Cycles - Electrically power assisted cycles - EPAC Bicycles CONSOLIDATED TEXT

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15194:2009+A1:2011 sisaldab Euroopa standardi EN 15194:2009+A1:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 15194:2009+A1:2011 consists of the English text of the European standard EN 15194:2009+A1:2011.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 30.11.2011.	Date of Availability of the European standard is 30.11.2011.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 43.120, 43.150

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Cycles - Electrically power assisted cycles - EPAC Bicycles

Cycles - Cycles à assistance électrique - Bicyclettes EPAC

Fahrräder - Elektromotorisch unterstützte Räder - EPAC-Fahrräder

This European Standard was approved by CEN on 22 November 2008 and includes Amendment 1 approved by CEN on 8 October 2011.

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Foreword

This document (EN 15194:2009+A1:2011) 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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 8 October 2011.

This document supersedes EN 15194:2009.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟨A1⟩ ⟨A1⟩.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard gives requirements for electric 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 Directive 2002/24/EC.

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

EPACs are vehicles which use the same traffic areas as cars, lorries and motorcycles, which is predominantly the street. For this reason the products concerning EMC-testing have the same basic conditions. Chapter 8 of the EC Directive 97/24 contains a very high value concerning the immunity test of electronic components with 30 V/m, nevertheless based on the application area it comes up of the implementation. Manipulation of the electronic system of EPAC by other source of interference in the scope of the public road traffic could signify considerable risks of safety regulations for the user of EPAC. The standards EN 61000-6-1 as well as EN 61000-6-3 are standards for appliances in residential, commercial and light-industrial environments which do not reach the values for the EMC immunity-test necessary in the road traffic area. In these standards the EMC immunity of the electric and electronic systems will be tested only with 3 V/m, which is the tenth part of the requirements in chapter 8 of the EC Directive 97/24. These standards are unsuitable to obtain the urgent and necessary security level.

1 Scope

This European Standard is intended to cover electrically power assisted cycles 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 vehicle reaches a speed of 25 km/h, or sooner, if the cyclist stops pedalling.

This European Standard specifies safety requirements and test methods for the assessment of the design and assembly of electrically power assisted bicycles and sub-assemblies for systems using battery voltage up to 48 VDC or integrated a battery charger with a 230 V input.

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

2 Normative references

The following referenced documents are indispensable for the application 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 14764:2005, *City and trekking bicycles — Safety requirements and test methods*

EN 55014-1, *Electromagnetic compatibility — Requirements for household appliances, electric tools and similar apparatus — Part 1: Emission*

EN 55014-2, *Electromagnetic compatibility — Requirements for household appliances, electric tools and similar apparatus — Part 2: Immunity product family standard*

EN 60034-1, *Rotating electrical machines — Part 1: Rating and performance*

EN 61000-3-2, *Electromagnetic compatibility (EMC) — Part 3-2: Limits — Limits for harmonic current emissions (equipment input current ≤ 16A per phase)*

EN 61000-3-3, *Electromagnetic compatibility (EMC) — Part 3-3: Limits — Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A*

ISO 2575, *Road vehicles — Symbols for controls, indicators and tell tales*

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

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

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

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

ISO 11452-4, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 4: Bulk current injection (BCI)*

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

IEC 60068-2-75:1998, *Environmental testing — Part 2: Tests — Test Eh: Hammer tests*

IEC 60364-5-52:2001, *Electrical installations of buildings — Part 5-52: Selection and erection of electrical equipment — Wiring systems*

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

CISPR 12, *Vehicles, boats and internal combustion engines — Radio disturbance characteristics — Limits and methods of measurement for the protection of off-board receivers*

CISPR 25:2008, *Vehicles, boats and internal combustion engines — Radio disturbance characteristics — Limits and methods of measurement for the protection of on-board receivers*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
cycle
vehicle that has at least two wheels and is propelled solely or mainly by the muscular energy of the person in that vehicle, in particular by means of pedals

3.2
bicycle
two-wheeled cycle

3.3
fully assembled bicycle
bicycle fitted with all the components necessary for its intended use

3.4
electrically power assisted cycle
EPAC
cycle, equipped with pedals and an auxiliary electric motor, which cannot be propelled exclusively by means of this auxiliary electric motor

3.5
no load current point
current for which there is no torque on the driving wheel

3.6
full discharge of the battery
point at which the battery does not deliver any power/energy to the motor, according to the manufacturer's specifications

3.7
cut off speed
speed reached, by the EPAC, at the moment the current has dropped to zero or to the no load current value

3.8
maximum assisted speed by design
maximum design speed up to which assistance is provided

3.9
electromagnetic compatibility
ability of a vehicle or one of its electrical/electronic systems to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbance to anything in that environment