Electrically propelled mopeds and motorcycles - Safety requirements for conductive connection to an external electric power supply (ISO 18246:2023)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 18246:2023 sisaldab Euroopa standardi EN ISO 18246:2023 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 18246:2023 consists of the English text of the European standard EN ISO 18246:2023.
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 05.04.2023.	Date of Availability of the European standard is 05.04.2023.
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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EN ISO 18246

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English Version

Electrically propelled mopeds and motorcycles - Safety requirements for conductive connection to an external electric power supply (ISO 18246:2023)

Cyclomoteurs et motocycles à propulsion électrique - Exigences de sécurité relatives au couplage conductif à une station extérieure d'alimentation d'énergie externe (ISO 18246:2023)

Elektrisch angetriebene Mopeds und Motorräder - Sicherheitsanforderungen für die leitende Verbindung mit einer externen Energieversorgung (ISO 18246:2023)

This European Standard was approved by CEN on 24 March 2023.

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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 ISO 18246:2023) has been prepared by Technical Committee ISO/TC 22 "Road vehicles" in collaboration with 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 October 2023, and conflicting national standards shall be withdrawn at the latest by October 2023.

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 supersedes EN ISO 18246:2017.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

Endorsement notice

The text of ISO 18246:2023 has been approved by CEN as EN ISO 18246:2023 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 38, *Motorcycles and mopeds,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 301, *Electrically propelled road vehicles,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 18246:2015), which has been technically revised.

The main changes are as follows:

— terms and definitions have been updated;

— requirements for protection against electric shock (Clause 7) have been rewritten;

— descriptions for additional requirements and test procedure (Clause 9) have been simplified;

— requirements for the specific DC charging systems have been described in the Annexes (Annex B for IEC 61851-25 and Annex C for IEC TS 61851-3 series).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document prescribes basic safety requirements for electrically propelled mopeds and motorcycles, which are called electrically propelled vehicles (EVs), for simplicity, while connected to an external electric power supply. The safety requirements for off-board appliances/equipment are not described in this document.[1)]

This document does not standardize specific charging method in the body text. The requirements for specific DC charging systems are described in Annex B and Annex C.

Moped and motorcycle are defined in ISO 3833:1977, 3.4 and 3.5.

1) See IEC 60335-2-29, IEC 61851-25, and IEC TS 61851-3 series.

Electrically propelled mopeds and motorcycles — Safety requirements for conductive connection to an external electric power supply

1 Scope

This document specifies safety requirements for conductive connection of electrically propelled mopeds and motorcycles (referred to as the EVs) to external electric circuits.

NOTE 1 External electric circuits include external electric power supplies and external electric loads.

It does not provide comprehensive safety information for manufacturing, maintenance and repair personnel.

It applies only to on-board charging systems between the plug or vehicle inlet and RESS circuits.

NOTE 2 The requirements when not connected to external electric circuits are specified in the ISO 13063 series.

Requirements for bidirectional energy transfer DC to AC are under consideration and are not part of this document.

NOTE 3 The safety requirements for DC EV supply equipment where protection relies on electrical separation are specified in IEC 61851-25.

NOTE 4 The safety requirements for DC EV supply equipment where protection relies on double or reinforced insulation are specified in IEC TS 61851-3-1 and IEC TS 61851-3-2.

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.

ISO 6469-3:2021, *Electrically propelled road vehicles — Safety specifications — Part 3: Electrical safety*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 13063-3:2022, *Electrically propelled mopeds and motorcycles — Safety specifications — Part 3: Electrical safety*

ISO 17409:2020, *Electrically propelled road vehicles — Conductive power transfer — Safety requirements*

ISO 20653, *Road vehicles — Degrees of protection (IP code) — Protection of electrical equipment against foreign objects, water and access*

IEC 60664 SER, *Insulation coordination for equipment within low-voltage systems — All Parts*

IEC 61140:2016, *Protection against electric shock — Common aspects for installation and equipment*

IEC 61851-1:2017, *Electric vehicle conductive charging system — Part 1: General requirements*

IEC 61851-23, *Electric vehicle conductive charging system — Part 23: DC electric vehicle charging station*

IEC 61851-25:2020, *Electric vehicle conductive charging system — Part 25: DC EV supply equipment where protection relies on electrical separation*

IEC/TS 61851-3-1:—,[2)] *Electric Vehicles conductive charging system — Part 3-1: DC EV supply equipment where protection relies on double or reinforced insulation – General rules and requirements for stationary equipment*

IEC 62196-2, *Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles — Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories*

IEC/TS 62196-4, *Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles — Part 4: Dimensional compatibility and interchangeability requirements for d.c. pin and contact-tube accessories for class II or class III applications*

IEC 62196-6, *Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles — Part 6: Dimensional compatibility requirements for DC pin and contact-tube vehicle couplers for DC EV supply equipment where protection relies on electrical separation*

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 General

3.1.1
electrically propelled vehicle
EV
vehicle with one or more electric drive(s) for vehicle propulsion

Note 1 to entry: In the context of this document, the term electrically propelled vehicle (EV) includes only moped or motorcycle.

[SOURCE: ISO 13063-3:2022, 3.14, modified — Terminological entry "EV" and note 1 to entry are added.]

3.1.2
rechargeable energy storage system
RESS
rechargeable system that stores energy for delivery of electric energy for the electric drive

EXAMPLE Battery, capacitor, flywheel.

[SOURCE: ISO 13063-3:2022, 3.23]

3.1.3
removable RESS
RESS (3.1.2) that can be moved/removed from an *EV* (3.1.1) by hand (portable RESS) or with the assistance of an installation/device (mobile RESS)

[SOURCE: EN 50604-1:2016 +A1:2021, 3.18]

3.1.4
indoor use
intended for operation under normal ambient conditions in a building

[SOURCE: IEC 61851-1:2017, 3.6.1]

2) Under preparation. Stage at the time of publication: IEC 69/845/DTS:2022.