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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 62660-3:2016 sisaldab Euroopa standardi EN 62660-3:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 62660-3:2016 consists of the English text of the European standard EN 62660-3:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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ICS 29.220.20, 43.120

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English Version

Secondary lithium-ion cells for the propulsion of electric road
vehicles - Part 3: Safety requirements
(IEC 62660-3:2016)

Éléments d'accumulateurs lithium-ion pour la propulsion
des véhicules routiers électriques - Partie 3: Exigences de
sécurité
(IEC 62660-3:2016)

Lithium-Ionen-Sekundärzellen für den Antrieb von
Elektrostraßenfahrzeugen -
Teil 3: Sicherheitsanforderungen
(IEC 62660-3:2016)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 21/890/FDIS, future edition 1 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 62660-3:2016.

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) 2017-07-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-10-03

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Endorsement notice

The text of the International Standard IEC 62660-3:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62133	NOTE	Harmonized as EN 62133.
IEC 62660-1	NOTE	Harmonized as EN 62660-1.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-482	-	International Electrotechnical Vocabulary (IEV) - Part 482: Primary and secondary cells and batteries	-	-
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	EN 61434	-
IEC 62619	-	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	2010	Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 2: Reliability and abuse testing	EN 62660-2	2011

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INTRODUCTION

The electric road vehicles (EV) including hybrid and plug-in hybrid electric vehicles are beginning to diffuse in the global market with backing from global concerns on CO₂ reduction and energy, recent advances in technology and cost reduction. This has led to a rapidly increasing demand for high-power and high-energy density traction batteries represented by lithium-ion batteries.

For securing a basic level of quality of lithium-ion batteries for automotive applications, relevant international standards, i.e. IEC 62660-1, IEC 62660-2, ISO 12405-1 and ISO 12405-2, have been published. These standards specify the performance, reliability and abuse testing of lithium-ion battery cells, packs and systems for EV applications. Further, in the light of increasing concerns on the safety of lithium-ion batteries and demand for a referenceable international standard, safety requirements for lithium-ion battery packs and systems are defined in ISO 12405-3. Regulations, such as UN ECE R100, are also being revised that include acceptance criteria for rechargeable energy storage systems of EVs.

It is essential to specify the safety criteria at cell level in this standard, in order to secure the basic safety level of cells which differ in performance and design, and are applied to a variety of types of packs and systems. For automobile applications, it is important to note the design 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 level of safety test methodology and criteria with general versatility, which serves a function in common primary testing of lithium-ion cells to be used in a variety of battery systems. Specific requirements for the safety of cells differ depending on the system designs of battery packs or vehicles, and should be evaluated by the users. Final pass-fail criteria of cells are to be based on the agreement between the cell manufacturers and the customers.