



Irish Standard  
I.S. EN 61056-1:2012

# General purpose lead-acid batteries (valve-regulated types) -- Part 1: General requirements, functional characteristics - Methods of test (IEC 61056-1:2012 (EQV))

## I.S. EN 61056-1:2012

*Incorporating amendments/corrigenda issued since publication:*

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61056-1**

December 2012

ICS 29.220.20

Supersedes EN 61056-1:2003

English version

**General purpose lead-acid batteries (valve-regulated types) -  
Part 1: General requirements, functional characteristics -  
Methods of test  
(IEC 61056-1:2012)**

Batteries d'accumulateurs au plomb-acide  
pour usage général (types à soupapes) -  
Partie 1: Exigences générales et  
caractéristiques fonctionnelles -  
Méthodes d'essai  
(CEI 61056-1:2012)

Bleibatterien für allgemeine Anwendungen  
(verschlossen) -  
Teil 1: Allgemeine Anforderungen,  
Eigenschaften -  
Prüfverfahren  
(IEC 61056-1:2012)

This European Standard was approved by CENELEC on 2012-03-28. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

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### Foreword

The text of document 21/768/FDIS, future edition 3 of IEC 61056-1, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61056-1:2012.

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) 2013-06-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-03-28

This document supersedes EN 61056-1:2003.

The main changes consist in adding new battery designations and an update of the requirements like the one concerning the marking.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

### Endorsement notice

The text of the International Standard IEC 61056-1:2012 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 60051-1	NOTE	Harmonized as EN 60051-1.
IEC 60051-2	NOTE	Harmonized as EN 60051-2.
IEC 60095 series	NOTE	Harmonized in EN 60095 series.
IEC 60254 series	NOTE	Harmonized in EN 60254 series.
IEC 60359	NOTE	Harmonized as EN 60359.
IEC 60896 series	NOTE	Harmonized in EN 60896 series.
IEC 61429	NOTE	Harmonized as EN 61429.

## 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 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60445	-	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors	EN 60445	-
IEC 61056-2	2012	General purpose lead-acid batteries (valve-regulated types) - Part 2: Dimensions, terminals and marking	EN 61056-2	2012

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **GENERAL PURPOSE LEAD-ACID BATTERIES (VALVE-REGULATED TYPES) –**

#### **Part 1: General requirements, functional characteristics – Methods of test**

#### **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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- 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 61056-1 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This third edition cancels and replaces the second edition of IEC 61056-1 published in 2002. It constitutes a technical revision.

The main changes consist in adding new battery designations and an update of the requirements like the one concerning the marking.

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

FDIS	Report on voting
21/768/FDIS	21/774/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 61056 series, published under the general title *General purpose lead-acid batteries (valve-regulated types)*, 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.

## GENERAL PURPOSE LEAD-ACID BATTERIES (VALVE-REGULATED TYPES) –

### Part 1: General requirements, functional characteristics – Methods of test

#### 1 Scope

This Part of IEC 61056 specifies the general requirements, functional characteristics and methods of test for all general purpose lead-acid cells and batteries of the valve-regulated type :

- for either cyclic or float charge application;
- in portable equipment, for instance, incorporated in tools, toys, or in static emergency, or uninterruptible power supply and general power supplies.

The cells of this kind of lead-acid battery may either have flat-plate electrodes in prismatic containers or have spirally wound pairs of electrodes in cylindrical containers. The sulphuric acid in these cells is immobilized between the electrodes either by absorption in a micro-porous structure or in a gelled form.

NOTE The dimensions, terminals and marking of the lead-acid cells and batteries which are applied by this standard are given in IEC 61056-2.

This part of IEC 61056 does not apply for example to lead-acid cells and batteries used for

- vehicle engine starting applications (IEC 60095 series),
- traction applications (IEC 60254 series), or
- stationary applications (IEC 60896 series).

Conformance to this standard requires that statements and claims of basic performance data by the manufacturer correspond to these test procedures. The tests may also be used for type qualification.

#### 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 60417, *Graphical symbols for use on equipment*

IEC 60445, *Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors*

IEC 61056-2:2012, *General purpose lead-acid batteries (valve-regulated types) – Part 2: Dimensions, terminals and marking*

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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