SLOVENSKI STANDARD
SIST EN IEC 60086-2:2021

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Nadomešča:
SIST EN 60086-2:2016

Primarne baterije - 2. del: Specifikacije fizikalnih in električnih veličin (IEC 60086-2:2021)

Primary batteries - Part 2: Physical and electrical specifications (IEC 60086-2:2021)

Primärbatterien - Teil 2: Physikalische und elektrische Spezifikationen (IEC 60086-2:2021)

Piles électriques - Partie 2: Spécifications physiques et électriques (IEC 60086-2:2021)

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29.220.10 Primarni členi in baterije Primary cells and batteries

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EN IEC 60086-2

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English Version

Primary batteries - Part 2: Physical and electrical specifications (IEC 60086-2:2021)

Piles électriques - Partie 2: Spécifications physiques et électriques
(IEC 60086-2:2021)

Primärbatterien - Teil 2: Physikalische und elektrische Spezifikationen
(IEC 60086-2:2021)

This European Standard was approved by CENELEC on 2021-06-01. 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, Turkey 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

European foreword

The text of document 35/1466/FDIS, future edition 14 of IEC 60086-2, prepared by IEC/TC 35 "Primary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60086-2:2021.

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) 2022-03-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-06-01

This document supersedes EN 60086-2:2016 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.

Endorsement notice

The text of the International Standard IEC 60086-2:2021 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 60086-3	NOTE	Harmonized as EN 60086-3
IEC 60086-4	NOTE	Harmonized as EN IEC 60086-4
IEC 60086-5	NOTE	Harmonized as EN 60086-5
IEC 62281	NOTE	Harmonized as EN IEC 62281

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.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60086-1	-	Primary batteries - Part 1: General	EN IEC 60086-1	-
ISO 1101	-	Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out	EN ISO 1101	-

IEC 60086-2

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INTERNATIONAL STANDARD

Primary batteries –
Part 2: Physical and electrical specifications

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PRIMARY BATTERIES –

Part 2: Physical and electrical specifications

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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International Standard IEC 60086-2 has been prepared by IEC technical committee 35: Primary cells and batteries.

This fourteenth edition cancels and replaces the thirteenth edition published in 2015. This edition constitutes a technical revision.

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

a) clarification and distinct separation of the terms used for coin (lithium button) and button cells and batteries;
b) importation of the dimensional stability from 60086-1;
c) reordering category 1, 5 and 6 batteries by volume;
d) addition of cochlear implant tests and a new zinc air hearing aid battery type;
e) modification of PR70 hearing aid tests;
f) addition of a compliance checklist annex (Annex E);

g) modifications to the LR1/R1 tests;

h) addition of new specifications for 8LR932, CR1632, CR1225, CR2477, 6AS6P, 6AS6S, 6PS6P, 6PS6S, 6PS4P, 6PS4S, 5PR175/172, 6PR225/155, AS4, AS6, AS8, AS10, AS12, PS121/195S, PS121/195P, AS149/195, 6AS4S, AR40, 5AR40, 6AR40.

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

FDIS	Report on voting
35/1466/FDIS	35/1468/RVD

Full information on the voting for the approval of this International Standard 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 60086 series, under the general title *Primary batteries*, 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 "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

INTRODUCTION

The technical content of this part of IEC 60086 provides physical dimensions, discharge test conditions and discharge performance requirements. IEC 60086-2 complements the general information and requirements of IEC 60086-1.

This part was prepared to benefit primary battery users, device designers and battery manufacturers by furnishing the specifics of form, fit and function for individual standardized primary cells and batteries. Over the years, this part has been changed to improve its contents and may again be revised in due course in the light of comments made by national committees and experts on the basis of practical experience and changing technology.

This current revision is the result of a reformatting initiative, as well as some content changes, aimed at making this part more user-friendly, less ambiguous, and, from a cross reference basis, fully harmonized with other parts of IEC 60086.

NOTE Safety information is available in IEC 60086-4, IEC 60086-5 and IEC 62281.

PRIMARY BATTERIES –

Part 2: Physical and electrical specifications

1 Scope

This part of IEC 60086 is applicable to primary batteries which are based on standardised electrochemical systems.

It specifies

– the physical dimensions,

– the discharge test conditions and discharge performance requirements.

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 60086-1, *Primary batteries – Part 1: General*

ISO 1101, *Geometrical product specifications (GPS) – Geometrical tolerancing – Tolerances of form, orientation, location and run-out*

3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions given in IEC 60086-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Terms and definitions

3.1.1
application test
simulation of the actual use of a battery in a specific application

3.1.2
button cell or battery
small round cell or battery where the overall height is less than the diameter, containing aqueous electrolyte

Note 1 to entry: See coin (cell or battery), lithium button (cell or battery).

3.1.3
closed-circuit voltage
CCV
voltage across the terminals of a battery when it is on discharge

3.1.4
coin <cell or battery>
lithium button <cell or battery>
small round cell or battery where the overall height is less than the diameter, containing non-aqueous electrolyte**.**

Note 1 to entry: The nominal voltage of lithium batteries is typically greater than 2 V.

Note 2 to entry: See button cell or battery.

3.1.5
end-point voltage
EV
specified voltage of a battery at which the battery discharge is terminated

[SOURCE: IEC 60050-482:2004, 482-03-30]

3.1.6
minimum average duration
MAD
minimum average time on discharge which is met by a sample of batteries

Note 1 to entry: The discharge test is carried out according to the specified methods or standards and designed to show conformity with the standard applicable to the battery types.

3.1.7
nominal voltage (of a primary battery)
U_n
suitable approximate value of the voltage used to designate or identify a cell, a battery or an electrochemical system

[SOURCE: IEC 60050-482:2004, 482-03-31, modified – addition of "(of a primary battery)" and symbol U_n.]

3.1.8
open-circuit voltage
OCV
voltage across the terminals of a cell or battery when it is off discharge

3.1.9
primary (cell or battery)
cell or battery that is not designed to be electrically recharged

3.1.10
round (cell or battery)
cell or battery with circular cross section

3.1.11
service output (of a primary battery)
service life, or capacity, or energy output of a battery under specified conditions of discharge