CSA GROUP
GROUPE CSA

CSA E62660-2:15
(IEC 62660-2:2010, MOD)
National Standard of Canada
Norme nationale du Canada
(reaffirmed/confirmée en 2020)

CSA E62660-2:15
Secondary lithium-ion cells for the propulsion of electric road vehicles — Part 2: Reliability and abuse testing
(IEC 62660-2:2010, MOD)

CSA E62660-2:15
Éléments d'accumulateurs lithium-ion pour la propulsion des véhicules routiers électriques — Partie 2 : Essais de fiabilité et de traitement abusif
(IEC 62660-2:2010, MOD)

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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 to judge its suitability for their particular purpose.

National Standard of Canada

CSA E62660-2:15

Secondary lithium-ion cells for the propulsion of electric road vehicles — Part 2: Reliability and abuse testing

(IEC 62660-2:2010, MOD)

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Secondary lithium-ion cells for the propulsion of electric road vehicles — Part 2: Reliability and abuse testing
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CSA Preface

This is the first edition of CAN/CSA-E62660-2, *Secondary lithium-ion cells for the propulsion of electric road vehicles — Part 2: Reliability and abuse testing*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Standard 62660-2 (first edition, 2010-12). It is one in a series of Standards issued by CSA Group under Part I of the *Canadian Electrical Code*. For brevity, this Standard will be referred to as "CAN/CSA-E62660-2" throughout.

This Standard is intended to be used in conjunction with CAN/CSA- E62660-1, *Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 1: Performance testing* (adopted IEC 62660-1:2010, with Canadian deviations).

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

This Standard was reviewed for Canadian adoption by the CSA Technical Committee on International Standards, under the jurisdiction of the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the 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.

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 Group's procedures for interpretation shall be followed to determine the intended safety principle."

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This Standard is subject to review five years from the date of publication, and 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.*

Canadian deviations

1 Scope

[Add the following]

This Standard covers the above-noted products that are utilized for connection to the Electric Vehicle Supply equipment (EVSE) intended to be installed or used in accordance with CSA C22.1, *Canadian Electrical Code, Part I*.

2 Normative references

[Add the following]

Any reference to International Standards that are adopted as National Standards of Canada subsequent to the publication of CAN/CSA-E62660-2 shall be replaced by the relevant National Standard of Canada.

Where reference is made to CSA Group publications, such reference shall be considered to refer to the latest edition and all amendments published to that edition. This Standard refers to the following publications, and the years shown indicate the latest editions available at the time of printing:

CSA Group

C22.1-15
Canadian Electrical Code, Part I

CAN/CSA-C22.2 No. 0-10
General requirements — Canadian Electrical Code, Part II

[Add the following clause]

3A General requirements

General requirements applicable to these products are provided in CAN/CSA-C22.2 No. 0.

IEC 62660-2

Edition 1.0 2010-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 2: Reliability and abuse testing

Éléments d'accumulateurs lithium-ion pour la propulsion des véhicules routiers électriques –
Partie 2: Essais de fiabilité et de traitement abusif

IEC 62660-2:2010

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IEC 62660-2

Edition 1.0 2010-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 2: Reliability and abuse testing

Éléments d'accumulateurs lithium-ion pour la propulsion des véhicules routiers électriques – Partie 2: Essais de fiabilité et de traitement abusif

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
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ICS 29.220.20, 43.120

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SECONDARY LITHIUM-ION CELLS FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –

Part 2: Reliability and abuse testing

FOREWORD

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International Standard IEC 62660-2 has been prepared by IEC technical committee 21: Secondary cells and batteries.

The text of this standard is based on the following documents:

FDIS	Report on voting
21/727/FDIS	21/731/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all the parts in the IEC 62660 series, published under the general title *Secondary lithium-ion cells for the propulsion of electric road vehicles*, can be found on the IEC website.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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INTRODUCTION

The commercialisation of electric road vehicles including battery, hybrid and plug-in hybrid electric vehicles has been accelerated in the global market, responding to the global concerns on CO_2 reduction and energy security. This, in turn, has led to rapidly increasing demand for high-power and high-energy density traction batteries. Lithium-ion batteries are estimated to be one of the most promising secondary batteries for the propulsion of electric vehicles. In the light of rapidly diffusing hybrid electric vehicles and emerging battery and plug-in hybrid electric vehicles, a standard method for testing reliability and abuse requirements of lithium-ion batteries is indispensable for securing a basic level of safety and obtaining essential data for the design of vehicle systems and battery packs.

This standard is to specify reliability and abuse testing for automobile traction lithium-ion cells that basically differ from the other cells including those for portable and stationary applications specified by the other IEC standards. For automobile application, it is important to note the usage specificity; i.e. the designing diversity of automobile battery packs and systems, and specific requirements for cells and batteries corresponding to each of such designs. Based on these facts, the purpose of this standard is to provide a basic test methodology with general versatility, which serves a function in common primary testing of lithium ion cells to be used in a variety of battery systems. For the requirements for cells differ depending on the system designs of battery pack or vehicle, and should be evaluated by the users, this standard does not provide any pass-fail criteria for the tests, but specifies a standard classification of descriptions for test results.

This standard is associated with ISO 12405-1-and ISO 12405-2[1].

IEC 62660-1 specifies the performance testing of lithium-ion cells for electric vehicle application.

[1] Under consideration.

SECONDARY LITHIUM-ION CELLS FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –

Part 2: Reliability and abuse testing

1 Scope

This part of IEC 62660 specifies test procedures to observe the reliability and abuse behaviour of secondary lithium-ion cells used for propulsion of electric vehicles including battery electric vehicles (BEV) and hybrid electric vehicles (HEV).

The objective of this standard is to specify the standard test procedures and conditions for basic characteristics of lithium-ion cells for use in propulsion of battery and hybrid electric vehicles. The tests are indispensable for obtaining essential data on reliability and abuse behaviour of lithium-ion cells for use in various designs of battery systems and battery packs.

This standard provides standard classification of description of test results to be used for the design of battery systems or battery packs.

NOTE 1 The reliability and abuse tests for the electrically connected lithium-ion cells may be performed with reference to this standard.

NOTE 2 The test specification for lithium-ion battery packs and systems is defined in ISO 12405-1 and ISO 12405-2 (under consideration).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-482, *International Electrotechnical Vocabulary – Part 482: Primary and secondary cells and batteries*

IEC 60068-2-64, *Environmental testing – Part 2-64: Tests – Test Fh: Vibration, broadband random and guidance*

IEC 61434, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Guide to the designation of current in alkaline secondary cell and battery standards*

ISO 16750-3, *Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 3: Mechanical loads*

ISO 16750-4, *Road vehicles – Environmental conditions and testing for electrical and electronic equipment – Part 4: Climatic loads*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482 and the following apply.