AS/NZS 1337.4:2004
BS EN 207:1999

Australian/New Zealand Standard™

Personal eye-protection

Part 4: Filters and eye-protectors against laser radiation (laser eye-protectors)

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-006, Eye Protection. It was approved on behalf of the Council of Standards Australia on 22 December 2003 and on behalf of the Council of Standards New Zealand on 16 February 2004. It was published on 30 April 2004.

The following are represented on Committee SF-006:

Guild of Dispensing Opticians, Australia
N.S.W. Rural Fire Service
New Zealand Association of Optometrists
New Zealand Employers and Manufacturers Association
Optical Distributors and Manufacturers Association of Australia
Optometrists Association Australia
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Australian Standard™

Personal eye-protection

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-006, Eye Protection. It is identical with, and has been reproduced from EN 207:1998, *Personal eye-protection—Filters and eye-protectors against laser radiation (laser eye-protectors),* and incorporates Amendment 1:2002. The start and finish of text altered by amendment is indicated in the text by tags labelled A_1.

The objective of this Standard is to provide regulatory authorities, manufacturers, importers, distributors, retailers, employers, employees and other users with comprehensive requirements for filters and eye-protectors against laser radiation complying with the proposed AS/NZS 1337.4.

As this Standard is reproduced from an international publication, the following applies.

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this European Standard' should read 'this Australian/ New Zealand Standard'.

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

The poor legibility of Figure A.1 is acknowledged. It is dependent on the international publication from which this Australian Standard is reproduced.

References to European and international Standards should be replaced by Australian, New Zealand or Australian/New Zealand Standards, as follows:

Reference to International Standard or other publication		*Australian/New Zealand Standard*	
EN		AS/NZS	
166	Personal eye-protection—Specifications	—	
167	Personal eye-protection—Optical test methods	—	
168	Personal eye-protection—Non-optical test methods	—	
208	Personal eye-protection—Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)	1337 1337.5	Personal eye–protection Part 5: Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)
60825 60825-1	Safety of laser products Part 1: Equipment classification, requirements and user's guide	2211 2211.1	Safety of laser products Part 1: Equipment classification, requirements and user's guide
ISO/CIE			
10526	CIE standard colorimetric illuminants	—	
10527	CIE standard colorimetric observers	—	

The term 'informative' has been used in this Standard to define the application of the annex or appendix to which it applies. An 'informative' annex or appendix is only for information and guidance.

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AUSTRALIAN/NEW ZEALAND STANDARD

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Part 4:
Filters and eye-protectors against laser radiation (laser eye-protectors)

1 Scope

This European Standard applies to eye-protectors used for protection against laser radiation as defined in EN 60825-1:1994 [i.e. LED (light emitting diode) radiation is included] in the spectral range 180 nm (0,18 µm) to 1 000 µm. It defines requirements, test methods and marking. A guide is given in Annex B with regard to selection and use.

EN 208 applies for laser adjustment eye-protectors.

NOTE Before selecting eye-protection according to this standard a risk assessment should be undertaken (see Annex B).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 166:1995, *Personal eye-protection — Specifications.*

EN 167:1995, *Personal eye-protection — Optical test methods.*

EN 168:1995, *Personal eye-protection — Non-optical test methods.*

EN 208, *Personal eye-protection — Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors).*

EN 60825-1:1994, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide.*

ISO/CIE 10526:1991, *CIE standard colorimetric illuminants.*

ISO/CIE 10527:1991, *CIE standard colorimetric observers.*

3 Requirements

3.1 Spectral transmittance of filters and frames

When tested according to **4.1**, the maximum spectral transmittance for the individual scale numbers which shall not be exceeded at the laser wavelength(s) against which they afford protection shall be as given in Table 1.

3.2 Luminous transmittance of filters

When assessed in accordance with **4.2**, the luminous transmittance of the filter relative to the D65 standard illuminant (see ISO/CIE 10526:1991) shall be at least 20 %, unless it is recommended in the information supplied by the manufacturer to increase accordingly by the intensity of illumination at the relevant workplace.

3.3 Stability of filters and frames to laser radiation

When tested according to **4.3**, the filters and frames shall meet the requirements of **3.1** and shall not lose their protective effect under the influence of laser radiation of the power (E) or energy density (H) given in Table 1 for a period of at least 10 s and for 100 pulses and shall not show any induced transmission (reversible bleaching). No splinters shall come away from the side of the filter facing the eye under the influence of the laser radiation. Any melting or other damage of the surface is not considered negative if the protective effect is still ensured.