
Lahka motorna vozila za prevoz ljudi in blaga ter s tem povezanih naprav, za katere ni potrebna homologacija za uporabo v cestnem prometu - Lahka osebna električna vozila (PLEV) brez samouravnoveževalnega sistema in s krmilom - 1. del: Varnostne zahteve in preskusne metode

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) without self-balancing system and with handlebar - Part 1: Safety requirements and test methods

Nicht-typzugelassene leicht motorisierte Fahrzeuge für den Transport von Personen und Gütern und damit verbundene Einrichtungen - Persönliche leichte Elektrofahrzeuge (PLEV) - Anforderungen und Prüfverfahren

Véhicules électriques légers personnels (VELP) sans système d'auto-équilibrage et avec guidon - Exigences de sécurité et méthodes d'essai

Ta slovenski standard je istoveten z: prEN 17128-1

ICS:

43.120 Električna cestna vozila Electric road vehicles

oSIST prEN 17128-1:2026

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 17128-1

July 2026

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**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) without self-balancing system and with handlebar -
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den Transport von Personen und Gütern und damit
verbundene Einrichtungen - Persönliche leichte
Elektrofahrzeuge (PLEV) - Anforderungen und
Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 354.

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European foreword

This document (prEN 17128-1:2026) has been prepared by Technical Committee CEN/TC 354 “Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 17128:2020.

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

This document has been developed in response to an increased demand throughout Europe for light electrically powered vehicles of a type which are excluded from the scope of Regulation (EU) No 168/2013.

This has created the possibility to initiate a European standardization work for personal light electric vehicles. Such standardization will help manufacturers to ensure that safe products are put into the European market, will give to testing institutes common guidelines to assess the products, will initiate confidence to users and also be useful to convince member states to apply harmonized rules for the use of these vehicles with the aim decrease uncertainty due to different national regulation.

This document will not deal with topics like comfort of the user, quality of the product or ergonomic issues unless there is an impact on the safety of the user.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate in the drafting process of this document.

The working group will then work on the following parts:

- prEN 17128-1: *General requirements (electrical, EMC, marking, information for use)*
- prEN 17128-2: *Specific requirements for non-self-balancing vehicles with handlebar (electric kick scooters)*
- prEN 17128-3: *Specific requirements for non-self-balancing vehicles without handlebar (e-skates, e-longboards, ...)*
- prEN 17128-4: *Specific requirements for self-balancing vehicles (unicycles, onewheels, etc.)*
- prEN 17128-5: *Extra requirements for vehicles up to 45 km/h (FastPLEV)*
- prEN 17128-6: *Extra requirements for professional or intensive use applications (sharing, backpack delivery...)*
- prEN 17128-7: *Extra requirements for heavy duty vehicles (CargoPLEV scooters)*

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

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prEN 17128-1:2026 (E)**1 Scope**

This document provides specific safety requirements for the design and use of personal light electric vehicles totally or partially electrically powered from self-contained power sources for domestic and commercial use.

This document applies to personal light electric vehicles with maximum speed up to 25 km/h.

This document applies to personal light electric vehicles without self-balancing system totally or partially electrically powered from self-contained power sources having battery voltages up to 100 VDC, with or without an integrated battery charger with up to a 240 VAC input.

This document specifies safety requirements, test methods, marking and information relating to personal light electric vehicles to reduce the risk of injuries to both third parties and the user during intended use, i.e. when used as intended and under conditions of misuse that are reasonably foreseeable by the manufacturer.

This document provides specific prescription to assess the safety of personal light electric vehicles intended for leisure activities.

This document provides a recommended method to assess the performance of personal light electric vehicles totally or partially electrically on: total run time (battery run time).

This document does not apply to:

- vehicles that are considered as toys;
- vehicles with self-balancing system;
- vehicles with seating position;
- vehicles without handle bar;
- vehicles intended for competition;
- electrically powered assisted cycles (EPAC);
- vehicles and/or devices intend for use for medical care;
- electric vehicles having a maximum design speed above 25 km/h;
- vehicles having a rated voltage of more than 100 VDC or 240 VAC;
- vehicles without an on-board driving operator;
- vehicles intended for the transport of goods and other services.

NOTE 1 See D.2.

NOTE 2 The local regulation could limit the use of the vehicle to a speed lower than 25 km/h.

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.

EN ISO 3744:2026, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2025, including corrected version 2026-01)*

EN 2248:1992, *Packaging — Complete, filled transport packages — Vertical impact test by dropping (ISO 2248:1985)*

EN 60068-2-64:2008,¹ *Environmental testing — Part 2-64: Tests — Test Fh: Vibration, broadband random and guidance (IEC 60068-2-64:2008)*

EN 60068-2-75:2014,² *Environmental testing — Part 2-75: Tests — Test Eh: Hammer tests (IEC 60068-2-75:2014)*

EN 60335-1:2012,³ *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010)*

EN 60335-2-29:2021,⁴ *Household and similar electrical appliances — Safety — Part 2-29: Particular requirements for battery chargers (IEC 60335-2-29:2016)*

HD 60364-5-52:2011,⁵ *Low-voltage electrical installations — Part 5-52: Selection and erection of electrical equipment — Wiring systems (IEC 60364-5-52:2009)*

EN IEC 60384-14:2023,⁶ *Fixed capacitors for use in electronic equipment — Part 14: Sectional specification — Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (IEC 60384-14:2023)*

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

EN IEC 61558-1:2019,⁷ *Safety of transformers, reactors, power supply units and combinations thereof — Part 1: General requirements and tests (IEC 61558-1:2017)*

EN IEC 61558-2-16:2025, *Safety of transformers, reactors, power supply units and combinations thereof — Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units for general applications (IEC 61558-2-16:2021, modified)*

