

Australian/New Zealand Standard<sup>®</sup>

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**Pedal cycle helmets**

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## AS/NZS 2063:1996

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CS/14, Safety Helmets for Sport and Recreation. It was approved on behalf of the Council of Standards Australia on 25 January 1996 and on behalf of the Council of Standards New Zealand on 19 February 1996. It was published on 5 May 1996.

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Australian Brain Foundation  
Australian Chamber of Commerce and Industry  
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New South Wales TAFE Commission  
New Zealand Helmet Testing Interests  
New Zealand Manufacturers Federation  
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Australia Post  
Australian Cycling Federation  
Bicycle Industries & Traders Association  
Child Accident Prevention Foundation of Australia  
Independent Testing Interest  
NHMRC Road Accident Research Unit  
Queensland Department of Transport  
Queensland University of Technology  
Retail Cycle Traders, Australia  
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*This Standard was issued in draft form for comment as DR 95097 and DR 95098.*

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PUBLISHED JOINTLY BY:

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## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CS/14 on Safety Helmets for Sport and Recreation, and Subcommittee CS/14/2 on Pedal Bicycle Helmets to supersede AS 2063.1—1986 (in part), AS 2063.2—1990 and NZS 5439:1986.

AS 2063.1 was based on the Standard for protective helmets for motor vehicle users but the performance requirements were reduced to give the maximum protection, given the restrictions on bulk and mass. Part 1 of the Standard covered only requirements affecting the ability of a helmet to safely mitigate a blow to the head. Specific requirements for pedal cycling and horse riding were covered by separate parts of the Standard. The major change in the second edition of AS 2063.1 was the requirement that helmets for pedal cyclists comply also with AS 2063.2.

The second edition of AS 2063.2 was an updated version of the previous edition, prepared at the request of consumer organizations and the State and Federal Governments as an intermediate step towards a complete re-evaluation of the performance and design requirements of helmets for pedal cyclists. It replaced the requirements for a penetration test with a more meaningful test which assesses the capability of a helmet to distribute the energy load of an impact.

As acceptance of the need to wear a helmet when participating in different activities increased, the structure of the AS 2063 series of Standards started to cause confusion to the end users. The uses for which a helmet that met the requirements of AS 2063.2 was appropriate, as compared with a helmet that met the requirements of AS 2063.3, was not necessarily apparent to users. Work on developing a helmet for cricketers also showed that a helmet which met the requirements of AS 2063.1 did not necessarily provide suitable protection for general sporting activities. It was decided that it would be clearer to separate the requirements for helmets for different activities into individual Standards, with distinct numbers.

This Standard therefore combines the relevant requirements from AS 2063, Parts 1 and 2 to give a single Standard which sets out the requirements for pedal cycle helmets. It includes a clarification of the stability test given in the previous edition of AS 2063.2, and allows for an increase in the range of helmet sizes tested as a result of the increased range of headforms in the revision of AS 2512.1, *Methods of testing protective helmets*, Method 1: *Definitions and headforms*.

In this edition, the requirements regarding the attachments of components and internal projections have been changed from mandatory to advisory. This does not indicate a reduction in the importance of compliance with those requirements. It merely acknowledges the absence of an encompassing test method which could address all possible circumstances and hazards, and therefore be used to verify compliance with the requirements.

Consideration is being given to lowering the test line specified in AS 2512.1 in the next edition. Consideration is also being given to changing the Standard to require that helmet peaks be required to be flexible or detachable. Concern has been expressed that rigid peaks may cause rotational injuries to the head or neck during some falls, and facial injuries if they shatter or break off. However, lack of information on the benefits and hazards of peaks for different sports has led to difficulty in determining appropriate limits for size and flexibility. While further information is sought on peaks generally, it is expected that the Committees looking at design requirements for particular sports will be working towards the specification of suitable peaks for each activity.

It is likely that further Standards for various specific sporting activities will be needed in the future. Until they are developed, helmet manufacturers should consult with the appropriate sporting bodies to ensure that a helmet meets the design requirements of the sport or sports for which it is intended to be used.

Committee CS/14 considers that the requirements for eye protectors and visors for use when bicycling should be specified, and has referred the matter to the Committee responsible for AS 1609, *Eye protectors for motorcyclists and racing car drivers*.

