



BSI Standards Publication

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

National foreword

This British Standard is the UK implementation of EN 18061:2025.

The UK participation in its preparation was entrusted to Technical Committee PEL/21, Secondary cells and batteries.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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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

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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of an identical text or by endorsement, at the latest by February 2026, and conflicting national standards shall be withdrawn at the latest by February 2026.

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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]

3.4**battery management system
BMS**

electronic device that controls or manages the electric and thermal functions of the battery in order to ensure the battery's safety, performance and service life, manages and stores the data for the -parameters for determining the battery's state of health and expected lifetime and communicates with the vehicle, light mean of transport or appliance in which the battery is incorporated, or with a public or private charging infrastructure

[SOURCE: REGULATION (EU) 2023/1542]

3.5**battery manufacturer**

natural or legal person who manufactures a battery or has a battery designed or manufactured, and markets that battery under its own name or trademark or puts it into service for its own purposes

[SOURCE: REGULATION (EU) 2023/1542]

Note 1 to entry: The battery manufacturer(s) is(are) in charge of the battery CE marking and the type approval from UNECE.

3.6**battery module**

set of battery cells that are connected together or encapsulated within an outer casing to protect the cells against external impact, and which is meant to be used either alone or in combination with other modules

Note 1 to entry: Battery modules may or may not include parts of the BMS such as sensors and/or electronics.

Note 2 to entry: Battery module encapsulation can also manage internal stress from the cells.

Note 3 to entry: Battery module is a voluntary design feature of an EV battery.

[SOURCE: REGULATION (EU) 2023/1542]

3.7**battery pack**

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

[SOURCE: REGULATION (EU) 2023/1542]