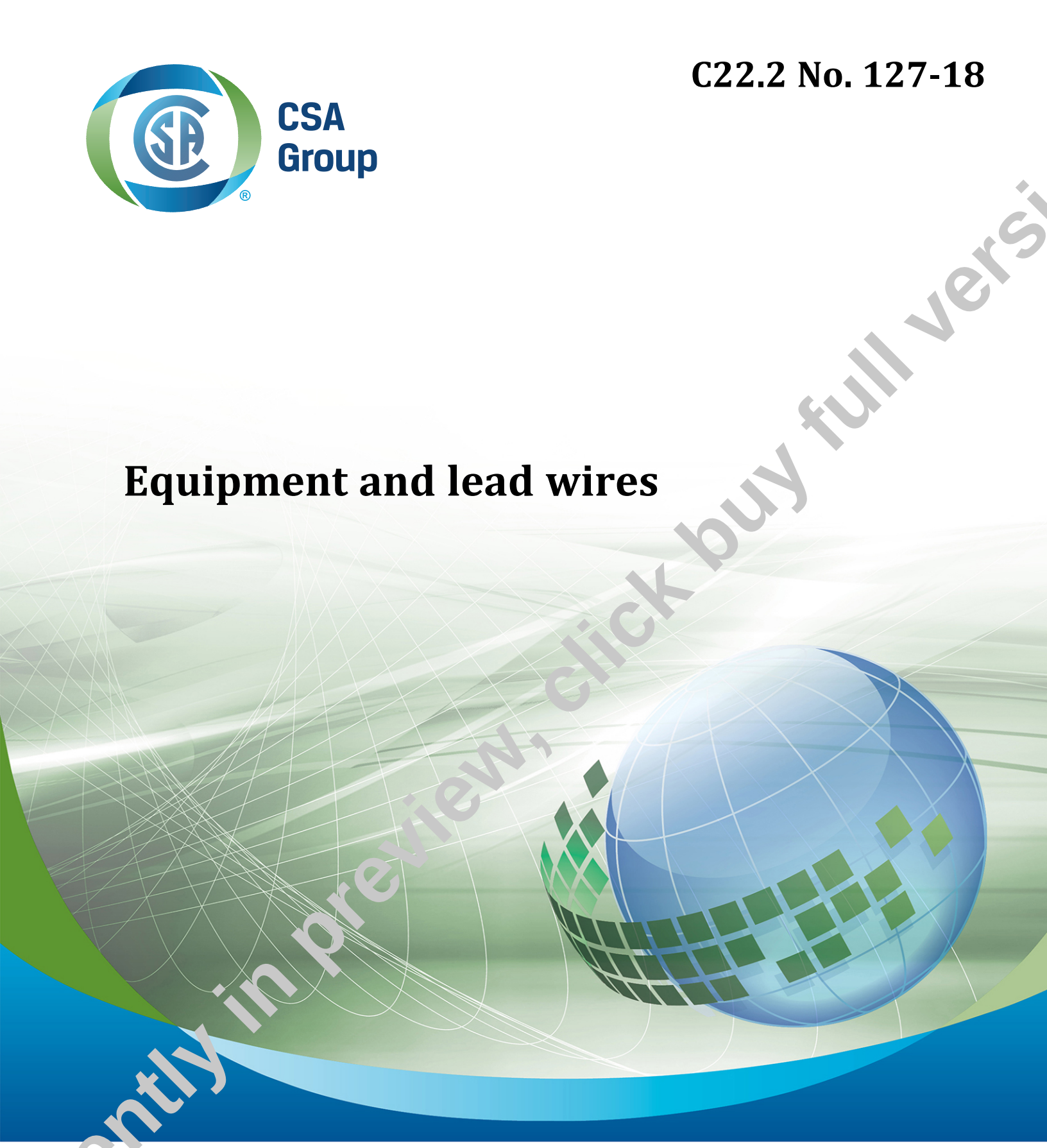
CSA Group

C22.2 No. 127-18

Equipment and lead wires



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Equipment and lead wires

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Preface

This is the ninth edition of CSA C22.2 No. 127, *Equipment and lead wires.* It is one of a series of Standards issued by CSA Group under *Part II* of the *Canadian Electrical Code*. It supersedes the previous editions, published in 2015, 2009, 1999, 1995, 1988, 1981, 1966, and 1964.

