It is the second edition of NMX-J-590-ANCE, the seventh edition of CSA C22.2 No. 41, and the eleventh edition of UL 467. This edition of CSA C22.2 No. 41 supersedes the previous edition published in 2013. This edition of UL 467 supersedes the previous edition published in 2013.

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.

The present Mexican standard was developed by the CT Conductors from the Comite de Normalizacion de la Asociacion de Normalizacion y Certificacion, A.C., CONANCE, with the collaboration of the connectors manufacturers and users.

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 developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

### Application of 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.

## 1 Scope

1.1 This Standard applies to grounding and bonding equipment for use in accordance with CSA C22.1, Canadian Electrical Code, Part I 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.

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