



BSI Standards Publication

Secondary cells and batteries containing alkaline or other non-acid electrolytes — Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications

Part 2: Lithium systems (IEC 62133-2:2017)

This is a preview of "BS EN 62133-2:2017". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN 62133-2:2017. It is identical to IEC 62133-2:2017. Together with BS EN 62133-1:2017, it supersedes BS EN 62133:2013, which will be withdrawn on 14 March 2020.

The UK participation in its preparation was entrusted to Technical Committee PEL/21/1, Secondary cells and batteries containing alkaline and other non-acidic electrolytes.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Date	Text affected
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English Version

**Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems
(IEC 62133-2:2017)**

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Exigences de sécurité pour les accumulateurs portables étanches, et pour les batteries qui en sont constituées, destinés à l'utilisation dans des applications portables - Partie 2: Systèmes au lithium
(IEC 62133-2:2017)

Sekundärzellen und -batterien mit alkalischen oder anderen nichtsäurehaltigen Elektrolyten - Sicherheitsanforderungen für tragbare gasdichte Akkumulatoren und daraus hergestellte Batterien für die Verwendung in tragbaren Geräten - Teil 2: Lithiumsysteme
(IEC 62133-2:2017)

This European Standard was approved by CENELEC on 2017-03-14. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

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European foreword

The text of document 21A/620/FDIS, future edition 1 of IEC 62133-2, prepared by SC 21A "Secondary cells and batteries containing alkaline or other non-acid electrolytes", of IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62133-2:2017.

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) 2017-12-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-03-14

This document supersedes EN 62133:2013 (partially).

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Endorsement notice

The text of the International Standard IEC 62133-2:2017 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 60051	NOTE	Harmonized in EN 60051 series.
IEC 60664	NOTE	Harmonized in EN 60664 series.
IEC 61434	NOTE	Harmonized as EN 61434.
IEC 62281	NOTE	Harmonized as EN 62281.

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(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	2004	International Electrotechnical Vocabulary (IEV) - Part 482: Primary and secondary cells and batteries	-	-
IEC 61960	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications	EN 61960	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SAFETY REQUIREMENTS FOR PORTABLE SEALED SECONDARY CELLS, AND FOR BATTERIES MADE FROM THEM, FOR USE IN PORTABLE APPLICATIONS –

Part 2: Lithium systems

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62133-2 has been prepared by subcommittee 21A: Secondary cells and batteries containing alkaline or other non-acid electrolytes, of IEC technical committee 21: Secondary cells and batteries.

This first edition cancels and replaces the second edition of IEC 62133 published in 2012. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 62133:2012:

- separation of nickel systems into a separate Part 1;
- inclusion of coin cell requirements;

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- update of assembly of cells into batteries (5.6);
- mechanical tests [vibration, shock] (7.3.8.1, 7.3.8.2);
- insertion of IEC TR 62914 within the Bibliography.

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

FDIS	Report on voting
21A/620/FDIS	21A/628/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.

The following different practices of a less permanent nature exist in the countries indicated below.

7.3.9: Design evaluation – Forced internal short-circuit test only applies to Korea, Japan, Switzerland and France.

A list of all parts of the IEC 62133 series, published under the general title *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SAFETY REQUIREMENTS FOR PORTABLE SEALED SECONDARY CELLS, AND FOR BATTERIES MADE FROM THEM, FOR USE IN PORTABLE APPLICATIONS –

Part 2: Lithium systems

1 Scope

This part of IEC 62133 specifies requirements and tests for the safe operation of portable sealed secondary lithium cells and batteries containing non-acid electrolyte, under intended use and reasonably foreseeable misuse.

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 60050-482:2004, *International Electrotechnical Vocabulary – Part 482: Primary and secondary cells and batteries* (available at <http://www.electropedia.org>)

IEC 61960, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482, ISO/IEC Guide 51 and the following apply.

3.1

safety

freedom from unacceptable risk

3.2

risk

combination of the probability of occurrence of harm and the severity of that harm

3.3

harm

physical injury or damage to the health of people or damage to property or to the environment

3.4

hazard

potential source of harm