

STN	Akumulátorové články a batérie obsahujúce alkalické alebo iné nie kyslé elektrolyty Bezpečnostné požiadavky na prenosné hermeticky uzavreté akumulátorové články a batérie z nich vyrobené, určené na použitie v prenosných prístrojoch Časť 1: Niklové systémy	STN EN IEC 62133-1 36 4350
------------	--	--

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 1: Nickel systems

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/26

Obsahuje: EN IEC 62133-1:2026, IEC 62133-1:2026

Oznámením tejto normy sa od 30.04.2029 ruší
STN EN 62133-1 (36 4350) zo septembra 2017

142720

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2026
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 62133-1

April 2026

ICS 29.220.30

Supersedes EN 62133-1:2017

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 1: Nickel systems
(IEC 62133-1:2026)**

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 1: Systèmes au nickel
(IEC 62133-1:2026)

Sekundärzellen und -batterien mit alkalischen oder anderen nicht säurehaltigen Elektrolyten - Sicherheitsanforderungen für tragbare gasdichte Sekundärzellen und daraus hergestellte Batterien für die Verwendung in tragbaren Geräten - Teil 1: Nickel-Systeme
(IEC 62133-1:2026)

This European Standard was approved by CENELEC on 2026-04-10. 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.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62133-1:2026 (E)**European foreword**

The text of document 21A/946/FDIS, future edition 2 of IEC 62133-1, 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 IEC 62133-1:2026.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2027-04-30 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2029-04-30 document have to be withdrawn

This document supersedes EN 62133-1:2017 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62133-1:2026 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 standard indicated:

IEC 60051 (series)	NOTE	Approved as EN IEC 60051 (series)
IEC 60664 (series)	NOTE	Approved as EN 60664 (series)
IEC 61434	NOTE	Approved as EN 61434

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where 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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-482	2004	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 - Secondary sealed cells and batteries for portable applications - Part 1: Nickel-Cadmium	EN 61951-1	-
IEC 61951-2	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 2: Nickel-metal hydride	EN 61951-2	-
ISO/IEC Guide 51	-	Safety aspects - Guidelines for their inclusion in standards	-	-



IEC 62133-1

Edition 2.0 2026-03

INTERNATIONAL STANDARD

**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 1: Nickel systems**

**THIS PUBLICATION IS COPYRIGHT PROTECTED****Copyright © 2026 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search -

webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

Warning! Make sure that you obtained this publication from an authorized distributor.

IEC 62133-1:2026 © IEC 2026

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Parameter measurement tolerances	7
5 General safety considerations	7
5.1 General.....	7
5.2 Insulation and wiring	8
5.3 Venting	8
5.4 Temperature, voltage and current management	8
5.5 Terminal contacts	8
5.6 Assembly of cells into batteries	8
5.7 Quality plan	9
6 Type test and sample size	9
7 Specific requirements and tests	10
7.1 Charging procedure for test purposes	10
7.2 Intended use	10
7.2.1 Continuous low-rate charging (cells).....	10
7.2.2 Vibration	10
7.2.3 Case stress at high ambient temperature (batteries).....	11
7.2.4 Temperature cycling	11
7.3 Reasonably foreseeable misuse.....	12
7.3.1 Incorrect installation (cells).....	12
7.3.2 External short circuit.....	12
7.3.3 Free fall	12
7.3.4 Mechanical shock (crash hazard).....	12
7.3.5 Thermal abuse (cells)	13
7.3.6 Crush (cells).....	13
7.3.7 Low pressure (cells)	13
7.3.8 Overcharge.....	14
7.3.9 Forced discharge (cells)	14
8 Information for safety.....	14
8.1 General.....	14
8.2 Small cell and battery safety information	14
9 Marking	15
9.1 Cell marking.....	15
9.2 Battery marking	15
9.3 Caution for ingestion of small cells and batteries	16
9.4 Other information	16
10 Packaging	16
Annex A (informative) Recommendations to equipment manufacturers and battery assemblers	17
Annex B (informative) Recommendations to the end-users	18
Annex C (informative) Packaging	19
Bibliography.....	20

IEC 62133-1:2026 © IEC 2026

Figure 1 – Temperature profile for 7.2.4 – Temperature cycling test.....	11
Figure 2 – Ingestion gauge	15
Table 1 – Sample size for type tests	9
Table 2 – Conditions for vibration test.....	10

IEC 62133-1:2026 © IEC 2026

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 1: Nickel 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC [had/had not] received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62133-1 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. It is an International Standard.

This second edition cancels and replaces the first edition of IEC 62133-1 published in 2017. It constitutes a technical revision.

IEC 62133-1:2026 © IEC 2026

This edition includes the following significant technical changes with respect to IEC 62133-1:2017:

- a) removal of the definition "secondary battery";
- b) removal of the definition "portable battery";
- c) "removal of the definition "portable cell";
- d) replacement of the single term "room temperature" with $20\text{ °C} \pm 5\text{ °C}$ in 7.2.3;
- e) modification of Figure 1.

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

Draft	Report on voting
21A/946/FDIS	21A/969/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/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IEC 62133-1:2026 © IEC 2026

1 Scope

This part of IEC 62133 specifies requirements and tests for the safe operation of portable sealed secondary nickel cells and batteries containing alkaline 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 (IEV) - Part 482: Primary and secondary cells and batteries*

IEC 61951-1, *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 1: Nickel-Cadmium*

IEC 61951-2, *Secondary cells and batteries containing alkaline or other non acid electrolytes - Secondary sealed cells and batteries for portable applications - Part 2: Nickel-metal hydride*

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN