

Australian/New Zealand Standard

Eye protectors for industrial applications

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Australian Chamber of Commerce
Australian Medical Association
Australian Optometrical Association
Australian Welding Institute
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Australian Radiation Laboratory

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PREFACE

This Standard was prepared by the Standards Australia Committee on Eye Protection to supersede AS 1337–1984 and NZS 5816:1986. It is issued as a joint Standard under the terms of the Active Cooperation Agreement between Standards Australia and Standards New Zealand with the objective of reducing technical barriers to trade between the two nations.

The Committee on Eye Protection currently intends to replace the ‘drop-ball’ method for determining low impact resistance (given in Appendix C) with the ‘ballistic’ method (given in Appendix D) in a future edition. The two methods are given in this edition to allow manufacturers and testing facilities time to assess the equivalence of the results given by the two methods and, if necessary, to acquire the ballistic testing equipment. The drop-ball test is retained as the low impact resistance test method in this edition.

In the time since this Standard was last revised, industrial and testing experience has shown that some eye protectors deform on impact with the potential for transmitting impact force to the eye area, and plastic lenses can be penetrated by a sharp object without breaking. Therefore, this edition contains new requirements that, in the impact test, no part or fragment of the eye protector shall make contact with the eye area of the test headform, and that plastic lenses should be penetration resistant. Also, a method for determining fluorescence in lenses, and a limit for fluorescence have been included for the first time, as excess fluorescence may affect the visual discrimination of the wearer.

It should be recognized that complete protection for the eye cannot be provided solely by the use of eye protectors. Relevant factors for a particular application should be considered in the choice of the correct eyewear to provide the maximum possible protection. AS 1336, *Recommended practices for eye protection in the industrial environment*, should be consulted for the appropriate measures to be taken into account.

The material and optical requirements described in this Standard maintain uniformity (where appropriate) with the following Standards:

AS/NZS

2228 *Spectacles*

2228.1 *Part 1: Spectacle lenses*

AS

1609 *Eye protectors for motor cyclists and racing car drivers*

ASTM F803, *Standard specification for eye protectors for use by players of racquet sports*, was referred to during the preparation of this Standard.

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Eye protectors for industrial applications

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies minimum requirements for eye protectors and associated lenses designed to provide protection for the eyes of persons in industrial undertakings against common industrial hazards such as flying particles and fragments, dusts, splashing materials and molten metals, harmful gases, vapours and aerosols. Requirements for optical qualities and low, medium and high impact resistance are given and appendices describing appropriate test methods are included in this Standard.

The aim of this Standard is to assist in the provision of safe, efficient and comfortable vision in the industrial situation, including consideration of the need for protection against sunglare and optical radiation in the natural environment.

NOTE: The Standard does not apply to filter lenses for protection against optical radiations generated by industrial processes, which are dealt with in AS/NZS 1338, or to lenses for protection against laser radiation.

1.2 APPLICATION Lenses for eye protectors shall comply with the requirements of Section 2.

Assembled eye protectors shall comply with the requirements of Section 3, and if intended for use in welding and allied operations, with Section 4, also.

NOTE: Where eye protection is incorporated in protective equipment, such as a hood or respirator, the components affording eye protection should comply with the relevant requirements of this Standard.

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

AS/NZS

- | | |
|--------|---|
| 1338 | Filters for eye protectors |
| 1338.1 | Part 1: Filters for protection against radiation generated in welding and allied operations |
| 1338.2 | Part 2: Filters for protection against ultraviolet radiation |
| 1338.3 | Part 3: Filters for protection against infra-red radiation |

AS

- | | |
|--------|---|
| 1152 | Test sieves |
| 1680 | Interior lighting |
| 1680.1 | Part 1: General principles and recommendations |
| 2900 | Quantities, units and symbols |
| 2900.6 | Part 6: Quantities and units of light and related electromagnetic radiations. |

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

1.4.1 Browguard—a faceshield lens holder usually designed for protection to the forehead, often secured by a head harness.

1.4.2 Cover lens—an expendable, transparent cover used to protect lenses or filters (or both) from damage.

1.4.3 Double-glazed lenses—lenses consisting of two or more components separated by an air gap and with the normal line of sight passing through all the components.

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

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

1.4.6 Faceshield—a device which includes a transparent visor supported in front of the face to shield the eyes, face, forehead and front of the neck.

1.4.7 Filter—an optical material used to absorb or reflect (or both) radiation that is emitted during welding and other industrial operations. It may be one of the following types:

- (a) *Active filter*—a filter for which the luminous transmittance is dependent on the incident luminous flux.
- (b) *Passive filter*—a filter for which the luminous transmittance is independent of the incident luminous flux.

1.4.8 Goggles—an eye protector fitting the contour of the face and held in position by an adjustable headband. Goggles are designated by the following types:

- (a) *Eye cup goggles*—an eye protector consisting of two lenses mounted in cups supported by a flexible nose bridge and headband.

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