The major changes to this edition include the following:

a) fibrous nonmetallic stranding has been permitted in this Standard (see Clause 5.1.8);
b) TXF-S and TXFW-S have been added;
c) an additional test for breaking strength has been added (for TXF-S and TXFW-S); and
d) the terms "grounded" and "bonded" have changed throughout this Standard for consistency with the definitions in the *Canadian Electrical Code, Part I*.

For general information on the Standards of the *Canadian Electrical Code, Part II,* see the preface to CAN/CSA-C22.2 No. 0, *General Requirements — Canadian Electrical Code, Part II.*

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Integrated Committee on Flexible Cords/Equipment and Appliance Wires and Cables, under the jurisdiction of the Technical Committee on Wiring Products and the Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the Technical Committee.

Interpretations: The Strategic Steering Committee on Requirements for Electrical Safety has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA's procedures for interpretation shall be followed to determine the intended safety principle".

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *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.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to* ***inquiries@csagroup.org*** *and include "Request for interpretation" in the subject line:*
   a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

   Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at* ***standardsactivities.csa.ca****.*
5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to* ***inquiries@csagroup.org*** *and include "Proposal for change" in the subject line:*
   a) *Standard designation (number);*

b) *relevant clause, table, and/or figure number;*
c) *wording of the proposed change; and*
d) *rationale for the change.*

C22.2 No. 127-18
Equipment and lead wires

1 Scope

1.1
This Standard applies to insulated conductors intended for internal wiring of electrical equipment, for leads of transformers, motors, etc., and for luminous-tube signs and ignition systems, to be installed in accordance with the *Canadian Electrical Code, Part I.*

1.2
Constructions to which this Standard applies are shown in Tables 1 and 2. The Tables are not a complete summary of the construction details, but all of the items shown therein are requirements or limitations.

1.3
The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

1.4
In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications
This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

CSA Group

C22.1-15
Canadian Electrical Code, Part I

CAN/CSA-C22.2 No. 0-10 (R2015)
General Requirements — Canadian Electrical Code, Part II

C22.2 No. 0.3-09 (R2014)
Test methods for electrical wires and cables

C22.2 No. 51-14
Armoured cables

C22.2 No. 75-17
Thermoplastic-insulated wires and cables

C22.2 No. 2556-15
Wire and cable test methods

ASTM (American Society for Testing and Materials)

B3-2013
Standard Specification for Soft or Annealed Copper Wire

B33-2010 (R2014)
Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes

B298-2012
Standard Specification for Silver-Coated Soft or Annealed Copper Wire

B355-2011
Standard Specification for Nickel-Coated Soft or Annealed Copper Wire

3 Definitions

The following definitions shall apply in this Standard:

Covering — any material within a cable construction used to cover a component or an assembly of components. This Standard applies to the following coverings:

Insulation covering — a non-metallic covering applied directly over the conductor insulation.
Note: *Examples include glass or polyester fibre braids and extruded PVC or nylon. See Clause 5.4.*

Jacket — a homogenous non-metallic polymeric extruded material typically used as a final covering on single conductor assemblies.
Note: *The applicable classes are given in Table 31.*

Overall insulating covering — a homogenous non-metallic polymeric extruded material typically used in applications where electrical and physical properties are consistent with conductor insulations.
Note: *The classes of overall insulating coverings are given in Table 3.*

Thermoplastic — an insulation, insulating covering, or jacket material that can be repeatedly softened by heating and hardened by cooling through a temperature range characteristic of the material, and that, while in the softened state, can be shaped through the application of force.

Thermoset — an insulation, insulating covering, or jacket material that, after having been cured by heat or other means, is substantially infusible and insoluble.

