Road vehicles - Rechargeable batteries with internal energy storage - Steps, conditions and protocols for the safe repair and re-use and preparation for repurposing of modules and batteries designed for EV applications

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 18061:2025 sisaldab Euroopa standardi EN 18061:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 18061:2025 consists of the English text of the European standard EN 18061:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.08.2025.	Date of Availability of the European standard is 06.08.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Road vehicles - Rechargeable batteries with internal energy storage - Steps, conditions and protocols for the safe repair and re-use and preparation for repurposing of modules and batteries designed for EV applications

Véhicules routiers - Véhicules à propulsion électrique - Étapes, conditions et protocoles pour la réparation, la réutilisation et la préparation en vue de la réaffectation en toute sécurité des modules et batteries conçus à l'origine pour des applications de véhicules électriques

Straßenfahrzeuge - Elektrisch angetriebene Fahrzeuge - Schritte, Bedingungen und Protokolle für die sichere Reparatur, Wiederverwendung und Vorbereitung zur Umnutzung von Modulen und Batterien, die ursprünglich für EV-Anwendungen entwickelt wurden

This European Standard was approved by CEN on 2 June 2025.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN 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 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 18061:2025) 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 February 2026, and conflicting national standards shall be withdrawn at the latest by February 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.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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 steps, conditions and protocols for the safe repair and re-use and preparation for repurposing of modules and batteries designed for EV applications are significantly different from those batteries used for consumer electronics or stationary usage.

There are potential safety risks to be considered before reusing an EV battery system, battery pack and battery modules. These should be thoroughly addressed before considering any kind of re-use operations. Further, all re-used batteries or sub-units of batteries shall comply with all safety, transport and product testing at the same level as new battery products (except tests requiring destructive sampling).

This document provides specific steps, conditions and protocols for the safe repair and re-use and preparation for repurposing of modules and batteries designed for EV battery systems, battery packs and battery modules.

This document includes technical provisions to facilitate the safe repair and re-use and preparation for repurposing of EV battery systems, battery packs and battery modules.

This document also includes an informative annex on guidance on design and assembly techniques facilitating the maintenance, repair, re-use and preparation for repurposing of batteries designed for EV applications.

NOTE This document is not intended for any repurposing of EV batteries, only for preparation for repurposing.

1 Scope

This document describes steps, conditions and protocols for safe maintenance and repair to facilitate remanufacturing, re-use and preparation for repurposing of battery systems, battery packs and battery modules designed for EV applications for alkali-ion (Li-ion, Na-ion), Pb, NiMH and combined chemistries.

This document also includes an informative guidance on design and assembly techniques that facilitate the maintenance, repair, re-use and preparation for repurposing of EV battery systems, battery packs and battery modules (Annex B).

NOTE Individual cell is replaced when it is allowed and described by the EV battery systems, battery packs and battery modules manufacturer. In this case, battery modules manufacturer provides the necessary instructions for cell replacement.

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 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
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 include a battery that has been subject to preparation for re-use, preparing 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]

3.3
battery control unit
BCU
electronic device that controls, manages, detects or calculates electric and thermal functions of the *battery system* (3.9) and that provides communication between the battery system and other vehicle controllers

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