



BSI Standards Publication

E-Transporters

Part 2-1: Safety requirements and test methods for personal e-Transporters

National foreword

This British Standard is the UK implementation of EN IEC 63281-2-1:2024. It is identical to IEC 63281-2-1:2024.

The UK participation in its preparation was entrusted to Technical Committee PEL/69, Electric vehicles.

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

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Date	Text affected
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English Version

**E-Transporters - Part 2-1: Safety requirements and test methods
for personal e-Transporters
(IEC 63281-2-1:2024)**

E-Transporteurs - Partie 2-1: Exigences de sécurité et
méthodes d'essai relatives aux e-Transporteurs de
personnes
(IEC 63281-2-1:2024)

Elektrokleinstfahrzeuge - Teil 2-1 -
Sicherheitsanforderungen und Prüfverfahren für Personen-
Elektrokleinstfahrzeuge
(IEC 63281-2-1:2024)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

European foreword

The text of document 125/91/FDIS, future edition 1 of IEC 63281-2-1, prepared by IEC/TC 125 "e-Transporters" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63281-2-1:2024.

The following dates are fixed:

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- latest date by which the national standards conflicting with the (dow) 2027-03-14 document have to be withdrawn

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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60034-1	NOTE	Approved as EN 60034-1
IEC 60068-2-64	NOTE	Approved as EN 60068-2-64
IEC 60812:2018	NOTE	Approved as EN IEC 60812:2018 (not modified)
IEC 61000-6-1	NOTE	Approved as EN IEC 61000-6-1
IEC 61000-6-3	NOTE	Approved as EN IEC 61000-6-3
IEC 61025:2006	NOTE	Approved as EN 61025:2007 (not modified)
IEC 61508-1:2010	NOTE	Approved as EN 61508-1:2010 (not modified)
IEC 62133-1	NOTE	Approved as EN 62133-1
IEC 62133-2	NOTE	Approved as EN 62133-2
IEC 62368-1:2018	NOTE	Approved as EN IEC 62368-1:2020 (not modified) + A11:2020
IEC 63281-1:2023	NOTE	Approved as EN IEC 63281-1:2023 (not modified)
ISO 18243	NOTE	Approved as EN ISO 18243

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-11	-	Environmental testing - Part 2-11: Tests - Test Ka: Salt mist	EN IEC 60068-2-11	-
IEC 60068-2-14	2023	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN IEC 60068-2-14	2023
IEC 60068-2-75	-	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	-
IEC 60335-2-29	-	Household and similar electrical appliances - Safety - Part 2-29: Particular requirements for battery chargers	EN 60335-2-29	-
IEC 60335-2-114	2022	Household and similar electrical appliances - Safety - Part 2-114: Particular requirements for Personal-e-Transporters	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60695-11-10	-	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	-
ISO 2248	-	Packaging - Complete, filled transport packages - Vertical impact test by dropping	EN 22248	-
ISO 6742-1	-	Cycles - Lighting and retro-reflective devices - Part 1: Lighting and light signalling devices	-	-
ISO 6742-2	-	Cycles - Lighting and retro-reflective devices - Part 2: Retro-reflective devices	-	-
ISO 12100	2010	Safety of machinery - General principles for design - Risk assessment and risk reduction	EN ISO 12100	2010

EN IEC 63281-2-1:2024 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 13849-1	-	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	-
ISO 14878	2015	Cycles - Audible warning devices - Technical specification and test methods	-	-
-	-	Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use - Personal light electric vehicles (PLEV) - Requirements and test methods	EN 17128	2020

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

E-TRANSPORTERS –**Part 2-1: Safety requirements and test methods for
personal e-Transporters**

FOREWORD

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IEC 63281-2-1 has been prepared by IEC technical committee 125: e-Transporters. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
125/91/FDIS	125/93/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63281 series, published under the general title *e-Transporters*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

This document has been developed to cope with the rapidly evolving personal e-Transporters. Personal e-Transporters have become common in public spaces and roads, some of which can reach speeds of 25 km/h or even higher, and the applications and global market size are expected to grow significantly. In order to protect the safety of persons and public facilities, besides basic safety requirements, comprehensive safety requirements and test methods such as riding safety for people and for e-Transporters are also considered. At the time of writing, this document provides general safety requirements and corresponding test methods for personal e-Transporters, which are convenient for manufacturers and test departments to use.

Standardization of electrically powered transport devices covered by the following TCs are excluded from this document:

- IEC TC 69,
- ISO TC 149,
- ISO TC 22.

E-TRANSPORTERS –

Part 2-1: Safety requirements and test methods for personal e-Transporters

1 Scope

This document specifies safety requirements and test methods for personal e-Transporters.

This document is applicable to electrically powered personal e-Transporters (PeTs) which are used in private and public areas, where the speed control and/or the steering control is electric/electronic.

The PeT can have provisions for transport of cargo and can be for private or commercial (including sharing service) use.

This document is not applicable for electric vehicles (EVs), such as electrically power assisted cycles (EPACs), e-bikes, mopeds, motorcycles and passenger cars.

This document does not apply to:

- PeTs that are considered as toys;
- PeTs that are intended for competition;
- PeTs that are intended for medical care;
- PeTs that have a rated voltage of more than 100 V DC or 240 V AC;
- PeTs without an on-board driving operator.

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.

IEC 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-11, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-14:2023, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60335-2-29, *Household and similar electrical appliances – Safety – Part 2-29: Particular requirements for battery chargers*

IEC 60335-2-114:2022, *Household and similar electrical appliances – Safety – Part 2-114: Particular requirements for personal e-Transporters*