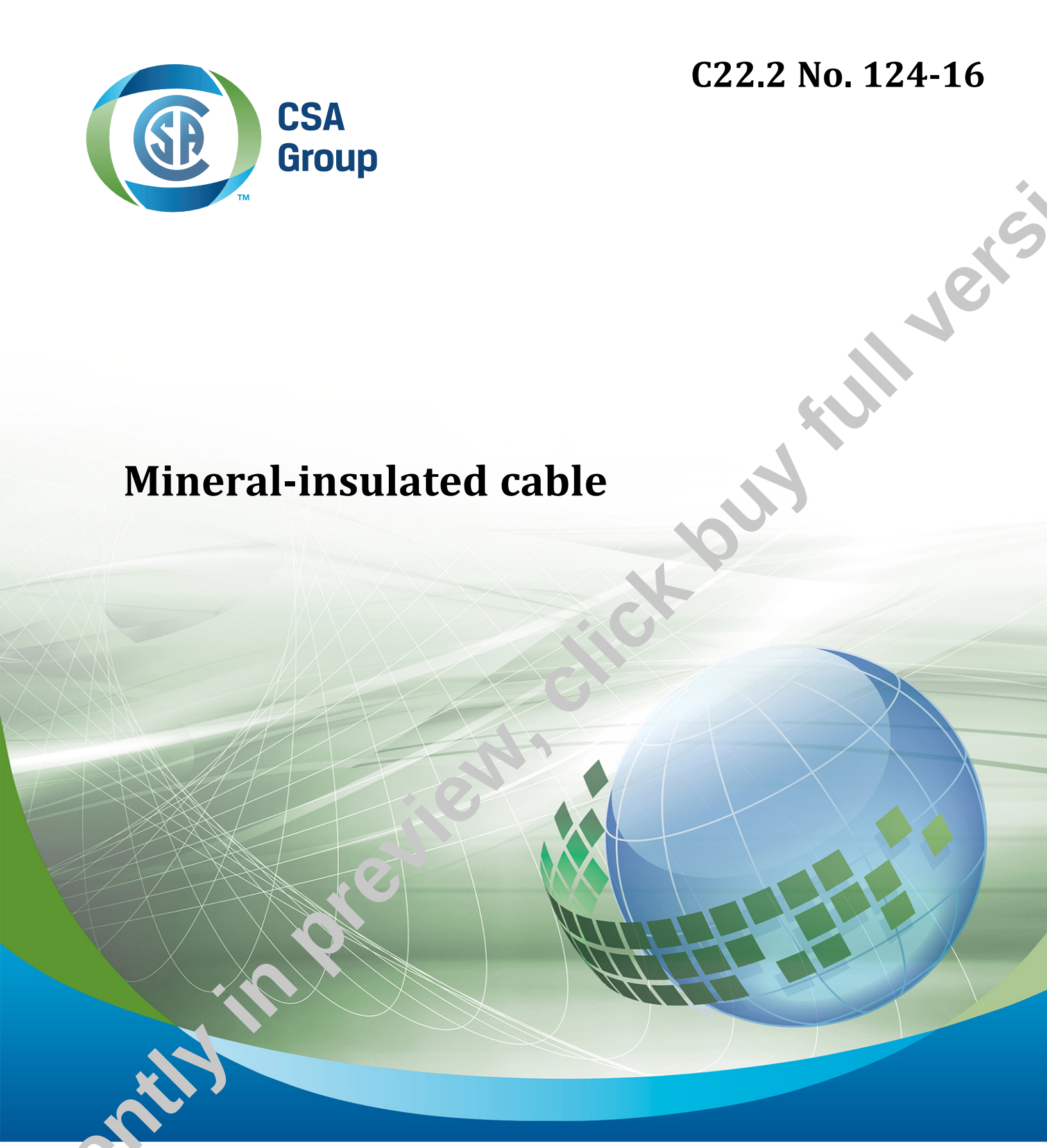
C22.2 No. 124-16

CSA Group

Mineral-insulated cable



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CSA Group

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C22.2 No. 124-16
May 2016

Title: *Mineral-insulated cable*

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C22.2 No. 124-16
Mineral-insulated cable

Published in May 2016 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

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ISBN 978-1-4883-0307-4

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Preface

This is the sixth edition of CSA C22.2 No. 124, *Mineral-insulated cable.* It supersedes the previous editions published in 2004, 1986, 1974, 1966, and 1960. This Standard is issued by CSA Group under Part II of the *Canadian Electrical Code*.

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

This new edition includes the following changes:

a) the addition of
   i) requirements for thermoset materials;
   ii) requirements for nickel alloy-clad copper and steel-clad copper conductor materials;
   iii) a durability of print test for all ink-printed cables;
   iv) an optional FT6 flame test on constructions with overall covering; and
   v) an optional weather resistance test and related marking requirements; and
b) an increase in the range of conductor sizes covered.

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 Metal Clad 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 of 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 CSA committee interpretation has not already been published, CSA Group'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 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. 124-16
Mineral-insulated cable

1 Scope

1.1
This Standard applies to mineral-insulated cables with copper, nickel/nickel alloy-clad copper, steel-clad copper, or nickel conductors, enclosed in a copper or stainless steel sheath.

1.2
The constructions covered by this Standard are intended for use in power, instrumentation, control, and fire alarm systems that are intended to be installed in ordinary locations in accordance with CSA C22.1, *Canadian Electrical Code, Part I*.

1.3
The constructions covered by this Standard are recognized for use where normal conditions are such that no part of the cable is subjected to a temperature in excess of 250 °C. When provided with an overall thermoplastic or thermoset protective covering, the use is restricted to 90 °C.

1.4
The constructions covered by this Standard are
a) **Type MI** mineral-insulated, copper-sheathed cable recognized for use on systems having a nominal voltage of 600 V or less;
b) **Type SSMI** mineral-insulated, stainless steel-sheathed cable recognized for use on systems having a nominal voltage of 600 V or less;
c) **Type LWMI** mineral-insulated, copper-sheathed cable recognized for use on systems having a nominal voltage of 600 V or less; and
d) **Type SSLWMI** mineral-insulated, stainless steel-sheathed cable recognized for use on systems having a nominal voltage of 600 V or less.

1.5
Optional requirements are provided for
a) twisted pair configurations;
b) copper or stainless steel shields;
c) overall thermoplastic or thermoset protective coverings;
d) flame test classification; and
e) fire rating.

1.6
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 (nonmandatory) 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

CAN/CSA-C22.2 No. 198.1-06 (R2015)
Extruded insulating tubing

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

ASTM International

B3-2013
Standard Specification for Soft or Annealed Copper Wire

B160-2005 (2014)
Standard Specification for Nickel Rod and Bar

B167-2011
Standard Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Seamless Pipe and Tube

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

B423-2011
Standard Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloy (UNS N08825, N08221, and N06845) Seamless Pipe and Tube

