



SLOVENSKI STANDARD SIST EN IEC 62485-1:2018

01-oktober-2018

Nadomešča:
SIST EN 50272-1:2010

Varnostne zahteve za sekundarne baterije in baterijske naprave - 1. del: Splošne varnostne informacije

Safety requirements for secondary batteries and battery installations - Part 1: General safety information

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Exigences de sécurité pour les batteries d'accumulateurs et les installations de batteries - Partie 1: Informations générales de sécurité

<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>

Ta slovenski standard je istoveten z: EN IEC 62485-1:2018

ICS:

29.220.20	Kislinski sekundarni člani in baterije	Acid secondary cells and batteries
29.220.30	Alkalni sekundarni člani in baterije	Alkaline secondary cells and batteries

SIST EN IEC 62485-1:2018 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN IEC 62485-1:2018

<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>

EUROPEAN STANDARD

EN IEC 62485-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2018

ICS 29.220.20; 29.220.30

Supersedes EN 50272-1:2010

English Version

Safety requirements for secondary batteries and battery installations - Part 1: General safety information (IEC 62485-1:2015)

Exigences de sécurité pour les batteries d'accumulateurs et les installations de batteries - Partie 1: Informations générales de sécurité
(IEC 62485-1:2015)

Sicherheitsanforderungen an Sekundär-Batterien und Batterieanlagen - Teil 1: Allgemeine Sicherheitsinformationen
(IEC 62485-1:2015)

This European Standard was approved by CENELEC on 2018-04-09. 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.

SIST EN IEC 62485-1:2018

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, 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

EN IEC 62485-1:2018 (E)**European foreword**

This document (EN IEC 62485-1:2018) consists of the text of IEC 62485-1:2015 prepared by IEC/TC 21 "Secondary cells and batteries".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2019-04-09
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-04-09

This document supersedes EN 50272-1:2010.

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 62485-1:2015 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 60254-1	NOTE Harmonized as EN 60254-1.
IEC 60254-2	NOTE Harmonized as EN 60254-2.
IEC 60622	NOTE Harmonized as EN 60622.
IEC 60623	NOTE Harmonized as EN 60623.
IEC 60896-21	NOTE Harmonized as EN 60896-21.
IEC 60896-22	NOTE Harmonized as EN 60896-22.
IEC 60952-1	NOTE Harmonized as EN 60952-1.
IEC 60952-2	NOTE Harmonized as EN 60952-2.
IEC 60952-3	NOTE Harmonized as EN 60952-3.
IEC 61056-1	NOTE Harmonized as EN 61056-1.
IEC 61056-2	NOTE Harmonized as EN 61056-2.
IEC 61427 series	NOTE Harmonized as EN 61427 series.
IEC 61951-1	NOTE Harmonized as EN 61951-1.
IEC 61951-2	NOTE Harmonized as EN 61951-2.
IEC 61959	NOTE Harmonized as EN 61959.
IEC 61960	NOTE Harmonized as EN 61960.
IEC 61982	NOTE Harmonized as EN 61982.
IEC 62133	NOTE Harmonized as EN 62133.
IEC 62259	NOTE Harmonized as EN 62259.
IEC 62877-1	NOTE Harmonized as EN 62877-1.
IEC 62877-2	NOTE Harmonized as EN 62877-2.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-482	2004	International Electrotechnical Vocabulary (IEV) -- Part 482: Primary and secondary cells and batteries	-	-
IEC 60364-4-41	-	Low-voltage electrical installations -- Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	-
IEC 60993	-	Electrolyte for vented nickel-cadmium cells	EN 60993	-
IEC 61429	1995	Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135 and indications regarding directives 93/86/EEC and 91/157/EEC	EN 61429	1996
-	-		+ A11	1998
-	-		+ corrigendum Oct.	1998
IEC 62485-2	-	Safety requirements for secondary batteries and battery installations -- Part 2: Stationary batteries	EN 62485-2	-
IEC 62485-3	-	Safety requirements for secondary batteries and battery installations -- Part 3: Traction batteries	EN 62485-3	-
IEC 62485-4	-	Safety requirements for secondary batteries and battery installations -- Part 4: Valve-regulated lead-acid batteries for use in portable appliances	EN 62485-4	-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN IEC 62485-1:2018

<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>



IEC 62485-1

Edition 1.0 2015-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Safety requirements for secondary batteries and battery installations –
Part 1: General safety information**
(standards.iteh.ai)

**Exigences de sécurité pour les batteries d'accumulateurs et les installations de
batteries –**
Partie 1: Informations générales de sécurité

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.220.20; 29.220.30

ISBN 978-2-8322-2614-8

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions	7
4 General information	8
4.1 General.....	8
4.2 Charge.....	9
4.2.1 General	9
4.2.2 Charging techniques and charging procedures	9
4.2.3 Charger characteristics.....	10
4.2.4 Mode of operation.....	10
4.3 Discharge	11
4.4 Superimposed AC current / ripple current.....	12
5 Protection against electric shock	12
6 Disconnection and separation.....	12
7 Commissioning and putting batteries into operation	12
7.1 Delivery conditions of batteries	12
7.2 Electrolyte and topping up water (for vented / flooded type cells only).....	12
7.3 Commissioning	12
8 Limit values and correction factors	13
8.1 General.....	13
8.2 Rated capacity and depth of discharge	13
8.3 Charge current, charge voltage	13
8.3.1 General	13
8.3.2 Charge voltage	13
8.4 External short circuit.....	14
8.5 Battery temperature	14
8.5.1 Temperature limits.....	14
8.5.2 Temperature correction of the charging voltage	15
9 Provisions against explosion hazards	16
10 Provision against electrolyte hazards.....	16
11 Marking, labeling and instructions.....	17
12 Transport and storage	17
13 Disposal and environmental aspects.....	17
Bibliography.....	18
Figure 1 – Battery/cycle operation mode of a battery (charge/discharge)	10
Figure 2 – Response (switch) mode operation	11
Figure 3 – Parallel operation mode (including standby and buffer operation mode)	11
Figure 4 – Freezing point curve of sulphuric acid	15
Figure 5 – Freezing point curve of potassium hydroxide solution.....	15
Table 1 – Electrochemical couples (secondary cells)	8

Table 2 – Preferred fields of application of secondary battery design	9
Table 3 – Permitted variation of single cell voltage during charging with constant voltage at battery temperature 20 °C.....	14
Table 4 – Operating temperatures.....	14
Table 5 – Typical temperature correction factor λ_U of the single cell charging voltage	16

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 62485-1:2018](https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018)

<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

Part 1: General safety information

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.
<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>
- 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) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62485-1 has been prepared by IEC technical committee 21: Secondary cells and batteries.

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

FDIS	Report on voting
21/851/FDIS	21/856/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 parts of the IEC 62485 series can be found, under the general title *Safety requirements for secondary batteries and battery installations*, 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 website 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.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 62485-1:2018](https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018)

<https://standards.iteh.ai/catalog/standards/sist/9780d582-c6f6-486e-b04d-a6ca2e4149b3/sist-en-iec-62485-1-2018>