SLOVENSKI STANDARD
oSIST prEN IEC 60086-2-2:2024

01-november-2024

Primarne baterije - 2-2. del: Fizikalne in električne značilnosti (specifikacije) za litijeve baterije

Primary batteries - Part 2-2: Physical and electrical specifications of lithium batteries

Piles électriques - Partie 2-2: Spécifications physiques et électriques des piles au lithium

Ta slovenski standard je istoveten z: **prEN IEC 60086-2-2:2024**

ICS:

29.220.10	Primarni členi in baterije	Primary cells and batteries

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35/1551/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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DATE OF CIRCULATION: **2024-09-06**	CLOSING DATE FOR VOTING: **2024-11-29**
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IEC TC 35 : PRIMARY CELLS AND BATTERIES	
SECRETARIAT: Japan	SECRETARY: Mr Takao Uyama
OF INTEREST TO THE FOLLOWING COMMITTEES: SC 3C,TC 21,SC 21A,TC 61,TC 108	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED:	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

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Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).

TITLE:

Primary batteries - Part 2-2: Physical and electrical specifications of lithium batteries

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PRIMARY BATTERIES –

Part 2-2: Physical and electrical specifications of lithium batteries

FOREWORD

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

This first edition cancels and replaces the fourteenth edition of IEC 60086-2 published in 2021. This edition constitutes a technical revision.

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

a) separation of batteries with aqueous electrolyte into a separate Part 2-1: Physical and electrical specifications;
b) maximum open circuit voltage of FR10G445 and FR14505 was changed from 1,83 to 1,90 V;
c) load of digital audio test for FR10G445 was changed from 50mA to 75mA and MAD was modified;
d) portable lighting test was added for FR10G445;
e) motor/toy and radio /clock /remote control test was added for FR14505;

f) Annex D for common designation of IEC 60086-2:2021 was moved to IEC 60086-1, as Annex H.

g)

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

CD	Report on voting
35/XXXX/CD	35/XXXX/XX

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 60086-2-1 and IEC 60086-2-2 complement the general information and requirements of IEC 60086-1. Safety information of IEC 60086-2-2 is available in IEC 60086-4 and IEC 62281.

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.

PRIMARY BATTERIES –

Part 2-2: Physical and electrical specifications of lithium batteries

1 Scope

This part of IEC 60086 is applicable to primary batteries which are based on standardised lithium (non-aqueous) 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 and definitions

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 https://www.electropedia.org
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
primary cell
primary battery
cell or battery that is not designed to be electrically recharged

3.2
round cell
round battery
cell or battery with circular cross section button cell or battery

3.3
button cell
button battery
small round cell or battery where the overall height is less than the diameter, containing aqueous electrolyte

Note 1 to entry: For the specifications, refer to IEC 60086-2-1.

3.4
coin cell
coin battery
lithium button cell
lithium button 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.

3.5
nominal voltage
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 U_n.]

3.6
open-circuit voltage
OCV
voltage across the terminals of a cell or battery when it is off discharge

3.7
end-point voltage
EV
specified voltage of a battery at which the battery discharge is terminated

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

3.8
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.

3.9
application test
simulation of the actual use of a battery in a specific application

3.10
service output
service life, or capacity, or energy output of a battery under specified conditions of discharge

3.11
service output test
test designed to measure the service output of a battery

Note 1 to entry: A service output test may be prescribed, for example, when

a) an application test is too complex to replicate;

b) the duration of an application test would make it impractical for routine testing purposes.

3.12
terminal
conductive parts of a battery providing connection to an external circuit

[SOURCE:IEC 60050-482:2004, 482-02-22, modified – “conductive part of a device, electric circuit or electric network, provided” replaced by to “conductive parts of a battery providing” and “device, electric circuit or electric network to one or more external conductor” replaced by “an external circuit”.]