

**ISO 12312-2:2015**



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**Eye and face protection - Sunglasses and related eyewear - Part 2: Filters for direct observation of the sun (ISO 12312-2:2015)**

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## Eye and face protection - Sunglasses and related eyewear - Part 2: Filters for direct observation of the sun (ISO 12312-2:2015)

Protection des yeux et du visage - Lunettes de soleil et articles de lunetterie associés - Partie 2: Filtres pour l'observation directe du soleil (ISO 12312-2:2015)

Augen- und Gesichtsschutz - Sonnenbrillen und ähnlicher Augenschutz - Teil 2: Filter für die direkte Beobachtung der Sonne (ISO 12312-2:2015)

This European Standard was approved by CEN on 16 April 2015.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN ISO 12312-2:2015 (E)**

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## European foreword

This document (EN ISO 12312-2:2015) has been prepared by Technical Committee ISO/TC 94 “Personal safety - Protective clothing and equipment” in collaboration with Technical Committee CEN/TC 85 “Eye protective equipment” the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2015, and conflicting national standards shall be withdrawn at the latest by December 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Endorsement notice

The text of ISO 12312-2:2015 has been approved by CEN as EN ISO 12312-2:2015 without any modification.

## Annex ZA (informative)

### Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC Personal protective equipment

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 89/686/EEC – Personal Protective Equipment.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 89/686/EEC**

Clause(s)/sub-clause(s) of this European Standard	Essential Requirements (ERs) of Directive 89/686/EEC	Qualifying remarks/Notes
4.3.3	1.2.1.1. Suitable constituent materials	
4.3.3	1.2.1.2. Satisfactory surface condition of all PPE parts in contact with the user	
4.2.1	1.2.1.3. Maximum permissible user impediment	
4.3.1, 4.3.2	1.3.1. Adaptation of PPE to user morphology	
5	1.4. Information supplied by the manufacturer	
4.3.2	2.3. PPE for the face, eyes and respiratory tracts	Subclause 4.3.2 covers only the first paragraph of this ER. Other paragraphs are not relevant for the intended use.
4.1, 4.3.2	3.9.1. Non-ionizing radiation	Subclauses 4.1 and 4.3.2 cover the first two paragraphs of this ER. Other paragraphs are not relevant for the intended use.

WARNING: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

# INTERNATIONAL STANDARD

**ISO**  
**12312-2**

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## **Eye and face protection — Sunglasses and related eyewear —**

### **Part 2: Filters for direct observation of the sun**

*Protection des yeux et du visage — Lunettes de soleil et articles de  
lunetterie associés —*

*Partie 2: Filtres pour l'observation directe du soleil*



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**ISO 12312-2:2015(E)****Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 6, *Eye and face protection*.

ISO 12312 consists of the following parts, under the general title *Eye and face protection — Sunglasses and related eyewear*:

- *Part 1: Sunglasses for general use*
- *Part 2: Filters for direct observation of the sun*

# Eye and face protection — Sunglasses and related eyewear —

## Part 2: Filters for direct observation of the sun

### 1 Scope

This part of ISO 12312 applies to all afocal (plano power) products intended for direct observation of the sun, such as solar eclipse viewing.

Information on the use of filters for direct observation of the sun is given in [Annex A](#) and [Annex B](#).

This part of ISO 12312 does not apply to the following:

- a) afocal (plano power) sunglasses and clip-ons for general use intended for protection against solar radiation;
- b) eyewear for protection against radiation from artificial light sources, such as those used in solaria;
- c) eye protectors specifically intended for sports (e.g. ski goggles or other types);
- d) sunglasses that have been medically prescribed for attenuating solar radiation;
- e) prescription sunglass lenses.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12311:2013, *Personal protective equipment — Test methods for sunglasses and related eyewear*

ISO 4007, *Personal protective equipment — Eye and face protection — Vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and the definitions given in ISO 4007 apply.

### 4 Requirements and associated test methods

#### 4.1 Transmittance

##### 4.1.1 General

The transmittance requirements of filters for the direct observation of the sun are given in [Table 1](#). Transmittance values shall be measured or calculated at the boxed centre of the filter for normal incidence, as described in ISO 12311:2013, 7.1.1, 7.1.2, 7.3.2, 7.3.3, and 7.5.