CANADIAN STANDARDS ASSOCIATION

C22.2 No. 230-09
(reaffirmed 2014)

Tray cables

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CANADIAN STANDARDS ASSOCIATION

Update No. 1
C22.2 No. 230-09
February 2014

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Title: *Tray cables* — originally published February 2009

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages:

Revised	Clause 4
New	None
Deleted	None

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

C22.2 No. 230-09
Tray cables

1 Scope

1.1
This Standard applies to single conductor and multi-conductor constructions, without metal sheath or armour, suitable for use in cable trays and other applications when installed in accordance with the *Canadian Electrical Code, Part I*.

1.2
The test and marking requirements of this Standard are in addition to the basic requirements for cable construction that appear in other published CSA product Standards.

1.3
In CSA Standards, "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; "may" is used to express an option or that which is permissible within the limits of the standard; and "can" is used to express possibility or capability. 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

2.1
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 (Canadian Standards Association)
C22.1-09
Canadian Electrical Code, Part I

CAN/CSA-C22.2 No. 0-M91 (R2006)
General Requirements — Canadian Electrical Code, Part II

C22.2 No. 30-M1986 (R2007)
Explosion-proof enclosures for use in Class I hazardous locations

CAN/CSA-C22.2 No. 38-05
Thermoset-insulated wires and cables

C22.2 No. 75-08
Thermoplastic-insulated wires and cables

C22.2 No. 96-09
Portable power cables

CAN/CSA-C22.2 No. 239-97 (R2006)
Control and instrumentation cables

CAN/CSA-C22.2 No. 2556-07
Wire and cable test methods

C68.10-08
Shielded power cable for commercial and industrial applications, 5–46 kV

3 General requirements

General requirements applicable to this Standard are given in CAN/CSA-C22.2 No. 0.

Δ 4 Construction

4.1

Constructions include types specified in the following Standards:
(a) CAN/CSA-C22.2 No. 38;
(b) CSA C22.2 No. 75;
(c) CSA C22.2 No. 96;
(d) CAN/CSA-C22.2 No. 239; and
(e) CSA C68.10.

4.2

Single conductor constructions shall not be smaller than 1/0 AWG.

5 Tests

5.1 General

5.1.1 Tests (mandatory)

The following tests shall be conducted on all cables:
(a) flame (see Clause 5.2);
(b) abnormal low temperature — impact at –25 °C or –40 °C (see Clause 5.3);
Note: *The abnormal low temperature — impact test at* –40 °C *is only required where the product marking is "*–40 °C*" or "*MINUS 40 °C*".*
(c) mechanical damage — impact (see Clause 5.4);
(d) mechanical damage — crushing (see Clause 5.5); and
(e) weather resistance (see Clause 5.6).

5.1.2 Tests (optional)

The following tests are optional and require a special marking as shown in Clause 6:
(a) abnormal low temperature — impact at –40 °C (Clause 5.3); and
(b) oil resistance (Clause 5.7).

5.2 Flame

Finished cables shall not have a char length greater than 1.5 m when specimens are tested in accordance with the vertical tray flame test (Method 2, FT4) of CAN/CSA-C22.2 No. 2556.

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Preface

This is the second edition of CSA C22.2 No. 230, *Tray cables*, one of a series of Standards issued by the Canadian Standards Association under the *Canadian Electrical Code, Part II*. It supersedes the previous edition published in 1988.

This Standard specifies requirements for single conductor and multi-conductor constructions, without metal sheath or armour, suitable for use in cable trays and other applications when installed in accordance with the *Canadian Electrical Code, Part I*.

This Standard was prepared by the Subcommittee on Fixed Installation 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.

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

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".

February 2009

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 publication 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 publication.*

(4) *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*

(5) *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.*

Requests for interpretation should

(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) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are published in CSA's periodical* Info Update*, which is available on the CSA Web site at www.csa.ca.*

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