



SLOVENSKI STANDARD
oSIST prEN 18061:2024
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Cestna vozila - Vozila na električni pogon - Ukrepi, pogoji in protokoli za varno popravilo in ponovno uporabo modulov in baterij, prvotno zasnovanih za uporabo v električnih vozilih

Road vehicles - Electrically propelled vehicles - Steps, conditions and protocols for the safe repair and re-use of modules and batteries originally designed for EV applications

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

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

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43.120	Električna cestna vozila	Electric road vehicles

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ICS

English Version

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

Véhicules routiers - Véhicules à propulsion électrique - Étapes, conditions et protocoles pour la réparation et la réutilisation 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 und Wiederverwendung von Modulen und Batterien, die ursprünglich für EV-Anwendungen entwickelt wurden

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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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prEN 18061:2024 (E)**European foreword**

This document (prEN 18061:2024) 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.

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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 reuse 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 reuse operations. Further, all reused 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 reuse 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 reuse 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, reuse of batteries designed for EV applications.

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

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prEN 18061:2024 (E)

1 Scope

This document describes steps, conditions and protocols for the safe maintenance and repair to facilitate the remanufacturing, reuse of battery systems, battery packs and battery modules designed for EV applications for alkali-ion (for example 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, reuse of EV battery systems, battery packs and battery modules (Annex B).

NOTE 1 The repurposing and preparation for repurposing from an EV application to another one for which the battery system, battery pack or the battery module was originally not designed for is described in a separate document, EN XXX.

NOTE 2 Individual cell replacement is only permitted when it is specifically allowed by the EV battery systems, battery packs and battery modules manufacturer.

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 reuse, 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* (3.9) 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, that manages and stores the data on the - parameters for determining the state of health (and expected lifetime of batteries laid down in Annex VII) and that communicates with the vehicle, light mean of transport (with a weight above 25 kg) or appliance in which the battery is incorporated, or with a public or private charging

[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 stand-alone or in combination with other modules

[SOURCE: REGULATION (EU) 2023/1542]

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.

3.7

battery pack

set of battery cells or modules that are connected together or encapsulated within an outer casing, so as to form a complete unit that the end-user is not intended to split up or open

[SOURCE: REGULATION (EU) 2023/1542]

prEN 18061:2024 (E)**3.8****battery producer**

manufacturer, importer or distributor or other natural or legal person who, irrespective of the selling technique used, including by means of distance contracts as defined in Article 2(7) of Directive 2011/83/EU, alternatively:

(i) is established in a Member State and manufactures batteries under its own name or trademark, or has batteries designed or manufactured and supplies them for the first time under its own name or trademark, including those incorporated in appliances, light means of transport or vehicles, within the territory of that Member State;

(ii) is established in a Member State and resells within the territory of that Member State, under its own name or trademark, batteries, including those incorporated in appliances, light means of transport or vehicles, manufactured by others. A reseller is not regarded as the 'producer' if the brand of the manufacturer appears on the batteries, as provided for in point (i);

(iii) is established in a Member State and supplies for the first time in this Member State on a professional basis, batteries, including those incorporated in appliances, light means of transport or vehicles, from a third country or from another Member State;

(iv) sells batteries, including those incorporated in appliances, light means of transport or vehicles, by means of distance communication directly to end-users, that are either private households or other than private households, in a Member State, and is established in another Member State or in a third country

3.9**battery system**

energy storage device that includes cells or cell assemblies or battery pack(s) (3.7) as well as electrical circuits and electronics

Note 1 to entry: Examples of electronics are the BCU and contactors.

[SOURCE: ISO 12405-4:2018, 3.3]

3.10**cell electronics**

electronic device that collects and possibly monitors thermal or electric data of cells or cell assemblies and contains electronics for cell balancing, if necessary

Note 1 to entry: The cell electronics can include a cell controller. The functionality of cell balancing can be controlled by the cell electronics or by the BCU.

[SOURCE: ISO 12405-4:2018, 3.5]

3.11**cell monitoring circuit****CMC**

electronic circuits that monitor one or more cell parameters which must be maintained within certain limits, and take appropriate action if a parameter goes out of bounds, creating an unacceptable or dangerous situation