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C22.2 No. 280-13

Electric vehicle supply equipment

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Association of Standardization and Certification
NMX-J-677-ANCE-2013
First Edition



CSA Group
CSA C22.2 No. 280-13
First Edition



Underwriters Laboratories Inc.
UL 2594
First Edition

Standard for Electric Vehicle Supply Equipment

February 22, 2013



ANSI/UL 2594-2013

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Preface

This is the harmonized ANCE, CSA Group, and UL Standard for Electric Vehicle Supply Equipment. It is the First edition of NMX-J-677-ANCE, the First edition of CSA C22.2 No. 280, and the First edition of UL 2594.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), CSA Group, and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Working Group for Electric Vehicle Supply Equipment 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 reviewed and approved by the Comité de Normalización de la Asociación de Normalización y Certificación, A.C., CONANCE.

This standard was reviewed by the CSA Subcommittee on Electric Vehicle – Supply Equipment, under the jurisdiction of the CSA Technical Committee on Industrial 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 specimens 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 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

This standard provides general requirements for electric vehicle supply equipment for use in accordance with the electrical installation codes of Canada, Mexico, and the United States. At present there is no IEC standard for these products for use in accordance with these codes. Therefore, this standard does not employ any IEC standard for base requirements.

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

The effective date for ANCE will be announced through the *Diario Oficial de la Federación* (Official Gazette) and is indicated on the cover page.

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 February 22, 2013, all products Listed or Recognized by UL must comply with the requirements in this Standard.

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

INTRODUCTION

1 Scope

1.1 This Standard covers conductive electric vehicle (EV) supply equipment with a primary source voltage of 600 V ac or less, with a frequency of 60 Hz, and intended to provide ac power to an electric vehicle with an on-board charging unit. This Standard covers electric vehicle supply equipment intended for use where ventilation is not required.

1.2 With reference to 1.1, the electric vehicle supply equipment covered by this Standard includes:

- a) Portable EV Cord Sets – Rated 125 Vac maximum, 20 A maximum, intended for indoor and outdoor use;
- b) Stationary EV Cord Sets – Rated 125 Vac maximum, 20 A maximum, intended for indoor and outdoor use;
- c) Stationary EV Cord Sets – Rated 250 Vac maximum, 40 A maximum, intended for indoor use only;
- d) Movable EV Charging Stations – Rated 125 Vac maximum, intended for indoor and outdoor use;
- e) Movable EV Charging Stations – Rated 250 Vac maximum, 40 A maximum, intended for indoor use only;
- f) Permanent EV Charging Station – Rated 600 Vac maximum, intended for indoor or indoor/outdoor use; or
- g) Permanent EV Power Outlet – Rated 600 Vac maximum, intended for indoor or indoor/outdoor use.

EV Power Outlets provide a receptacle where one did not previously exist.

For Mexico, use 127 Vac where 120 or 125 Vac is referenced in this Standard. In Canada and the United States, this does not apply.

1.3 The products covered by this Standard are intended for use in accordance with the Installation Codes in Annex A, Ref. No.1.

1.4 This Standard does not cover cord sets or power supply cords for applications other than EV charging cord sets. For cord sets and power supply cords not covered by this Standard, refer to Annex A, Ref. No. 2 and No. 3.

1.5 With reference to 1.2, this Standard does not cover electric vehicle charging equipment. For EV charging equipment not covered by this Standard, refer to Annex A, Ref. No. 4.