



UL 1696

STANDARD FOR SAFETY

Mechanical Protection Tubing (MPT) and Fittings

UL Standard for Safety for Mechanical Protection Tubing (MPT) and Fittings, UL 1696

Fourth Edition, Dated April 11, 2025

Summary of Topics

This new Fourth edition of ANSI/UL 1696, dated April 11, 2025, incorporates editorial changes including renumbering and reformatting to align with current style.

The new requirements are substantially in accordance with Proposal(s) on this subject dated October 4, 2024 and January 17, 2025.

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Association of Standardization and Certification
NMX-J-855-ANCE-2025
Second Edition



CSA Group
CSA C22.2 No. 227.3:25
Sixth Edition



ULSE Inc.
UL 1696
Fourth Edition

Standard for Mechanical Protection Tubing (MPT) and Fittings

April 11, 2025

Commitment for Amendments

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This ANSI/UL Standard for Safety consists of the Fourth Edition. The most recent designation of ANSI/UL 1696 as an American National Standard (ANSI) occurred on April 11, 2025. 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 ULSE standard for Mechanical Protection Tubing (MPT) and Fittings. It is the second edition of NMX-J-855-ANCE, the sixth edition of CSA C22.2 No. 227.3, and the fourth edition of UL 1696. This edition of CSA C22.2 No. 227.3 supersedes the previous edition of CSA C22.2 No. 227.3 published on March 31, 2021. This edition of UL 1696 supersedes the third edition of UL 1696 published on March 31, 2021.

This harmonized standard was prepared by the Association of Standardization and Certification, (ANCE), CSA Group and ULSE. The efforts and support of the conduit manufacturing industry and the Technical Harmonization Committee 23A, NMPT Working Group, of the Council on the Harmonization of Electrotechnical Standards for 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 23 Electrical Accessories from the Comité de Normalización de la Asociación de Normalización y Certificación, A.C., CONANCE, with the collaboration of the mechanical protection tubing manufacturers and users.

This Standard was reviewed by the CSA Integrated Committee on Nonmetallic Conduit, Tubing, and Fittings, 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 ULSE.

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 determined the safe use of nonmetallic mechanical protection tubing and fittings is dependent on the design and performance of the raceway and cable systems with which they are intended to be installed. Significant investigation is required to assess safety and system compatibility issues that may lead to harmonization of traditional North American nonmetallic tubing and fittings with those presently addressed in the known IEC standards. The THC agreed such future

investigation might be facilitated by completion of harmonization of the North American standards for mechanical protection tubing and fittings.

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.

Mechanical Protection Tubing (MPT) and Fittings

1 Scope

1.1 This Standard applies to nonmetallic or composite mechanical protection tubing (MPT), and nonmetallic, composite or metal fittings, and clamps used for the support, routing and mechanical protection of conductors, wires, and cables. The MPT, fittings, and clamps are intended to be used to interconnect separate component assemblies or consoles of electrical devices, such as robotics, medical or X-ray equipment. The mechanical protection afforded the internal wiring contained within the tubing is considered equivalent to the protection provided by a type SJT flexible cord. Mechanical protection tubing (MPT) may be submitted without fittings, clamps, etc.

1.2 The MPT, fittings, and clamps covered by this Standard are not intended for use as a wiring method in accordance with NFPA 70, National Electrical Code (NEC), CSA C22.1, Canadian Electrical Code (CE Code), Part I and NOM-001-SEDE Standard for Electrical Installations.

1.3 This Standard does not include standard trade sizes. The MPT, fittings, and clamps from different manufacturers are not interchangeable unless the combination of MPT, fittings, and clamps are determined to be in accordance with this Standard.

1.4 This Standard does not apply to tubing with slit or split wall constructions, electrical nonmetallic tubing, liquid-tight flexible non-metallic conduit, flexible metal conduit, liquid-tight flexible metal conduit, jacketed or unjacketed metallic conduit, or EMI/RFI shielding conduits.

This Standard does not apply to fittings for use with cable or conduit, liquid-tight flexible nonmetal conduit, electrical nonmetallic tubing, flexible metal conduit, liquid-tight flexible metal conduit, jacketed or unjacketed metallic conduit, or EMI/RFI shielding conduits and strain-relief of a fitting.

NOTE 1: Insulating bushings to provide strain-relief for flexible cord and single conductors are covered in the Standard for Insulating Bushings, UL 635, or the Standard for Conduit, Tubing, and Cable Fittings, CSA C22.2 No. 18.3 / UL 514B / NMX-J-017-ANCE.

NOTE 2: Flexible aluminum and steel conduit is covered in the Standard for Flexible Metal Conduit, UL 1 or Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit, CSA C22.2 No. 56.

NOTE 3: Liquid-tight flexible metal conduits are covered in the Standard for Liquid-Tight Flexible Metal Conduit, UL 360, or Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit, CSA C22.2 No. 56.

NOTE 4: Fittings for use with cable and conduit are covered in the Standard for Conduit, Tubing, and Cable Fittings, CSA C22.2 No. 18.3 / UL 514B / NMX-J-017-ANCE.

NOTE 5: Liquid-tight flexible nonmetallic conduit is covered in the Standard for Liquid-Tight Flexible Nonmetallic Conduit, CSA C22.2 No. 227.2.1 / UL 1660 / NMX-J-764-ANCE.

NOTE 6: Electrical Nonmetallic Tubing is covered in the Standard for Electrical Nonmetallic Tubing, UL 1653 / CSA C22.2 No. 227.1 / NMX-J-851-ANCE.

2 Referenced Publications

2.1 For undated references to Standards, such reference shall be considered to refer to the latest edition and all amendments published 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.