¹ As impacted by EN 60068-2-64:2008/A1:2019

² As impacted by EN 60068-2-75:2014/A1:2015

³ As impacted by EN 60335-1:2012/AC:2014, EN 60335-1:2012/A11:2014, EN 60335-1:2012/A13:2017, EN 60335-1:2012/A14:2019, EN 60335-1:2012/A1:2019, EN 60335-1:2012/A2:2019, EN 60335-1:2012/A15:2021 and EN 60335-1:2012/A16:2023

⁴ As impacted by EN 60335-2-29:2021/A1:2021 and EN 60335-2-29:2021/A11:2024

⁵ As impacted by HD 60364-5-52:2011/A11:2017, HD 60364-5-52:2011/A12:2022 and HD 60364-5-52:2011/A1:2025

⁶ As impacted by EN IEC 60384-14:2023/AC:2024-11 and EN IEC 60384-14:2023/A1:2025

⁷ As impacted by EN IEC 61558-1:2019/AC:2026-01

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EN 61851 (all parts),⁸ *Electric vehicle conductive charging system (IEC 61851, all parts)*

EN 60204-1:2018,⁹ *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2016)*

ISO 6742-2:2023, *Cycles — Lighting and retro-reflective devices — Part 2: Retro-reflective devices*

ISO 14878:2015, *Cycles — Audible warning devices — Technical specification and test methods*

EN IEC 62485 (all parts),¹⁰ *Safety requirements for secondary batteries and battery installations (IEC 62485, all parts)*

EN 62133:2017 (all parts),¹¹ *Secondary cells and batteries containing alkaline or other non-acid electrolytes — Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications (IEC 62133, all parts)*

ISO 6742-1:2023, *Cycles — Lighting and retro-reflective devices — Part 1: Lighting and light signalling devices*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN IEC 60335-1:2023,¹² *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2020)*

EN 50604-1:2016,¹³ *Secondary lithium batteries for light EV (electric vehicle) applications — Part 1: General safety requirements and test methods*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

prEN 50742:2025, *Safety of machinery — Protection against corruption*

⁸ EN IEC 61851-1:2019 (corrected by EN IEC 61851-1:2019/AC:2023-12)

EN IEC 61851-24:2024 (or EN 61851-24:2014- corrected by EN 61851-24:2014/AC:2015)

EN IEC 61851-21-2:2021 (or EN 61851-21-1:2017- corrected by EN 61851-21-1:2017/AC:2017-11)

EN 61851-23:2014 (corrected by EN 61851-23:2014/AC:2016-06)

EN IEC 61851-25:2021

⁹ As impacted by EN 60204-1:2018/A1:2025

¹⁰ EN IEC 62485-1:2018

EN IEC 62485-2:2018

EN IEC 62485-4:2018

EN IEC 62485-5:2021 (corrected by EN IEC 62485-5:2021/AC:2022-07)

EN IEC 62485-6:2021

¹¹ EN 62133-1:2017

EN 62133-2:2017 (amendment EN 62133-2:2017/A1:2021 corrected by EN 62133-2:2017/A1:2021/AC:2022-01)

¹² As impacted by EN IEC 60335-1:2023/A11:2023

¹³ As impacted by EN 50604-1:2016/A1:2021 and EN 50604-1:2016/A2:2025

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

public space

place that is accessible to the public whether it is in the public domain or privately owned

Note 1 to entry: Examples are roads, cycle tracks, sidewalks, public squares, parks, stations, airports

3.2

private space

place that is not accessible to the public

Note 1 to entry: Enclosed or fenced area.

3.3

driving power

electric power enabling the vehicle to move

3.4

personal light electric vehicle

PLEV

wheeled vehicle partially or totally motorized used for the transportation of one person in a public and/or private space

Note 1 to entry: For the purpose of this standard the word “vehicle(s)” is used.

3.5

intended use

supposed use according to the manufacturer’s specification, instructions and other information including communication

3.6

fully-assembled vehicle

vehicle fitted with all of the equipment required for its intended use

3.7

direct braking system

system actuated directly by the user (for example, a brake handle or a brake pedal)

3.8

indirect braking system

system actuated without voluntary action by the user (for example, braking activated by a gyroscopic system or through the detection of obstacles/anomalies)

prEN 17128-1:2026 (E)**3.9****parking device**

device to maintain the vehicle in a stationary position

3.10**braking device**

device to reduce the speed of the vehicle

3.11**locking mechanism**

assembly of components consisting of one or more locking device(s) and one or more operating device(s)

3.12**locking device**

mechanical component that maintains part(s) of the vehicle erected in the position of use or storage (e.g. latch(es), hooks, over centre lock...) which could be deactivated or activated by action(s) on the operating device

3.13**operating device**

part of the locking mechanism(s) designed to be activated by the user through one or several positive action(s)

3.14**folding or unfolding system**

mechanism enabling the vehicle to be folded or unfolded in order to change from the configuration of use (unfolded) to the configuration of storage (folded) and vice versa

3.15**no-load current**

current for which there is no torque on the driving wheel

3.16**electromagnetic compatibility**

ability of a vehicle or one of its electrical/electronic systems to function satisfactorily in its electromagnetic environment without producing intolerable electromagnetic disturbance to anything in that environment

3.17**electromagnetic disturbance**

electromagnetic phenomenon which may degrade the performance of a vehicle or one of its electronic/electrical systems

EXAMPLE An electromagnetic disturbance is for example an electromagnetic noise, an unwanted signal or a change in the propagation medium itself.

[SOURCE: EN 15194:2017+A1:2023, 3.10]

3.18**electromagnetic environment**

all electromagnetic phenomena existing in a given point