

---

---

Secondary batteries for the propulsion of electric road vehicles - Part 2: Dynamic discharge performance test and dynamic endurance test

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 61982-2:2003  
<https://standards.iteh.ai/catalog/standards/sist/e1e6ec24-1ed0-412e-93fa-7eb97f0a6840/sist-en-61982-2-2003>

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

SIST EN 61982-2:2003

<https://standards.iteh.ai/catalog/standards/sist/e1e6ec24-1ed0-412e-93fa-7eb97f0a6840/sist-en-61982-2-2003>

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

Accumulateurs pour la propulsion  
des véhicules routiers électriques  
Partie 2: Essai de performance  
de décharge dynamique  
et essai d'endurance dynamique  
(CEI 61982-2:2002)

Sekundärbatterien für den Antrieb von  
elektrischen Straßenfahrzeugen  
Teil 2: Dynamische Kapazitäts- und  
dynamische Lebensdauerprüfung  
(IEC 61982-2:2002)

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 61982-2:2003

<https://standards.iteh.ai/catalog/standards/sist/e1e6ec24-1ed0-412e-93fa-7eb97f0a6840/sist-en-61982-2-2003>

This European Standard was approved by CENELEC on 2002-10-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

### Foreword

The text of document 21/567/FDIS, future edition 1 of IEC 61982-2, prepared jointly by IEC TC 69, Electric road vehicles and electric industrial trucks and IEC TC 21, Secondary cells and batteries, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61982-2 on 2002-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2003-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2005-10-01

Annexes designated "normative" are part of the body of the standard.  
Annexes designated "informative" are given for information only.  
In this standard, annex ZA normative and annex A is informative.  
Annex ZA has been added by CENELEC.

---

### Endorsement notice

The text of the International Standard IEC 61982-2:2002 was approved by CENELEC as a European Standard without any modification.

SIST EN 61982-2:2003

<https://standards.iteh.ai/catalog/standards/sist/e1e6ec24-1ed0-412e-93fa-7eb97f0a6840/sist-en-61982-2-2003>

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60050-486	1991	International Electrotechnical Vocabulary (IEV) Chapter 486: Secondary cells and batteries	-	-
IEC 60051	Series	Direct acting indicating analogue electrical measuring instruments and their accessories	EN 60051	Series
IEC 60359	- <sup>1)</sup>	Electrical and electronic measurement equipment - Expression of performance	EN 60359	2002 <sup>2)</sup>
IEC 60485	-	Digital electronic d.c. voltmeters and d.c. electronic analogue-to-digital converters	-	-

---

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

SIST EN 61982-2:2003

<https://standards.iteh.ai/catalog/standards/sist/e1e6ec24-1ed0-412e-93fa-7eb97f0a6840/sist-en-61982-2-2003>

**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**61982-2**

Première édition  
First edition  
2002-08

---

---

**Accumulateurs pour la propulsion  
des véhicules routiers électriques –**

**Partie 2:  
Essai de performance de décharge dynamique  
et essai d'endurance dynamique**

**(standards.iteh.ai)**

**Secondary batteries for the propulsion  
of electric road vehicles –**

**Part 2:  
Dynamic discharge performance test  
and dynamic endurance test**

© IEC 2002 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

**L**

Pour prix, voir catalogue en vigueur  
For price, see current catalogue

## CONTENTS

FOREWORD .....	5
1 General.....	7
1.1 Scope .....	7
1.2 Normative references .....	7
2 Definitions.....	7
3 General test requirements .....	9
3.1 Accuracy of measuring instruments .....	9
3.1.1 Electrical measuring instruments .....	9
3.1.2 Temperature measurement .....	9
3.1.3 Electrolyte density measurement .....	9
3.1.4 Time measurement .....	9
3.2 General provisions .....	9
3.2.1 Current slew rate .....	9
3.2.2 Temperature – electrolyte accessible.....	9
3.2.3 Temperature – electrolyte not accessible .....	11
3.2.4 Electrolyte density readings .....	11
3.3 Preparation of the test samples .....	11
3.4 Test conditions .....	11
3.5 Charging and rest after charge .....	11
4 Testing procedures .....	11
4.1 Rated capacity and conditioning .....	11
4.1.1 Basic considerations .....	11
4.1.2 Conditioning .....	13
4.2 Dynamic discharge performance test.....	13
4.2.1 Basic considerations .....	13
4.2.2 Test cycle definition without regenerative charging .....	13
4.2.3 Test cycle definition with regenerative charging .....	13
4.2.4 Definition of dynamic discharge performance.....	13
4.3 Dynamic endurance test.....	15
4.3.1 Basic considerations .....	15
4.3.2 Test cycle without regenerative charging .....	15
4.3.3 Test cycle with regenerative charging .....	15
4.3.4 Endurance test.....	15
4.4 Remarks .....	17
4.4.1 Comparison of batteries .....	17
4.4.2 Definition of cell voltage .....	17
4.4.3 Test sequence .....	17
4.4.4 Number of test cells in the dynamic capacity test.....	17
4.4.5 Number of test cells in the endurance test .....	17
4.4.6 Mechanical support .....	19
Annex A (informative) List of parameters for some battery systems.....	21



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SECONDARY BATTERIES FOR THE PROPULSION  
OF ELECTRIC ROAD VEHICLES –****Part 2: Dynamic discharge performance test  
and dynamic endurance test**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61982-2 has been prepared jointly by IEC technical committees 69: Electric road vehicles and electric industrial trucks, and 21: Secondary cells and batteries, and by subcommittee 21A: Secondary cells and batteries containing alkaline or other non-acid electrolytes, of IEC technical committee 21: Secondary cells and batteries.

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

FDIS	Report on voting
21/567/FDIS	21/570/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 3

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.