



SLOVENSKI STANDARD

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Nadomešča:

SIST EN 60952-2:2005

Letalske baterije - 2. del: Načrtovanje in konstrukcijske zahteve (IEC 60952-2:2013)

Aircraft batteries - Part 2: Design and construction requirements

Flugzeugbatterien - Teil 2: Anforderungen für Planung und Konstruktion

Batteries d'aéronefs - Partie 2: Exigences de conception et de construction

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Ta slovenski standard je istoveten z: EN 60952-2:2013

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EUROPEAN STANDARD
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Aircraft batteries - Part 2: Design and construction requirements (IEC 60952-2:2013)

Batteries d'aéronefs -
Partie 2: Exigences de conception et de
construction
(CEI 60952-2:2013)

Flugzeugbatterien -
Teil 2: Anforderungen für Planung und
Konstruktion
(IEC 60952-2:2013)

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This European Standard was approved by CENELEC on 2013-08-13. 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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 21/804/FDIS, future edition 3 of IEC 60952-2, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60952-2:2013.

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) 2014-05-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-08-13

This document supersedes EN 60952-2:2004.

EN 60952-2:2013 includes the following significant technical changes with respect to EN 60952-2:2004:

The inclusion of those formats that can be standardized along with their connectors and electrical interfaces.

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<https://standards.iteh.ai/en/standards/iteh-si-60952-2-2014-f03f-4fd3-80dd-e6d2015a5ffb/sist-en-60952-2-2014>
Endorsement notice

The text of the International Standard IEC 60952-2:2013 was approved by CENELEC as a European Standard without any modification.

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 60952-1	2013	Aircraft batteries - Part 1: General test requirements and performance levels	EN 60952-1	2013

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NORME INTERNATIONALE

Aircraft batteries – Part 2: Design and construction requirements

Batteries d'aéronefs – Partie 2: Exigences de conception et de construction

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

AIRCRAFT BATTERIES –

Part 2: Design and construction requirements

FOREWORD

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International Standard IEC 60952-2 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This third edition cancels and replaces the second edition published in 2004. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: the inclusion of those formats that can be standardized along with their connectors and electrical interfaces

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

FDIS	Report on voting
21/804/FDIS	21/815/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.

A list of all the parts in the IEC 60952 series, published under the general title *Aircraft batteries* 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 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.

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AIRCRAFT BATTERIES –

Part 2: Design and construction requirements

1 Scope

This part of IEC 60952 series defines the physical design, construction and material requirements for nickel-cadmium and lead-acid aircraft batteries containing vented or valve-regulated cells or monoblocs. The batteries are used for both general purposes and specific aerospace applications.

The specific topics addressed in this part serve to establish acceptable quality standards required to qualify a battery as airworthy as defined in Clause 3 of IEC 60952-1:2013.

A preferred range of aircraft batteries is specified in Annex A, but this part of IEC 60952 series may be used for other battery sizes, arrangements and ratings. For particular applications, other design requirements may be stipulated. These will be in addition to the requirements of this part and will be covered by specific documents.

It is recognised that additional data may be required by other organisations (national standards bodies, AECMA, SAE, etc.). The present standard can be used as a framework to devise tests for generation of the required data.

2 Normative references

[SIST EN 60952-2:2014](https://standards.iteh.ai/catalog/standards/sist/02d185d0-f03f-4fd3-80dd-1e601bap01818e-normative)

<https://standards.iteh.ai/catalog/standards/sist/02d185d0-f03f-4fd3-80dd-1e601bap01818e-normative>

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 60952-1:2013, *Aircraft batteries – Part 1: General test requirements and performance levels*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60952-1:2013 apply.

4 General construction requirements

4.1 General

Batteries complying with this standard shall be capable of meeting the requirements of IEC 60952-1 upon commissioning in accordance with manufacturer instructions or as specified in the product specification. Batteries designed for utilisation in the aerospace environment shall be sufficiently robust and shall withstand the rigors of normal application, handling, manoeuvres and the full range of operating conditions permitted for the aircraft concerned.

Proper integration of nickel-cadmium, and lead-acid batteries into aviation-related equipment requires cooperation between the battery supplier, aircraft designer, and the avionic equipment designer. Only through this cooperative exchange of the aircraft performance requirements and the battery's capabilities and limitations can an effective pairing of aircraft, avionics equipment and battery be realised.

Overall, the stated requirements and guidelines contained in this document are generic in nature, and serve only as a baseline for the design and test for specific battery and equipment pairings.

Below are general requirements pertinent to the safety, quality control, configuration control, qualification, storage, shipping, and disposal of nickel-cadmium, nickel metal-hydride, and lead-acid aircraft batteries.

4.2 Safety

Safety is the prime consideration in the use of nickel-cadmium, and lead acid batteries on aircrafts. The training of installers, end users and personnel involved in the assembly, handling, installation, maintenance and disposal of nickel-cadmium, nickel metal hydride, and lead-acid batteries with respect to their special characteristics is a necessary safety element.

Extreme care shall be taken in the handling, shipping, and storage of nickel-cadmium, nickel metal-hydride, and lead-acid aircraft batteries. Safety concerns include the possibility of fire, explosion, and corrosive nature of the electrolyte and the venting of toxic or flammable gases.

The battery shall be constructed so as to avoid the occurrence of short-circuiting of the battery and its components.

Terminals of batteries should be covered with non-conductive protection to avoid possibility of shorting during handling, shipping, and storage.

The battery shall be constructed such that there will be no ignition source inside the battery sufficient to cause ignition of hydrogen/oxygen mixtures in the event of failure of the venting system. All auxiliary equipment such as thermal sensors, thermostats, heaters and switching devices shall be so designed that they cannot be the source of an explosion. The current-carrying components of the battery shall be dimensioned and constructed so as to provide no ignition source under any external short circuit conditions.

The battery shall be so constructed that any debris due to any internal explosion failure shall be contained within the casing.

The battery should be constructed of materials that, in the absence of externally supplied energy, will not support combustion.

4.3 Safety philosophy

Aircraft designers must ensure that operational parameters and the environment in which the battery is to be used are not more severe than that to which it has been designed and tested. Operation at discharge rates and temperatures exceeding design limits, improper maintenance, and improper storage may result in dangerous battery failure. Additionally, the improper application of batteries may compromise the safety of the aircraft by it not being capable of delivering adequate power during an emergency to support aircraft essential loads for the design duration.

Nickel-cadmium, nickel metal-hydride, and lead-acid batteries and the aircraft equipment for which they are the power source must be designed such that no single failure in either can cause a safety hazard to the passengers or crew of the aircraft.