



CSA C22.2 No. 94.2:20 National Standard of Canada



Enclosures for electrical equipment, environmental considerations



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CSA C22.2 No. 94.2:20

Enclosures for electrical equipment, environmental considerations



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Standard for Safety for Enclosures for Electrical Equipment, Environmental Considerations

Third Edition, Dated October 15, 2020

Summary of Topics

This new edition dated October 15, 2020 includes the following changes in requirements:

Adhesives Used to Secure Observation Windows; [7.1.1](#), [7.1.3](#), [7.1.4](#), Annex [B](#)

Alternate Investigation to Tensile Strength and Elongation Test for Gaskets; [7.7.1](#), Section [8.13.5](#)

Clarification of Additional Corrosion Protection; [7.2.1.1](#)

Expand Eligible Grades of Austenitic Stainless Steel in UL 50E; Title of Section [7.2.3](#), [7.2.4.1](#), [8.8.1.1](#), [8.8.2.1.1](#), Section [8.9](#)

Alternative Aging for Gasket Tensile Strength and Elongation Tests; [8.13.2.1](#), [8.13.2.2](#)

Allowance of X Ray Spectrometry for Metallic Coating Thickness Test; [7.2.3.1](#), Annex [B](#)

Allowance for Type Rated Ventilated Enclosures; [7.3.1.1](#), [7.3.5.1](#), [7.4.3.2](#), [7.5.1](#), [8.1.2](#), [8.4.1.1.1](#), [8.4.2.1.1.2](#), [8.4.2.2.1.1](#), [Table 1](#), [Table 2](#), [Table 6](#)

Orientation of Sample for Hosedown Test; [8.4.1.2.1](#) – [8.4.1.2.3](#), [8.6.1](#) – [8.6.3](#)

Length of Conduit for Misalignment Test; [8.15.1.2](#), [8.15.1.3](#)

Required Torque for Conduit Hubs for Misalignment Test; [8.15.1.1](#)

Sealants Used with Enclosures; Sections [7.8](#) and [8.17](#)

New Annex E for Adhesives, Enclosures, Non-mechanical Means of Securement; Annex [B](#)

Requirements for Encapsulated Enclosures; Annex [F](#)

Typo Correction in [Table 4](#)



Association of Standardization and Certification
NMX-J-235/2-ANCE-2020
Fourth Edition



CSA Group
CSA C22.2 No. 94.2:20
Third Edition



Underwriters Laboratories Inc.
UL 50E
Third Edition

Enclosures for Electrical Equipment, Environmental Considerations

October 15, 2020



ANSI/UL 50E-2020

Commitment for Amendments

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This ANSI/UL Standard for Safety consists of the Third Edition.

The most recent designation of ANSI/UL 50E as an American National Standard (ANSI) occurred on October 15, 2020. 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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Preface

This is the harmonized ANCE, CSA Group, and UL standard for Enclosures for Electrical Equipment, Environmental Considerations. It is the fourth edition of NMX-J-235/2-ANCE-2020, the third edition of CSA C22.2 No. 94.2-20, and the third edition of UL 50E. This edition of NMX-J-XXX-ANCE supersedes the previous edition published on October 16, 2015. This edition of CSA C22.2 No. 94.2 supersedes the previous edition published in 2015. This edition of UL 50E supersedes the previous edition published on October 16, 2015.

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 Technical Harmonization Committee 70/31 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 CDI Control y Distribución Industrial from the Comité de Normalización de la Asociación de Normalización y Certificación, A.C., CONANCE, with the collaboration of the enclosures manufacturers and users.

This standard was reviewed by the CSA Integrated Committee on Enclosures, 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 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 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 THSC investigated and found no existing IEC standards or work programs covering the scope of the products in this standard.

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.

Enclosures for Electrical Equipment, Environmental Considerations

1 Scope

1.1 This standard applies to enclosures for electrical equipment intended to be installed and used in non-hazardous locations in accordance with the Canadian Electrical Code, Part I, CSA C22.1, the provisions of the National Electrical Code, NFPA 70, and the provisions of Mexico's Electrical Installations, NOM-001-SEDE, as follows:

- a) Enclosures for indoor locations, Types 1, 2, 5, 12, 12K, and 13; and
- b) Enclosures for indoor or outdoor locations, Types 3, 3X, 3R, 3RX, 3S, 3SX, 4, 4X, 6, and 6P.

1.2 This standard covers additional environmental construction and performance requirements for enclosures. The general requirements for enclosures are contained in CSA C22.2 No. 94.1, UL 50, and NMX-J-235/1-ANCE (See Annex B, Ref. No. 10) or the end-use product standards that are to be used in conjunction with this standard.

1.3 This standard does not cover the requirements for protection of devices against conditions such as condensation, icing, corrosion, or contamination that may occur within the enclosure or that may enter via conduit or unsealed openings.

1.4 Where an individual product standard contains requirements that are at variance with those of this standard, the requirements of the individual product standard take precedence.

2 Units of Measurement

2.1 The values given in SI (metric) units shall be normative. Any other values given shall be for informational purposes only.

3 Components

3.1 Except as indicated in Clause 3.2, a component of a product covered by this standard shall comply with the requirements for that component. See Annex A for a list of standards covering components generally used in the products covered by this standard. A component shall comply with the ANCE, CSA Group, or UL standards as appropriate for the country where the product is to be used.

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.