This Standard does not specify helmet colour. However, to increase conspicuity on the road, it is recommended that helmets for pedal cyclists be manufactured in white or in colours within the yellow or orange spectrum.

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

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Originated in Australia as part of AS 2063— 1977.  
Previous Australian edition AS 2063.2— 1990.

Originated in New Zealand as NZS 5439:1986.

AS 2063.2— 1990, NZS 5439:1986, and part of  
AS 2063.1— 1986, jointly revised and redesignated as  
AS/NZS 2063:1996.

Incorporating:  
Amdt 1—1996

## FOREWORD

Helmets which comply with this Standard are considered suitable for activities where the wearer is likely to be thrown or to fall from a height, particularly while mobile. They are not, however, to be used by motor cyclists on public roads or in other public places where the various State and Territory Traffic Regulations require the use of helmets complying with AS 1698—1988, *Protective helmets for vehicle users*, nor are they to be used for high-speed sports such as motor cycle racing and car racing.

Occupants of passenger cars seeking personal head protection might find helmets complying with AS 1698 too heavy and bulky for everyday use, whereas helmets complying with this Standard might well be acceptable. The degree of protection provided, however, could not realistically be as great as that provided for in AS 1698 even though the impact forces might be similar.

The protection given by a helmet depends on the circumstances of the accident and the wearing of a helmet cannot always prevent death or long-term disability. A proportion of the energy of an impact is absorbed by the helmet, thereby reducing the force of the blow sustained by the head. The structure of the helmet may be damaged in absorbing this energy and any helmet which sustains a severe blow should be replaced even if damage is not apparent.

To achieve the performance of which it is capable and to ensure stability on the head, a helmet should be as closely fitting as possible consistent with comfort, and it must be securely fastened, with the retaining strap under tension at all times.

## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard****Pedal cycle helmets**

**1 SCOPE** This Standard specifies the basic performance requirements for impact energy attenuation, load distribution, strength and effectiveness of the retention system and its attachment points, ventilation, and peripheral vision clearance for lightweight protective helmets intended to mitigate the adverse effects of a blow to the head. Marking requirements are also specified.

It applies to helmets for all cycling activities except BMX racing for which cyclists may require more extensive protection.

## NOTES:

- 1 A helmet complying with this Standard may incorporate special features designed to suit its use in specific activities.
- 2 Requirements for helmets for horse riders are specified in AS 2063.1 and .3.
- 3 Requirements for helmets for motor vehicle users are specified in AS 1698.

**2 OBJECTIVE** The objective of this Standard is to provide helmet wearers with lightweight helmets that provide protection against, and minimize the severity of, head injury from hazards associated with pedal cycling.

**3 REFERENCED DOCUMENTS** The following documents are referred to in this Standard:

## AS

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|----------|---|
| 1609     | Eye protectors for motor cyclists and racing car drivers  |
| 1698     | Protective helmets for vehicle users  |
| 2063     | Lightweight protective helmets (for use in pedal cycling, horse riding and other activities requiring similar protection) |
| 2063.1   | Part 1: Basic performance requirements  |
| 2063.3   | Part 3: Helmets for horse riders  |
| 2342     | Development, testing and implementation of information and safety symbols and symbolic signs                              |
| 2512     | Methods of testing protective helmets   |
| 2512.1*  | Method 1: Definitions and headforms   |
| 2512.2   | Method 2: General requirements for the conditioning and preparation of test specimens and laboratory conditions           |
| 2512.3.1 | Method 3.1: Determination of impact energy attenuation—Helmet drop test   |
| 2512.5   | Method 5: Determination of strength of retention system and its attachment points   |
| 2512.6   | Method 6: Measurement of peripheral vision clearance  |
| 2512.7   | Method 7: Determination of stability of lightweight protective helmets  |

## AS/NZS

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| 2512   | Methods of testing of protective helmets                   |
| 2512.1 | Method 1: Definitions and headforms                        |
| 2512.9 | Method 9: Determination of resistance to localized loading |

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\* At the time this Amendment was issued AS 2512.1—1984 and AS/NZS 2512.1:1996 were both current.





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