

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

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## EESTI STANDARDI EESSÕNA

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ICS 29.220.20, 29.220.30

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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)

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- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-04-09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

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# SAFETY REQUIREMENTS FOR SECONDARY BATTERIES AND BATTERY INSTALLATIONS –

## Part 1: General safety information

### 1 Scope

This Part of IEC 62485 specifies the basic requirements for secondary batteries and battery installations.

The requirements regarding safety, reliability, life expectancy, mechanical strength, cycle stability, internal resistance, and battery temperature, are determined by various applications, and this, in turn, determines the selection of the battery design and technology.

In general, the requirements and definitions are specified for lead-acid and nickel-cadmium batteries. For other battery systems with aqueous electrolyte, the requirements may be applied accordingly.

The standard covers safety aspects taking into account hazards associated with:

- electricity (installation, charging, discharging, etc.);
- electrolyte;
- inflammable gas mixtures;
- storage and transportation.

With respect to electrical safety, reference is made to IEC 60364-4-41.

### 2 Normative references

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 60050-482:2004, *International Electrotechnical Vocabulary – 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*

IEC 60993, *Electrolyte for vented nickel-cadmium cells*

IEC 61429:1995, *Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135*

IEC 62485-2, *Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries*

IEC 62485-3, *Safety requirements for secondary batteries and battery installations – Part 3: Traction batteries*

IEC 62485-4, *Safety requirements for secondary batteries and battery installations – Part 4: Valve-regulated lead-acid batteries for use in portable appliances*

ISO 7000, *Graphical symbols for use on equipment – Registered symbols*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482, as well as the following apply.

#### 3.1

##### **stationary battery**

##### **stationary battery installation**

battery installed in a fixed location and not generally intended to be moved from place to place

Note 1 to entry: The batteries are permanently connected to a charger and in many cases in addition to the load and the power supply and are incorporated into stationary equipment or installed in battery rooms for use in telecom, uninterruptible power supply (UPS), utility switching, emergency power or similar applications.

#### 3.2

##### **traction battery**

secondary battery designed to provide the propulsion energy for electrical vehicles

#### 3.3

##### **cranking battery**

battery used for starting of internal combustion engines in stationary, railway or other onboard applications

#### 3.4

##### **starter battery**

battery primarily used as a power source for the starting of internal combustion engines, lighting and also for auxiliary equipment of internal combustion engine vehicles

#### 3.5

##### **onboard battery**

battery used for power supply of a DC network onboard ships, rail vehicles or off-road vehicles without authorization for public traffic

#### 3.6

##### **aircraft battery**

battery used in aircrafts and helicopters for starting the auxiliary engine and powering the DC network

#### 3.7

##### **portable battery**

battery mainly used for power supply of portable appliances

Note 1 to entry: Batteries for portable equipment are usually maintenance-free.

#### 3.8

##### **battery room**

room in a building dedicated for the accommodation of stationary batteries

#### 3.9

##### **battery enclosure**

enclosure designed for the accommodation of batteries to protect against environmental impacts, unauthorised access of persons and hazards caused by the batteries