

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Joint Amendment No. 1
to
AS/NZS 4066:1992
Eye protectors for racquet sports

REVISED TEXT

The 1992 edition of AS/NZS 4066 is amended as follows; the amendment should be inserted in the appropriate place.

SUMMARY: This Amendment applies to Table 1.

Published on 11 July 1994.

Approved for publication in New Zealand on behalf of the Standards Council of New Zealand on 20 June 1994.

AMDT
No. 1
JULY
1994

Page 9 Table 1

Delete existing Table 1 and substitute new Table 1.

Type of lens	Luminous transmittance τ_c %		Mean transmittance %	
	Min.	Max.	Erythema ultraviolet Max.	Near-ultraviolet Max.
Untinted	85	—	—	—
Outdoor untinted	85	—	1	25
Tinted	8	50	1	τ_c or 25*

* Whichever is less.

AS/NZS 4066:1992

Australian/New Zealand Standard

Eye protectors for racquet sports

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AS/NZS 4066:1992

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CS/84, Protective Eyewear for Sport. It was approved on behalf of the Council of Standards Australia on 6 August 1992 and on behalf of the Council of Standards New Zealand on 23 October 1992. It was published on 16 November 1992.

The following interests are represented on Committee CS/84:

Australasian College of Occupational Medicine
Australian Chamber of Manufactures
Australian Federation of Consumer Organizations
Australian Optometrical Association
Australian Sports Commission
Confederation of Australian Industry
Consumer Affairs Bureau, Qld
Department of Sport and Recreation, Vic.
Department of Sport, Recreation and Racing, N.S.W.
Federal Bureau of Consumer Affairs
Ministry of Sport and Recreation, W.A.
New Zealand Association of Optometrists
Optical Distributors and Manufacturers Association of Australia
Royal Australian College of Ophthalmologists
Squash Australia
University of Auckland Department of Optometry
University of New South Wales School of Optometry

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This Standard was issued in draft form for comment as DR 91297.

AS/NZS 4066:1992

Australian/New Zealand Standard

Eye protectors for racquet sports

First published as Joint Standard
AS/NZS 4066:1992.

PUBLISHED JOINTLY BY:

STANDARDS AUSTRALIA
(Standards Association of Australia) 80 Arthur Street, North Sydney
NSW, Australia

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PREFACE

This Standard was prepared by the Joint Australian/New Zealand Standards Committee on Protective Eyewear for Sport. It is based on the Canadian Standards Association P400-M1982—*Racquet Sports Eye Protection*, together with ASTM D1003 1988, *Test method for haze and luminous transmittance of transparent plastics*.

This Standard requires that eye protectors for racquet sports include a lens. Eye protectors which are lensless, and which offer eye protection in the form of a narrow vision slit are available. However, experiments have shown that if the viewing slit is wider than ~13 mm, a squash ball in play can deform sufficiently to pass (at least partially) through the slit, and thus damage the eyeball behind. A slit narrow enough to offer protection from a squash ball (less than ~13 mm) would offer an insufficient field of view for use in most racquet sports.

Experience in Canada has shown the effectiveness of lensed eye guards for racquet sports such as squash. While the number of people in that country who play such sports increases each year, the number of eye injuries caused by racquet sports has been decreasing since 1983-1984.

The Canadian Standards Association (CSA) passed a preliminary racquet sports eye protector Standard in 1982 (P400-M), and the American Society for Testing and Materials (ASTM) passed their Standard F803 in 1983. These racquet sports Standards were later revised, and eye protectors certified to the CSA or ASTM Standards became available in 1986-87. Since then, no significant eye injury has been recorded in Canada for a person playing racquet sports while wearing one of those eye protectors.

The impact test in this Standard uses the impact of a squash ball as a 'worst case' test, as it offers the highest energy impact of the most common racquet sports (squash, tennis and badminton) for which eye injury has been reported in this country. The Committee intends to review this coverage as future eye injury trends become apparent.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Eye protectors for racquet sports

1 SCOPE This Standard specifies requirements for eye protectors designed for use by players of racquet sports, such as squash, tennis, badminton and racquetball. It deals with materials, construction, attachment, optical properties, testing, labelling and marking. Requirements for eye protectors for industrial applications, eye protectors for motor cyclists and eye protectors for indoor and outdoor cricket are not included.

NOTES:

- 1 Guidance on the requirements for prescription racquet sports eye protectors is given in Appendix A.
- 2 Requirements for eye protectors for industrial applications are specified in AS/NZS 1337.
- 3 Requirements for eye protectors for motor cyclists and racing car drivers are specified in AS 1609.

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

AS/NZS

1337 Eye protectors for industrial applications

2228 Spectacles

2228.1 Part 1: Spectacle lenses

AS

1609 Eye protectors for motor cyclists and racing car drivers

1680 Interior lighting

1681.1 Part 1: General principles and recommendations

3 DEFINITIONS For the purpose of this Standard, the definitions below apply.

3.1 Eye protector—a device which includes a lens or lenses worn in front of the eyes and intended to provide protection for the eyes.

3.2 Eye shield—a device which includes a transparent visor supported in front of the face to shield the eyes.

3.3 Fields of vision—projection outward of all retinal points (the nervous layer of the eye) at which visual sensations can be initiated.

3.4 Frame—a device for supporting a lens or lenses before the eyes.

3.5 Goggles—an eye protector fitting the contour of the face and held in position by an adjustable headband.

3.6 Haze—the percentage of transmitted light that, in passing through the specimen, deviates from the incident beam by forward scattering.

3.7 Headform—a headform with ears, nose and defined orbit area or 'standard anatomical head' suitable for use as a test support for eye protectors. Typical dimensions of a medium-sized standard anatomical head are given in Figure 1, for guidance only.

3.8 Inferiorly—refers to an angle in the vertical plane measured downwards from the horizontal.

3.9 Isopter—an area of the visual field, within which a target of a given size is visible.

3.10 Lens—the transparent component of the eye protector through which the wearer sees.

NOTE: In this Standard, the term 'lens' is not restricted to its optical sense.

3.11 Luminous transmittance—the ratio of the luminous flux transmitted by the lens to the incident luminous flux.

3.12 Nasally—refers to an angle in the horizontal plane measured from the centre to the left of the right eye and from the centre to the right of the left eye.

3.13 Overglasses—eye protectors which are intended for use over prescription spectacles.

3.14 Prismatic power—the property of a lens to displace the image of an object expressed as 100 times the ratio of the apparent displacement of the object to the distance of the object from the lens.

NOTES:

- 1 Prismatic power is a dimensionless quantity.
- 2 The former unit of measurement of prismatic power, i.e. prism dioptre, is numerically equal and is used in ophthalmology and optometry.