
Sekundarne baterije za lahka prevozna sredstva – 1. del: Preskusne specifikacije za vidike zmogljivosti in vzdržljivosti litij-ionskih in natrij-ionskih baterij

Secondary batteries for light means of transport - Part 1: Test specifications for performance and durability aspects for lithium-ion and sodium-ion batteries

Sekundärbatterien für leichte Verkehrsmittel - Teil 1: Prüfspezifikationen für Leistungs- und Haltbarkeitsaspekte für Lithium-Ionen- und Natrium-ionen-Batterien

Batteries d'accumulateurs destinées aux moyens de transport légers - Partie 1: Spécifications d'essai pour les aspects de performance et de durabilité des batteries lithium-ion et sodium-ion

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43.120	Električna cestna vozila	Electric road vehicles

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Secondary batteries for light means of transport - Part 1: Test specifications for performance and durability aspects for lithium-ion and sodium-ion batteries

Batteries d'accumulateurs au lithium pour applications destinée aux moyens de transport légers - Partie 1 : Spécification de test pour les aspects de performance et durabilité

Lithium-Sekundärbatterien für leichte Verkehrsmittel - Teil 1: Prüfspezifikationen für Leistungs- und Haltbarkeitsaspekte

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2026-11-06.

It has been drawn up by CLC/TC 21X.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 50762-1:2026) has been prepared by CLC/TC 21X “Secondary cells and batteries”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dav + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dav + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dav + 36 months
(to be confirmed or modified when voting)

This document has been prepared under a standardization request addressed to CENELEC 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 ZZ, which is an integral part of this document.

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Introduction

Secondary lithium-ion and sodium-ion batteries are an efficient energy storage system for LMT (light means of transport).

The European Commission has issued a standardization request M/579 Amd 1 to the European standardization organizations in relation to the European Battery Regulation (EU) 2023/1542. In this standardization request one topic is the performance and durability aspects of LMT batteries.

The performance and durability requirements for LMT batteries are different from those batteries used for consumer electronics or stationary usage.

This document specifies measurement and calculation procedures for the determination of performance and durability values of LMT batteries for two application groups A and B reflecting different usage patterns. The purpose is the comparability within a given group of these values for LMT batteries from different manufacturers. It is very important to note that these values are not warranted product specifications which the user can claim. The reason therefore is that the batteries can be used in different systems and with different application parameters. Additionally, the environmental conditions and the usage are very individual and are possibly not comparable to the measurement procedures under laboratory conditions specified in this document.

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1 Scope

This document specifies test procedures for performance and durability aspects of light means of transport (LMT) batteries. These are sealed batteries with a maximum weight of 25 kg that are specifically designed to provide electric power for the traction of wheeled vehicles that can be propelled by an electric motor alone or by a combination of motor and human power, including type-approved vehicles of category L within the meaning of Regulation (EU) No 168/2013 of the European Parliament and of the Council, and that is not an electric vehicle battery. The scope of this document is restricted to lithium-ion and sodium-ion batteries.

LMT batteries contain at least the following general classes:

- batteries of L-category vehicles referred to in Article 2 of Regulation EU 168/2013 of the European Parliament and of the Council (e.g. batteries for light motorcycles, trikes and quads), where the battery weight is less than 25 kg;
- batteries for EPACs (electrically power assisted cycle) with or without type approval;
- batteries for personal mobility devices (PMD), e.g. e-kick-scooters, hoverboards and self-balancing vehicles.

Batteries above 25 kg for mobility are not in the scope of this document, even though they can be used in L category vehicles (e.g. L7 category). Batteries for toys are also not in scope of this document based on the recital 15 of Regulation (EU) 2023/1542: *“Batteries used for traction in wheeled vehicles considered to be toys within the meaning of Directive 2009/48/EC of the European Parliament and of the Council, should, for the purposes of this Regulation, not be considered to be LMT batteries, but to be portable batteries.”*

Re-used, remanufactured, repaired and repurposed batteries (hereafter called “R-batteries”) are also in the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 61960-3:2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications – Part 3: Prismatic and cylindrical lithium secondary cells, and batteries made from them (IEC 61960-3:2017)*

3 Terms, definitions, abbreviations and parameters

3.1 Terms and definitions

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

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

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

3.1

battery cell

basic functional unit in a battery, composed of electrodes, electrolyte, container, terminals and, if applicable, separators, and containing the active materials generating or storing electrical energy

Note 1 to entry: Battery cell and cell are used synonymously.

[SOURCE: Regulation (EU) 2023/1542, modified and note 1 to entry added]

3.2

battery pack

set of battery cells or modules that are connected together or encapsulated within an outer casing, to form a complete battery which is not meant to be split up or opened by the end-user

Note 1 to entry: Battery and battery pack are used synonymously in this document.

[SOURCE: Regulation (EU) 2023/1542, modified by adding note 1 to entry]

3.3

battery management system

BMS

electronic system associated with a battery which monitors and/or manages its state, calculates secondary data, reports that data and/or controls its environment to influence the battery's safety, performance and/or service life and has the functions to detect e.g. over charging, over current and over heating

Note 1 to entry: This definition is applicable to LMT batteries.

Note 2 to entry: The function of the BMS can be assigned to the battery pack or to equipment that uses the battery or both.

Note 3 to entry: A BMS is sometimes also referred to as a BMU (battery management unit) or BCU (battery control unit).

[SOURCE: EN 62620:2015,¹ 3.11, modified]

3.4

capacity

electric charge which a fully charged cell or battery can deliver under specified discharge conditions

[SOURCE: adopted from electropedia]

3.5

rated capacity

Cr

static, type-specific, declared capacity value of a battery expressed in total number of ampere-hours (Ah) that can be withdrawn from a fully charged battery under reference conditions

Note 1 to entry: This definition has been modified by adding the clarification that this is a static type-specific declared value. To be differentiated from BOL capacity, which is an individual value.

Note 2 to entry: All C-rates are based on the rated capacity.

Note 3 to entry: The rated capacity is also sometimes referred as nameplate capacity, label capacity or nominal capacity.

[SOURCE: Regulation (EU) 2023/1542, modified – Note 1 to 3 to entry added]

3.6

capacity fade

C_{fade}

decrease in the amount of charge that a battery can deliver, with respect to the BOL capacity

Note 1 to entry: Regulation (EU) 2023/1542 states rated voltage. This has been deleted, as this is defined in the test procedures of the current document in 6.2 and 10.2.

[SOURCE: Regulation (EU) 2023/1542, modified]

¹ As impacted by EN 62620:2015/A1:2023.