CANADIAN STANDARDS ASSOCIATION

C22.2 No. 2515-09

Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

CONTENTS

Annex B (Normative) Method to determine the halogen content of a low-halogen material using the calculation method from pH and acid gas evolution

Annex C (Informative) Rationale for threaded adapter dimensions for size 4-1/2 (114)

Preface

This is the common CSA and UL standard for aboveground reinforced thermosetting resin conduit (RTRC) and fittings. It is the first edition of CSA C22.2 No. 2515, and the first edition of UL 2515. Previously, requirements for aboveground RTRC were found in the common CSA and UL Standard for Reinforced Thermosetting Resin Conduit and Fittings. This edition of CSA C22.2 No. 2515 supersedes the fourth edition of CSA C22.2 No. 211.3-96 last revised on June 1, 1997, for products covered in this standard, as indicated in the scope of this standard. This edition of UL 2515 supersedes the third edition of UL 1684 last revised on August 11, 2004.

This common standard was prepared by the Canadian Standards Association (CSA) and Underwriters Laboratories Inc. (UL). The efforts and support of the conduit manufacturing industry, and the Technical Harmonization Subcommittee for Conduit and Tubing, of the Council of 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.

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 approved by the American National Standards Institute 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 an IEC format, but is not based on, nor is it to be considered an IEC standard. This standard is published as an equivalent standard for CSA and UL. An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical deviations are allowed for codes and governmental regulations and 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 to be word for word except for editorial changes.

Reasons for differences from IEC

The Technical Harmonization Subcommittee identified several IEC standards that address electrical conduit and tubing included in the scope of this standard. The IEC standards for electrical conduit and tubing are recognized as being generally system-specific, containing the requirements for the relevant conduits and cables and associated fittings in several discrete IEC standards.

The THSC determined the safe use of electrical conduit and tubing is dependent on the design and performance of the conduit and tubing 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 electrical conduit and tubing and associated fittings with those presently addressed in the known IEC standards. The THSC agreed such future investigation might be facilitated by completion of harmonization of the North American standards for electrical conduit and tubing and their 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.

CSA effective date

The effective date for CSA International will be announced through CSA Informs or a CSA Certification Notice.

UL effective date

As of November 16, 2011 all products Listed or Recognized by UL must comply with the requirements in this standard.

New product submittals to UL may be evaluated under the new requirements in this standard or, if requested in writing, evaluated under presently effective requirements only. The presently effective requirements are contained in the third edition of the Standard for Reinforced Thermosetting Resin Conduit and Fittings, UL 1684.

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

Aboveground Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

1 Scope

1.1 This Standard specifies the requirements for low-halogen aboveground (Type AG) reinforced thermosetting resin conduit (RTRC) and fittings for installation and use in accordance with CSA C22.1, Canadian Electrical Code (CEC), Part I, and NFPA 70, National Electrical Code (NEC), in non-hazardous locations.

1.2 The products specified in this Standard are intended for use at -40°C (-40°F) to 110 °C (230°F). The products are for use above ground in exposed and concealed locations. The products are also suitable for use below ground by direct burial or by encasement in concrete.

1.3 Type AG conduit has not been evaluated for directional boring applications.

1.4 This Standard covers ID (dimensions based on inside diameters) and IPS (dimensions based on outside diameters of iron pipe sizes) conduit and fittings. Trade sizes (metric designators) are 1/2 (16) to 6 (155).

Note: The values in parenthesis are metric size designations of conduits and fittings and do not necessarily reflect metric trade sizes.

1.5 ID and IPS conduit are designated as SW (Standard Wall) or HW (Heavy Wall), which refer to specific wall thicknesses.

1.6 Fittings specified in this Standard include, but are not limited to, straight couplings, 5° angle couplings, adapters, and elbows with plain ends or integral belled ends at one or both ends, expansion joints, and conduit bodies.

Note: In Canada, conduit bodies are not evaluated as outlet boxes – they are fittings. Requirements in this standard for conduit bodies intended for use as outlet boxes do not apply in Canada. In the United States, a conduit body may be used as an outlet box for the splicing of conductors.

2 Definitions

2.1 The following definitions apply in this standard:

2.2 Conduit body – a conduit body is a separate portion of a conduit system that provides access through a removable cover(s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system.

2.3 Integral belled end – a belled end installed at the factory, either integrally wound or a permanently attached coupling.

2.4 Low-halogen – a material having not more than 0.2% by weight of total halogen content.

2.5 Type AG – conduit and associated fittings that have been evaluated for use in exposed or concealed locations and/or for direct burial with or without being encased in concrete.

Note: For other definitions, refer to NEC and/or CEC.