AS/NZS 1337.4:2011
EN 207:2009
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Eye and face protection

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

A1 *AS/NZS 1337.4:2011, Eye and face protection, Part 4: Filters and eye protectors against laser radiation (laser eye-protectors), is an identical adoption of EN 207:2009, Personal eye-protection equipment – Filters and eye-protectors against laser radiation (laser eye-protectors), and is reproduced with the permission of CEN, Avenue Marnix 17, B-1000 Brussels, Belgium. All exploitation rights of the European Standards in any form and by any means are reserved world-wide to CEN and its National Members, and no reproduction may be undertaken without express permission in writing by CEN through Standards Australia Limited.*

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-006, Eye and Face Protection. It was approved on behalf of the Council of Standards Australia on 7 October 2011 and on behalf of the Council of Standards New Zealand on 20 October 2011.
This Standard was published on 11 November 2011.

The following are represented on Committee SF-006:

Association of Accredited Certification Bodies
Australasian Fire and Emergency Service Authorities Council
Australian Chamber of Commerce and Industry
Australian Dispensing Opticians Association
Australian Industry Group
New Zealand Association of Optometrists
Optical Distributors and Manufacturers Association of Australia
Queensland University of Technology
TestSafe Australia
The Human Factors & Ergonomics Society of Australia
The University of New South Wales
University of Auckland (New Zealand)
Welding Technology Institute of Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 1337.4.

AS/NZS 1337.4:2011
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Eye and face protection

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

Originated as AS/NZS 1337.4:2004.
Second edition 2011.
Reissued incorporating Amendment No. 1 (December 2014).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140.

ISBN 978 0 7337 9963 1

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-006, Eye and Face Protection, to supersede AS/NZS 1337.4:2004, *Personal eye-protection*, Part 4: *Filters and eye-protectors against laser radiation (laser eye-protectors)*.

This Standard incorporates Amendment No. 1 (December 2014). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to specify performance requirements, test methods, marking requirements, selection and use of personal eye-protectors against laser radiation in the spectral range 180 nm to 1000 micrometre.

This Standard is identical with, and has been reproduced from EN 207:2009, *Personal eye-protection equipment—Filters and eye-protectors against laser radiation (laser eye-protectors)*.

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

(a) Its number appears on the cover and title page while the European 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 term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

CONTENTS

Page

Page

AUSTRALIAN/NEW ZEALAND STANDARD

Eye and face protection

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 accidental exposure to laser radiation as defined in EN 60825-1:2007 in the spectral range 180 nm (0,18 µm) to 1 000 µm. It defines the requirements, test methods and marking. A guide is given in Annex B for the selection and use of laser eye-protectors.

This European Standard does not apply to protectors for intentional exposure to laser radiation.

EN 208 applies for laser adjustment eye-protectors.

NOTE Before selecting eye protection according to this European Standard, a risk assessment should first be undertaken (see Annex B).

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 166:2001, *Personal eye-protection — Specifications*

EN 167:2001, *Personal eye-protection — Optical test methods*

EN 168:2001, *Personal eye-protection — Non-optical test methods*

EN 60825-1:2007, *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825- 1:2007)*

ISO 11664-1:2007, *Colorimetry — Part 1: CIE standard colorimetric observers*

ISO 11664-2:2007, *Colorimetry — Part 2: CIE standard illuminants*

3 Requirements

3.1 Spectral transmittance of filters and frames

When tested according to 4.2, the maximum spectral transmittance at the wavelength(s) or in the wavelength range(s) of protection shall not exceed the values specified in Table 1 for the applicable scale number.

3.2 Luminous transmittance of filters

When assessed in accordance with 4.3, the luminous transmittance of the filter relative to the D65 standard illuminant (see ISO 11664-2:2007) shall be at least 20 %. However, luminous transmittance lower than 20 % may be accepted provided that the manufacturer supplies information related to the increase of the intensity of illumination at the relevant workplace in accordance with Clause 5.

3.3 Resistance of filters and frames to laser radiation

When tested according to 4.4, 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*) as specified in Table 1 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