ICS 43.120, 43.150 SLOVENSKÁ TECHNICKÁ NORMA Január 2024

STN	**Bicykle** **Bicykle na elektrický pohon** **Bicykle EPAC**	**STN** **EN 15194+A1** 30 9075

Cycles - Electrically power assisted cycles - EPAC Bicycles

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/23

Obsahuje: EN 15194:2017+A1:2023

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15194:2017+A1

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ICS 43.120; 43.150 Supersedes EN 15194:2017

English Version

Cycles - Electrically power assisted cycles - EPAC Bicycles

Cycles - Cycles à assistance électrique - Bicyclettes EPAC

Fahrräder - Elektromotorisch unterstützte Räder - EPAC

This European Standard was approved by CEN on 28 May 2017 and includes Amendment approved by CEN on 22 August 2022.

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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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Ref. No. EN 15194:2017+A1:2023 E

Contents

Page

European foreword

This document (EN 15194:2017+A1:2023) has been prepared by Technical Committee CEN/TC 333 “Cycles”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by February 2024, and conflicting national standards shall be withdrawn at the latest by August 2025.

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 [A1] EN 15194:2017 [/A1].

[A1] EN 15194:2017+A1:2023 includes the following significant technical changes with respect to EN 15194:2017:

— 4.2.3 “Batteries”: reference to EN standard applicable to batteries of EPAC has been updated with the new latest edition, in line with specific request of National Authority to reinforce Machinery directive requirements,

— Annex A “Example of recommendation for battery charging” has been removed. [/A1]

This document includes Amendment 1 approved by CEN on 22 August 2022.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [/A1].

[A1] 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. [/A1]

This standard also includes all mechanic requirements applicable to the EPACs and is therefore a stand-alone document.

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

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

Introduction

This European Standard gives requirements for electrically power assisted cycles (EPAC).

This European Standard has been developed in response to demand throughout Europe. Its aim is to provide a standard for the assessment of electrically powered cycles of a type which are excluded from type approval by Regulation (EU) No 168/2013.

Due to the limitation of the voltage to 48 V d.c., there are no special requirements applicable to the EPAC in regard to protection against electrical hazards.

Following the completion of a risk analysis, the focus in this standard is on EPAC as bicycles for city and trekking. Folding bicycles are included.

This document is a type C standard as stated in EN ISO 12100. The machinery concerned and the extent to which hazards, hazardous situations and hazardous events covered are indicated in the scope of this document.

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

In real life situation an EPAC can fall over to the side causing the battery holder to break without damage to the battery case itself. While the standard contains a strength test for the battery an additional test is required for the situation described. This will be considered at the next revision. The battery holder needs to withstand this realistic and typical situation. Risk assessment carried out by the manufacturer should identify suitable measures to deal with this situation until it can be dealt with in the standard.

1 Scope

This European Standard applies to EPAC bicycles for private and commercial use with exception of EPAC intended for hire from unattended station.

This European Standard is intended to cover all common significant hazards, hazardous situations and events (see Clause 4) of electrically power assisted bicycles, when used as intended and under condition of misuse that are reasonably foreseeable by the manufacturer.

This European Standard is intended to cover electrically power assisted bicycles of a type which have a maximum continuous rated power of 0,25 kW, of which the output is progressively reduced and finally cut off as the EPAC reaches a speed of 25 km/h, or sooner, if the cyclist stops pedalling.

This European Standard specifies requirements and test methods for engine power management systems, electrical circuits including the charging system for the design and assembly of electrically power assisted bicycles and sub-assemblies for systems having a rated voltage up to and including 48 V d.c. or integrated battery charger with a nominal 230 V a.c. input.

This European Standard specifies safety and safety related performance requirements for the design, assembly, and testing of EPAC bicycles and subassemblies intended for use on public roads, and lays down guidelines for instructions on the use and care of such bicycles.

This European Standard applies to EPAC bicycles that have a maximum saddle height of 635 mm or more and that are intended for use on public roads.

This European Standard is not applicable to EPACs which are manufactured before the date of its publication as EN.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 22248:1992, *Packaging — Complete, filled transport packages — Vertical impact test by dropping (ISO 2248:1985)*

〚A1〛 EN 50604-1:2016, *Secondary lithium batteries for light EV (electric vehicle) applications – Part 1: General safety requirements and test methods*

EN 50604-1:2016/A1:2021, *Secondary lithium batteries for light EV (electric vehicle) applications – Part 1: General safety requirements and test methods* 〚A1〛

EN 55012:2007, *Vehicles, boats and internal combustion engines — Radio disturbance characteristics — Limits and methods of measurement for the protection of on-board receivers (CISPR 12:2007)*

〚A1〛 EN IEC 55016-1-1:2019, *Specification for radio disturbance and immunity measuring apparatus and methods — Part 1-1: Radio disturbance and immunity measuring apparatus — Measuring apparatus (CISPR 16-1-1:2019)* 〚A1〛

〚A1〛 EN 55025:2017, *Vehicles, boats and internal combustion engines — Radio disturbance characteristics —Limits and methods of measurement for the protection of on-board receivers (CISPR 25:2016)* 〚A1〛

EN 60034-1:2010, *Rotating electrical machines — Part 1: Rating and performance (IEC 60034-1:2010, modified)*

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

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

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

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 61000-4-2:2009, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test (IEC 61000-4-2:2008)*

〉A1〈 EN ISO 7010:2020, *Graphical symbols — Safety colours and safety signs — Registered safety signs (ISO 7010:2019)* 〉A1〈

EN ISO 11243:2016, *Cycles — Luggage carriers for bicycles — Requirements and test methods (ISO 11243:2016)*

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

EN ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2015)*

〉A1〈 EN ISO 13849-2:2012, *Safety of machinery – Safety-related parts of control systems – Part 2: Validation (ISO 13849-2:2012)* 〉A1〈

ISO 5775-1:2014, *Bicycle tyres and rims — Part 1: Tyre designations and dimensions*

〉A1〈 ISO 5775-2:2021, *Bicycle tyres and rims — Part 2: Rims* 〉A1〈

ISO 6742-1:2015, *Cycles -- Lighting and retro-reflective devices — Part 1: Lighting and light signalling devices*

ISO 6742-2:2015, *Cycles — Lighting and retro-reflective devices — Part 2: Retro-reflective devices*

ISO 9633:2001, *Cycle chains — Characteristics and test methods*

ISO 11451-1:2015, *Road vehicles — Vehicle test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 1: General principles and terminology*

ISO 11452-1:2015, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 1: General principles and terminology*

〉A1〈 ISO 11452-2:2019, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 2: Absorber-lined shielded enclosure* 〉A1〈

ISO 11452-3:2016, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 3: Transverse electromagnetic (TEM) cell*

〉A1〈 ISO 11452-4:2020, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 4: Harness excitation methods* 〉A1〈

ISO 11452-5:2002, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 5: Stripline*