

SINGAPORE STANDARD

# **Specification for personal eye-protectors**

– Part 1 : General requirements



Published by

**Enterprise**  
**Singapore**

**SS 473 : Part 1 : 2011**  
(ICS 13.340.20)

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ISBN 978-981-4353-18-2

This Singapore Standard was approved by the General Engineering and Safety Standards Committee on behalf of the Standards Council of Singapore on 24 November 2011.

First published, 1999

First revision, 2011

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*3M Technologies (Singapore) Pte Ltd*  
*Association of Singapore Marine Association*  
*Baker Hughes*  
*Ministry of Manpower*  
*National University of Singapore*  
*Singapore Contractors Association Limited*  
*Total Petrochemicals South East Asia Pte Ltd*  
*Uvex Safety Singapore Pte Ltd*  
*Workplace Safety and Health Council*

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## Foreword

This Singapore Standard was prepared by a Working Group appointed by the Technical Committee on Personal Safety and Health under the direction of the General Engineering and Safety Standards Committee. It is a revision of SS 473-1 : 1999 – ‘Specification for personal eye-protectors, Part 1 : General requirements’.

The revised SS 473 comprises the following parts under the general title ‘Specification for personal eye-protectors’:

Part 1: General requirements

Part 2 : Selection, use and maintenance

The standard constitutes the first part of the Singapore Standard on personal eye-protectors. It relates to the general requirements, which are common to all personal eye-protectors recommended in Part 2 of SS 473 that covers the selection, use and maintenance for personal eye-protectors. It deals with general considerations relating to eye-protectors, such as designation, definition, classification and testing requirements applicable to all recommended eye-protectors. It was prepared as a guide to provide testing methods where needed.

This revision is to bring the standard up-to-date with the latest relevant overseas standards, in particular, in the following areas:

- 1) Terms and definitions
- 2) Transmittance
  - Lenses with filtering action (filters) and housings for lenses with filtering action
- 3) Additional optional testing requirements
  - Protection against high speed particles at extremes temperature
- 4) Lens marking symbols
  - Resistance to short circuit electric arc
  - Resistance to high speed particles at extremes of temperature
- 5) Frame marking symbols
  - Increased robustness and resistance to high speed particles
  - Resistance to high speed particles at extremes of temperature
- 6) Information for users
  - A warning to caution users on eye-protectors against high speed particles worn over standard ophthalmic spectacles
  - A note to instruct on eye-protectors used against high speed particles at extremes of temperature

The following materials have been reproduced by permission of:

- 1) CEN, Avenue Marnix 17, 1000 Brussels (Tables and examples of marking)
- 2) International Safety Equipment Association, Arlington, VA (Annex C)

In preparing this specification, reference was made to the following standards:

- 1) BS EN 166 : 2002                      Personal eye-protection – Specifications
- 2) BS EN 167 : 2002                      Personal eye-protection – Optical test methods



- 3) BS EN 168 : 2002            Personal eye-protection – Non-optical test methods
- 4) BS EN 169 : 2002            Personal eye-protection – Filters for welding and related techniques – Transmittance requirements and recommended use
- 5) BS EN 170 : 2002            Personal eye-protection – Ultraviolet filters – Transmittance requirements and recommended use
- 6) BS EN 171 : 2002            Personal eye-protection – Infrared filters – Transmittance requirements and recommended use
- 7) BS EN 172 : 1995            Personal eye-protection – Sun glare filters for industrial use

Acknowledgement is made for the use of materials and information from the above publications.

The eye-protectors shall satisfy any of the following standards or their equivalent which include both plano and prescription eye-protectors: ISO, EN (Europe), ANSI (USA), CSA (Canada), AS/NZ (Australia / New Zealand) and JIS (Japan). They shall be marked in accordance to the relevant standards. Annex A of SS 473-2 gives examples of eye-protector marking.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

**NOTE**

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*
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# Specification for personal eye-protectors – Part 1 : General requirements

## 1 General

### 1.1 Scope

This Singapore Standard specifies functional requirements for the various types of personal eye-protectors used in all workplaces.

### 1.2 Field of application

This Singapore Standard applies to all types of personal eye-protectors used against various hazards, particularly those encountered in industry, which are likely to damage the eye or impair vision, with the exception of nuclear radiation, X-rays, laser beams and low-temperature infra-red radiation (see illustrations in Annex A).

This Singapore Standard is not applicable to sunglasses for general use or to fashion spectacles which are used principally as a part of costume or of fancy dress.

## 2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 166:2002	Personal eye-protection – Specifications
BS EN 167:2002	Personal eye-protection – Optical test methods
BS EN 168:2002	Personal eye-protection – Non-optical test methods
BS EN ISO 8980-1:2004	Ophthalmic optics – Uncut finished spectacle lenses – Part 1 : Specifications for single-vision and multifocal lenses
BS EN ISO 8980-2:2004	Ophthalmic optics – Uncut finished spectacle lenses – Part 2 : Specifications for progressive power lenses
BS EN ISO 8980-3:2004	Ophthalmic optics – Uncut finished spectacle lenses – Part 3 : Transmittance specifications and test methods