

Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 3: Safety requirements

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Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 3: Safety requirements (IEC 62660-3:2022)

Éléments d'accumulateurs lithium-ion pour la propulsion
des véhicules routiers électriques - Partie 3: Exigences de
sécurité
(IEC 62660-3:2022)

Lithium-Ionen-Sekundärzellen für den Antrieb von
Elektrostraßenfahrzeugen - Teil 3:
Sicherheitsanforderungen
(IEC 62660-3:2022)

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European foreword

The text of document 21/1133/FDIS, future edition 2 of IEC 62660-3, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62660-3:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-01-05
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61434	NOTE	Harmonized as EN 61434
IEC 62133-2	NOTE	Harmonized as EN 62133-2
IEC 62660-1	NOTE	Harmonized as EN IEC 62660-1
ISO 18243	NOTE	Harmonized as EN ISO 18243

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Secondary lithium-ion cells for the propulsion of electric road vehicles –
Part 3: Safety requirements**

**Éléments d'accumulateurs lithium-ion pour la propulsion des véhicules routiers
électriques –
Partie 3: Exigences de sécurité**



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Secondary lithium-ion cells for the propulsion of electric road vehicles –
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**Éléments d'accumulateurs lithium-ion pour la propulsion des véhicules routiers
électriques –
Partie 3: Exigences de sécurité**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 3: Safety requirements

FOREWORD

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IEC 62660-3 has been prepared by IEC technical committee 21: Secondary cells and batteries. It is an International Standard.

This second edition cancels and replaces the first edition published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The new method for the internal short-circuit test has been added in 6.4.4.2.2 and Annex C, as an alternative option to the test in 6.4.4.2.1.
- b) The vibration test has been deleted.
- c) The test conditions of overcharge (6.4.2.2) have been partially revised.

The text of this International Standard is based on the following documents:

Draft	Report on voting
21/1133/FDIS	21/1137/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all 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.

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

Part 3: Safety requirements

1 Scope

This part of IEC 62660 specifies test procedures and acceptance criteria for safety performance of secondary lithium-ion cells and cell blocks used for propulsion of electric vehicles (EV) including battery electric vehicles (BEV) and hybrid electric vehicles (HEV).

This document determines the basic safety performance of cells used in a battery pack and system under intended use and reasonably foreseeable misuse or incident, during the normal operation of the EV. The safety requirements of the cell in this document are based on the premise that the cells are properly used in a battery pack and system within the limits for voltage, current and temperature as specified by the cell manufacturer (cell operating region).

The evaluation of the safety of cells during transport and storage is not covered by this document.

NOTE 1 The safety performance requirements for lithium-ion battery packs and systems are defined in ISO 6469-1. The specifications and safety requirements for lithium-ion battery packs and systems of electrically propelled mopeds and motorcycles are defined in ISO 18243. IEC 62619 covers the safety requirements for the lithium-ion cells and batteries for industrial applications, including, for example, forklift trucks, golf carts, and automated guided vehicles.

NOTE 2 Lithium cells, modules, battery packs, and battery systems are regulated by International Air Transport Association (IATA) and International Maritime Organization (IMO) for air and sea transport, and, regionally, by other authorities, mainly for land transport. Refer to IEC 62281 for additional information.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62619:—¹, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications*

IEC 62660-2:2018, *Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 2: Reliability and abuse testing*

ISO/TR 8713, *Electrically propelled road vehicles – Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TR 8713 and the following apply.

¹ Second edition under preparation. Stage at the time of publication: IEC FDIS 62619:2021.