Irish Standard
I.S. EN 61982:2012

Secondary batteries (except lithium) for the propulsion of electric road vehicles - Performance and endurance tests (IEC 61982:2012 (EQV))

I.S. EN 61982:2012

Incorporating amendments/corrigenda issued since publication:

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Supersedes EN 61982-1:2006, EN 61982-2:2002 + corr. Dec.2002, EN 61982-3:2001

English version

Secondary batteries (except lithium) for the propulsion of electric road vehicles - Performance and endurance tests

(IEC 61982:2012)

Accumulateurs (excepté lithium) pour la propulsion des véhicules routiers électriques - Essais de performance et d'endurance (CEI 61982:2012)

Sekundärbatterien (ausgenommen Lithium-Batterien) für den Antrieb von Elektrostraßenfahrzeugen - Kapazitäts- und Lebensdauerprüfungen (IEC 61982:2012)

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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 21/775/FDIS, future edition 1 of IEC 61982, prepared by IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61982:2012.

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)	2013-04-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-06-01

This document supersedes EN 61982-1:2006, EN 61982-2:2002 + corrigendum December 2002 and EN 61982-3:2001.

EN 61982:2012 includes the following significant technical changes with respect to EN 61982-1:2006, EN 61982-2:2002 and EN 61982-3:2001:

- clarification of the scope;
- update of some tests, and
- addition of the Annex A dealing with NiMh batteries for the propulsion of hybrid electric vehicles.

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 61982:2012 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 series	NOTE	Harmonized as EN 60051 series (not modified).
IEC 60254-1:2005	NOTE	Harmonized as EN 60254-1:2005 (not modified).
IEC 60359	NOTE	Harmonized as EN 60359.
IEC 62660-1:2010	NOTE	Harmonized as EN 62660-1:2011 (not modified).
IEC 62660-2:2010	NOTE	Harmonized as EN 62660-2:2011 (not modified).

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.

Publication	Year	Title	EN/HD	Year
IEC 60050-482	2004	International Electrotechnical Vocabulary (IEV) - Part 482: Primary and secondary cells and batteries	-	-
IEC 61434	-	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Guide to the designation of current in alkaline secondary cell and battery standards	EN 61434	-

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SECONDARY BATTERIES (EXCEPT LITHIUM) FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –

Performance and endurance tests

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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International Standard IEC 61982 has been prepared by IEC technical committee 21: Secondary cells and batteries.

This first edition cancels and replaces the IEC 61982-1:2006, the IEC 61982-2:2002 and the IEC 61982-3: 2001. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61982-1, IEC 61982-2 and IEC 61982-3:

– clarification of the scope;
– update of some tests, and
– addition of the Annex A dealing with NiMh batteries for the propulsion of hybrid electric vehicules.

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

FDIS	Report on voting
21/775/FDIS	21/782/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.

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.

INTRODUCTION

The first edition of IEC 61982 series was composed of the following three parts:

IEC 61982-1:2006, *Secondary batteries for the propulsion of electric road vehicles – Part 1:Test parameters*

IEC 61982-2:2002, *Secondary batteries for the propulsion of electric road vehicles – Part 2:Dynamic discharge performance test and dynamic endurance test*

IEC 61982-3:2001, *Secondary batteries for the propulsion of electric road vehicles – Part 3: Performance and life testing (traffic compatible, urban use vehicles)*

The current standard IEC 61982:2012 replaces the former IEC 61982 series above.

In terms of lithium ion batteries for automobile application, the following standards are applicable:

IEC 62660-1:2010, *Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 1: Performance testing*

IEC 62660-2:2010, *Secondary lithium-ion cells for the propulsion of electric road vehicles – Part 2: Reliability and abuse testing*

ISO 12405-1:2011, *Electrically propelled road vehicles – Test specification for lithium-ion traction battery packs and systems – Part 1: High-power applications*

ISO 12405-2:2011, *Electrically propelled road vehicles – Test specification for lithium-Ion traction battery systems – Part 2:High energy applications* (to be published)

SECONDARY BATTERIES (EXCEPT LITHIUM) FOR THE PROPULSION OF ELECTRIC ROAD VEHICLES –

Performance and endurance tests

1 Scope

This International Standard is applicable to performance and endurance tests for secondary batteries used for vehicle propulsion applications. Its objective is to specify certain essential characteristics of cells, batteries, monoblocks, modules and battery systems used for propulsion of electric road vehicles, including hybrid electric vehicles, together with the relevant test methods for their specification.

The tests may be used specifically to test batteries developed for use in vehicles such as passenger vehicles, motor cycles, commercial vehicles, etc. This standard is not applicable to battery systems for specialist vehicles such as public transport vehicles, refuse collection vehicles or heavy duty vehicles, where the battery is used in the similar way to the industrial vehicles.

The test procedures are defined as a function of the vehicle requirements of performance.

This standard is applicable to lead-acid batteries, Ni/Cd batteries, Ni/MH batteries and sodium based batteries used in electric road vehicles.

Annex A specifies performance and cycle life test procedures of Ni/MH batteries used for the propulsion of hybrid electric vehicle (HEV).

NOTE This standard is not applicable to lithium-ion batteries for automobile application that are specified in IEC 62660-1, IEC 62660-2, ISO 12405-1 and ISO 12405-2 (to be published).

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 (IEV) – Part 482: Primary and secondary cells and batteries*

IEC 61434, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Guide to designation of current in alkaline secondary cell and battery standards*

3 Terms and definitions

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

3.1
battery system
energy storage device that includes cells or cell assemblies or battery pack(s) as well as electrical circuits and electronics