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Interested committees:

Title: BS EN 18060 Road vehicles - Rechargeable batteries with internal energy storage - Performance of alkali-Ion (Li-Ion, Na-Ion), Pb, NiMH and combined chemistries EV modules and batteries

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

English Version

Road vehicles - Rechargeable batteries with internal
energy storage - Performance of alkali-Ion (Li-Ion, Na-Ion),
Pb, NiMH and combined chemistries EV modules and
batteries

Véhicules routiers - Batteries rechargeables avec
stockage interne d'énergie - Performance des modules
et batteries alcali-ion (Li-Ion, Na-Ion), Pb, NiMH et
chimies combinées pour véhicules électriques

Straßenfahrzeuge - Wiederaufladbare Batterien mit
internem Speicher - Unmittelbare Leistung von
Modulen und Batterien für Elektrofahrzeuge mit Li-Ion,
Pb, NiMH und kombinierter Chemie

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 301.

If this draft becomes a European Standard, CEN 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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Abbreviated terms.....	14
5 General requirements.....	14
5.1 Prerequisites for performance tests.....	14
5.2 Accuracy of measurement equipment and measured values	15
6 Requirements.....	15
6.1 Preconditioning cycles.....	15
6.1.1 Purpose.....	15
6.1.2 Test procedure.....	15
6.2 Standard cycle (SC).....	16
6.2.1 Purpose.....	16
6.2.2 Test procedure.....	16
6.3 Capacity (in Ah)	17
6.3.1 Purpose.....	17
6.3.2 Test procedure.....	17
6.3.3 Determination of capacity (in Ah)	17
6.4 Determination of internal resistance (in Ω)	18
6.5 Testing of partly charged DUT	19
6.6 Determination of power (in W)	19
6.7 Determination of energy round trip efficiency (in %)	20
6.8 Determination of nominal power	21
6.9 Beginning of life (BOL) full equivalent cycles (for expected lifetime determination)	21
7 Test report.....	22
Annex A (normative) Simplified requirements for individual battery testing due to change of status (status 'reused' and 'remanufactured')	23
A.1 Preconditioning – Purpose	23
A.2 Capacity (in Ah)	23
A.2.1 Purpose.....	23
A.2.2 Test procedure.....	23
A.2.3 Determination of capacity (in Ah)	24
A.3 Determination of internal resistance (in Ω)	24
A.4 Testing of partly charged DUT	24

A.5	Determination of power (in W)	25
A.6	Determination of energy round trip efficiency (in %)	25
Annex ZA (informative)	Relationship between this European Standard and the requirements of Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC aimed to be covered	26
Bibliography		28

European foreword

This document (prEN 18060:2024) has been prepared by Technical Committee CEN/TC 301 “Road vehicles”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Introduction

European Commission published the standardization request M/579 to the European standardization organisations as regards to performance and sustainability requirements for batteries.

Battery systems are an efficient energy storage system for electrically propelled vehicles. The performance requirements for electric road vehicles battery systems are significantly different from those batteries used for consumer electronics or stationary energy storage. The state of charge window that is accessible for the vehicle application is defined by durability and safety requirements.

This document provides specific performance test procedures for EV battery systems, battery packs and battery modules.

It enables vehicle manufacturers to choose test procedures to evaluate the characteristics of EV battery systems, battery packs and battery modules for their specific requirements.

This document specifies test procedures for alkali-Ion (Li-Ion, Na-Ion), Pb, NiMH and combined chemistries for EV battery systems, battery packs and battery modules to obtain performance values for rated capacity, rated power, internal resistance, and energy round trip efficiency.

NOTE EV cells performance standard is under drafting in CLC/TC21X/WG 7.

1 Scope

This document describes the performance test procedures and calculation methods for alkali-ion (for example Li-ion, Na-ion), Pb, NiMH and combined chemistries EV battery systems, battery packs and battery modules. This document considers the most appropriate metric based on application for electrical performance between different models/products on the market. It specifies performance test procedures and calculation methods to obtain performance values for:

- rated capacity (in Ah);
- power (in W);
- internal resistance (in Ω);
- energy round trip efficiency (in %);
- expected lifetime (number of reference cycles).

The tests in this document are relevant for EV battery systems, battery packs and battery modules intended for the following applications:

- motor vehicles, including M, N and O categories referred to in Article 2 of Regulation (EU) 2018/858 of the European Parliament and of the Council with traction battery;
- L-category vehicles referred to in Article 2 of Regulation EU 168/2013 of the European Parliament and of the Council with traction battery of more than 25kg.

NOTE 1 Other chemistry can be included in the scope of this document.

NOTE 2 These procedures could be used for type testing of a model/product at begin of life (status 'original') and for individual battery testing after change of status (status 'reused' and 'remanufactured').

These tests for parameters above are performed at component level outside the vehicle.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

battery

device delivering electrical energy generated by direct conversion of chemical energy, having internal or external storage, and consisting of one or more non-rechargeable or rechargeable battery cells, modules or of packs of them, including a battery that has been subject to preparing for re-use, preparing for repurpose or repurposing, or remanufacturing

[SOURCE: regulation (EU) 2023/1542]

3.2

battery cell

basic functional unit in a battery constituted by electrodes, electrolyte, container, terminals and, if applicable, separators, and containing the active materials the reaction of which generates electrical energy

[SOURCE: regulation (EU) 2023/1542]

3.3

battery control unit

BCU

electronic device that controls, manages, detects or calculates electric and thermal functions of the *battery system* (3.8) and that provides communication between the battery system and other vehicle controllers

[SOURCE: ISO 12405-4:2018, 3.1]

3.4

battery electric vehicle

BEV

vehicle equipped with a powertrain containing exclusively electric machines as propulsion energy converters and exclusively rechargeable electric energy storage systems as propulsion energy storage systems

[SOURCE: UNECE Global technical regulation No. 15 on Worldwide harmonized Light vehicles Test Procedures]