

1698

AS 1698-1988

Amendment 1 - November 1984.  
" 2 - Jan 1986

for revision see DR 83239 of Nov 1987

see also DR 82010 of Jan 1982

AS 1698-1980  
UDC 614.891.1:796.7

Entered as NZS 5430:1983

Draft New Zealand Amendment see DZ 5430/A2 of April 1986

# Australian Standard 1698—1980

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## PROTECTIVE HELMETS FOR VEHICLE USERS



STANDARDS ASSOCIATION OF AUSTRALIA

*Incorporated by Royal Charter*



THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Chamber of Commerce  
Autocycle Union of Victoria  
Confederation of Australian Industry  
Confederation of Australian Motor Sport  
Department of Motor Transport N.S.W.  
Department of Transport  
Police Departments  
Road Traffic Board, South Australia  
Royal Melbourne Institute of Technology

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This standard, prepared by Committee AU/12, Protective Helmets for Motor Cyclists, was approved on behalf of the Council of the Standards Association of Australia on 27 August 1980, and was published on 1 December 1980.

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**AUSTRALIAN STANDARD**

# **PROTECTIVE HELMETS FOR VEHICLE USERS**

**AS 1698—1980**

First published .....	1974 ✓
Second edition .....	1980

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## PREFACE

This edition of AS 1698 was prepared by the Association's Committee on Protective Helmets for Motor Cyclists to supersede the 1974 edition.

The previous standard AS E33, Protective Helmets for Motor Cyclists, was an endorsement of BS 2001:1956, and AS E43, Protective Helmets for Racing Motor Cyclists, was based on BS 1869:1960. When BS 2001 was revised in 1972 it was decided to revise the Australian standards, and AS 1698—1974 was published. That standard was in fact based on ANSI Z90.1—1971.

Amendments to AS 1698 were issued in 1977 and 1978, and the committee had prepared a third. This edition incorporates the two amendments and what would have been the third amendment. This is not the result of a general revision, and the changes are detailed in the Foreword.

ANSI Z90.1—1971, Protective Headgear for Vehicular Users, is now revised, and the committee expects to undertake a complete revision of AS 1698 in the light of the new standard.

The committee will also take into account work on revision of ISO 1511, Protective Helmets for Road Users.

This standard requires reference to the following standards:

- |           |                                   |
|-----------|-----------------------------------|
| AS 1609   | Automotive Eye Protectors         |
| SAE J211b | Instrumentation for Impact Tests. |

AS 1698/AMDT 1/1984-11-09

STANDARDS ASSOCIATION OF AUSTRALIA  
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AMENDMENT No 1

to

AS 1698—1980

PROTECTIVE HELMETS FOR VEHICLE USERS

REVISED TEXT

*SUMMARY:* This amendment applies to Clause 3.5 and Clause 3.6.

*RATIONALE:* The current fashion of wholly black helmets has led to the painting of helmets after purchase in contravention of the requirements for conspicuity as currently specified in Clause 3.5. SAA Committee AU/12 considers that, notwithstanding some loss of visibility for wholly black helmets, the possibility of deleterious effects upon the material of the shell of such post-purchase painting should be averted by the deletion of that requirement. However, the committee recommends that a helmet be of a colour or colour pattern that enhances its visibility.

Published on 9 November 1984.

14 NOV 1984

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AS 1698/Amdt 2/1986-01-06

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**AMENDMENT No 2**  
to  
**AS 1698—1980**  
**PROTECTIVE HELMETS FOR VEHICLE USERS**

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**REVISED TEXT**

The 1980 edition of AS 1698 which was amended in November 1984 is further amended as follows; the amendment should be inserted in the appropriate place.

**SUMMARY:** The following sections of the standard are covered by this amendment: Clause 3.3.1(b), 3.3.2, and 5.2(a).

Published on 6 January 1986.

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## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard  
for  
PROTECTIVE HELMETS FOR VEHICLE USERS****FOREWORD**

During preparation of AS 1698—1974 as derived from AS E33 and AS E43, the committee agreed that no useful purpose was served in having a lower grade of helmet, and decided to adopt the highest grade available and to make this grade equally applicable to all vehicle users, including racing car drivers and racing motor cyclists, in situations which require the use of a type of helmet as specified in the standard.

The primary purpose of the standard is to provide a specification for protective helmets for on-road motor cyclists, although other users may gain appropriate protection in other situations. The standard also provides a basis for helmets used in motor sports where speed is a determining factor. Helmets designed specially for motor sport are available, and these may include features, including extra strength, which are not mandatory in this standard but which are desirable for certain activities. It is not expected that these features will generally conflict with the requirements of this standard. Extra features are likely to increase the mass and/or bulk of the helmet, and the committee considers that AS 1698 should not impose these disadvantages at this time.

