

MAANTEESÕIDUKID. SISEMISE
ENERGIASALVESTUSEGA TAASLAETAVAD AKUD.
LEELISIOON (LI-ION, NA-ION), PLII (PB),
NIKKEL-METALLHÜDRIID (NIMH) JA KOMBINEERITUD
ÜHENDITEGA ELEKTRISÕIDUKITE AKUDE JA
AKUMOODULITE TOIMIVUS NING VASTUPIDAVUS

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 18060:2025 sisaldab Euroopa standardi EN 18060:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.10.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 18060:2025 consists of the English text of the European standard EN 18060:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 01.10.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

Road vehicles - Rechargeable batteries with internal energy storage - Performance and durability 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 et durabilité des modules et batteries alcalins-ion (Li-Ion, Na-Ion), Pb, NiMH et des 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 European Standard was approved by CEN on 27 July 2025.

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European foreword

This document (EN 18060:2025) has been prepared by Technical Committee CEN/TC 301 “Road vehicles”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

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

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.

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Introduction

The European Commission published the standardization request M/579 to the European standardization organisations as regards to performance and durability 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 batteries.

It enables vehicle manufacturers to choose test procedures to evaluate the characteristics of EV battery systems, battery packs, battery modules and battery cells 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, battery modules and battery cells to obtain performance and durability values for rated capacity, power, internal resistance, and energy round trip efficiency.

1 Scope

This document describes the performance and durability test procedures and calculation methods for alkali-ion (for example Li-ion, Na-ion), Pb, NiMH and combined chemistries EV battery systems, battery packs, battery modules and battery cells. 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 and durability values for:

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

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, and includes a battery that has been subject to preparation for re-use, preparation for repurposing, repurposing, or remanufacturing

[SOURCE: Regulation (EU) 2023/1542]

3.2

battery cell

basic functional unit in a battery, composed of 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]