



NSAI
Standards

Irish Standard
I.S. EN 62133:2013

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 (IEC 62133:2012 (EQV))

I.S. EN 62133:2013

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD
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EUROPÄISCHE NORM

EN 62133

March 2013

ICS 29.220.30

Supersedes EN 62133:2003

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
(IEC 62133:2012)**

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
(CEI 62133:2012)

Akkumulatoren und Batterien mit
alkalischen oder anderen nicht
säurehaltigen Elektrolyten -
Sicherheitsanforderungen für tragbare
gasdichte Akkumulatoren und daraus
hergestellte Batterien für die Verwendung
in tragbaren Geräten
(IEC 62133:2012)

This European Standard was approved by CENELEC on 2013-01-10. 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.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 21A/503/FDIS, future edition 2 of IEC 62133, 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 62133:2013.

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) 2013-10-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-01-10

This document supersedes EN 62133:2003.

EN 62133:2013 includes the following significant technical changes with respect to EN 62133:2003:

- update of assembly of cells into batteries (5.5);
- addition of design recommendations for lithium system only (5.6.2);
- separation of nickel systems and lithium systems (Clause 6);
- addition of specific requirements and tests for lithium systems (Clause 8);
- addition of charging of secondary lithium-ion cells for safe use (Annex A).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62133:2012 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 series	NOTE	Harmonized in EN 60051 series.
IEC 60664 series	NOTE	Harmonized in EN 60664 series.
IEC 61434	NOTE	Harmonized as EN 61434.
IEC 62281	NOTE	Harmonized as EN 62281.

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<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 61951-1	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells - Part 1: Nickel-cadmium	EN 61951-1	-
IEC 61951-2	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Portable sealed rechargeable single cells - Part 2: Nickel-metal hydride	EN 61951-2	-
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

FOREWORD

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International Standard IEC 62133 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 second edition cancels and replaces the first edition published in 2002. It constitutes a technical revision.

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

- update of assembly of cells into batteries (5.5);
- addition of design recommendations for lithium system only (5.6.2);
- separation of nickel systems and lithium systems (Clause 6);

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- addition of specific requirements and tests for lithium systems (Clause 8);
- addition of charging of secondary lithium-ion cells for safe use (Annex A).

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

FDIS	Report on voting
21A/503/FDIS	21A/509/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 difference exists in the countries indicated below:

Subclause 8.3.9: Design evaluation – Forced internal short circuit only applies to Korea, Japan, Switzerland and France.

The committee has decided that the contents of this 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

- 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.

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

1 Scope

This International Standard specifies requirements and tests for the safe operation of portable sealed secondary cells and batteries (other than button) containing alkaline or other non-acid electrolyte, under intended use and reasonably foreseeable misuse.

2 Normative references

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.

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

IEC 61951-1, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Portable sealed rechargeable single cells – Part 1: Nickel-cadmium*

IEC 61951-2, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Portable sealed rechargeable single cells – Part 2: Nickel-metal hydride*

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 and ISO/IEC Guide 51, as well as the following apply.

3.1

safety

freedom from unacceptable risk

3.2

risk

a 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

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