Another standard AS 2063, General Purpose Protective Helmets, may be more appropriate where conditions of use dictate that a helmet is acceptable only if it is of low mass and compact.

The committee decided to use ANSI\* Z90.1—1971 (as amended) (similar to FMVSS† 218) as a basis, as this specifies a greater area of protection, greater resistance to penetration, greater retention strength, and a preferred test method. The minor differences in AS 1698—1974 were not intended to result in inconsistency with ANSI Z90.1.

The committee decided to include the words 'Vehicle Users Helmet' in the permanent marking on the helmet, because of the difficulties which had been experienced by statutory authorities regarding proof of compliance of motor cyclists' helmets with the standard.

The changes introduced by this partial revision are to remove reference to peaks, be more specific on projections and shell openings, delete the flammability test, and make minor editorial corrections. The flammability test was judged to be unnecessary in view of the nature of materials now used for helmets and the low probability of exposure to fire, but part of the committee favoured a requirement that materials used for helmet shells should not support flame propagation.

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\*ANSI—American National Standards Institute.

†FMVSS—Federal Motor Vehicle Safety Standard (U.S.A.).

## SPECIFICATION

**1 SCOPE.** This standard specifies performance criteria and test requirements for protective headgear for vehicle users, as designed to mitigate the adverse effect of a blow on the head. The standard is written with particular reference to motor cyclists, but is equally applicable to all vehicle users, including racing car drivers and racing motor cyclists under Australian conditions.

The standard includes tests for impact attenuation, penetration resistance, strength of the retention system and its attachments, and peripheral vision.

Specific marking requirements are also included.

**2 DEFINITIONS.** For the purposes of this standard, the following definitions apply:

**2.1 Protective helmet**—a device worn on the head, designed to mitigate the adverse effects of a blow to the head within a specified area. Hereinafter referred to as a 'helmet'.

**2.2 Shell**—the hard smooth material that provides the general outer form of the helmet.

**2.3 Retention system**—the complete assembly by means of which the helmet is retained in position on the head during use.

**2.4 Chin strap**—a strap of material which passes under the wearer's chin to retain the helmet in position.

**2.5 Basic plane**—a plane through the centre of the right and left ear openings and the lower edge of the eye sockets (Fig. 1) and represented on a reference headform (Fig. 2) or test headform.

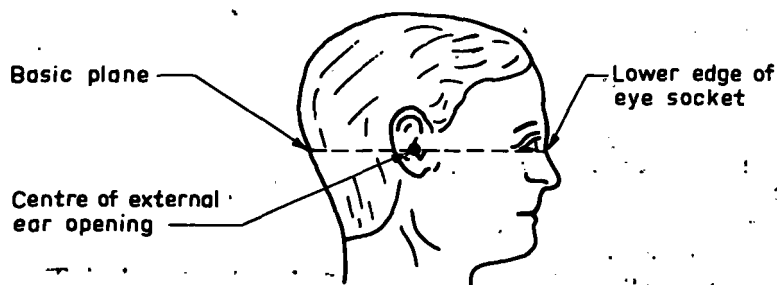


Fig. 1. BASIC PLANE

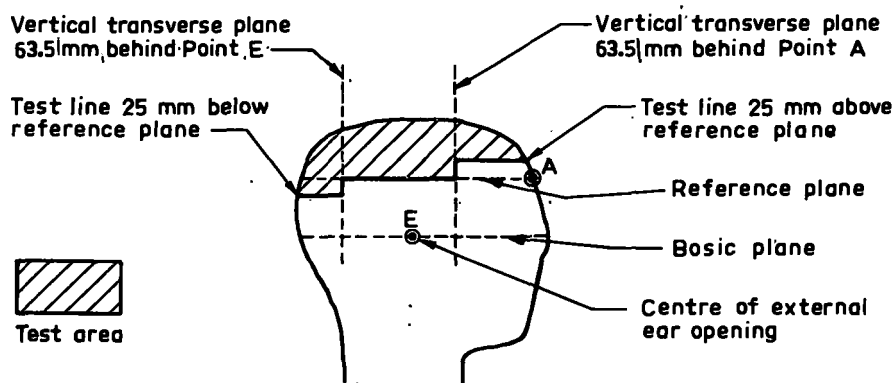


Fig. 2. REFERENCE HEADFORM