AS 15194:2016

Australian STANDARD

Cycles—Electrically power assisted cycles—EPAC Bicycles (also known as pedelecs) (EN 15194:2009, MOD)

STANDARDS Australia

This Australian Standard® was prepared by Committee CS-110, Bicycles and Bicycle Accessories. It was approved on behalf of the Council of Standards Australia on 7 June 2016. This Standard was published on 17 October 2016.

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- Association of Accredited Certification Bodies
- Australian Chamber of Commerce and Industry
- Australian Competition and Consumer Commission
- Austroads
- Bicycle Industries Australia
- Bicycle NSW
- Centre for Accident Research and Road Safety—Queensland
- CHOICE
- Consumers Federation of Australia
- Cycling Australia
- Ministry of Business, Innovation and Employment, NZ
- Monash Injury Research Institute
- National Retail Association
- Retail Cycle Traders Australia
- Royal Australian College of Surgeons
- Transport for NSW
- University of New South Wales

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

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PREFACE

This Standard was prepared by the Standards Australia Committee CS-110, Bicycles and Bicycle Accessories.

The objective of this Standard is to specify requirements for electrically power assisted cycles—EPAC bicycles (also known as pedelecs).

This Standard is an adoption with national modifications and has been reproduced from EN 15194:2009, *Cycles—Electrically power assisted cycles—EPAC Bicycles*, and has been varied as indicated to take account of Australian conditions. EN 15194:2009 incorporates the Amendment 1 (2011). The modifications are specified in Appendix ZZ.

As this Standard is reproduced from a European Standard, the following applies:

(a) In the source text 'this European Standard' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS	
60068	Environmental testing	60068	Environmental testing
60068-2-75	Part 2-75: Tests—Test Eh: Hammer tests	60068.2.75	Part 2.75: Tests—Test Eh: Hammer tests
60529	Degrees of protection provided by enclosures (IP Code)	60529	Degrees of protection provided by enclosures (IP Code)
CISPR		AS/NZS CISPR	
12	Vehicles, boats and internal combustion engines—Radio disturbance characteristics—Limits and methods of measurement for the protection of off-board receivers	12	Vehicles, boats and internal combustion engines—Radio disturbance characteristics—Limits and methods of measurement for the protection of off-board receivers
25	Vehicles, boats and internal combustion engines—Radio disturbance characteristics—Limits and methods of measurement for the protection of on-board receivers	25	Vehicles, boats and internal combustion engines—Radio disturbance characteristics—Limits and methods of measurement for the protection of on-board receivers

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex or appendix to which they apply. A 'normative' annex or appendix is an integral part of a Standard, whereas an 'informative' annex or appendix is only for information and guidance.

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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.

AUSTRALIAN STANDARD

Cycles—Electrically power assisted cycles—EPAC Bicycles (also known as pedelecs) (EN 15194:2009, MOD)

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*