



SLOVENSKI STANDARD

SIST EN ISO 12311:2013

01-oktober-2013

Osebna varovalna oprema - Preskusne metode za sončna očala in podobno opremo (ISO 12311:2013, popravljena verzija 2014-08-15)

Personal protective equipment - Test methods for sunglasses and related eyewear (ISO 12311:2013, Corrected version 2014-08-15)

Persönliche Schutzausrüstung - Prüfverfahren für Sonnenbrillen und ähnlichen Augenschutz (ISO 12311:2013)

Équipement de protection individuelle - Méthodes d'essai pour lunettes de soleil et articles de lunetterie associés (ISO 12311:2013, Version corrigée 2014-08-15)

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English Version

**Personal protective equipment - Test methods for sunglasses
and related eyewear (ISO 12311:2013, Corrected version 2014-
08-15)**

Équipement de protection individuelle - Méthodes d'essai
pour lunettes de soleil et articles de lunetterie associés (ISO
12311:2013, Version corrigée 2014-08-15)

Persönliche Schutzausrüstung - Prüfverfahren für
Sonnenbrillen und ähnlichen Augenschutz (ISO
12311:2013, korrigierte Fassung 2014-08-15)

This European Standard was approved by CEN on 30 June 2013.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents

Page

Foreword.....	3
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 89/686/EEC.....	4

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Foreword

This document (EN ISO 12311:2013) 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of an identical text or by endorsement, at the latest by February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

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 12311:2013, Corrected version 2014-08-15 has been approved by CEN as EN ISO 12311:2013 without any modification.

Annex ZA
(informative)
**Relationship between this European Standard and the Essential
Requirements of EU Directive 89/686/EEC**

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the EU Directive 89/686/EEC on PPE.

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, together with the relevant requirements given in the product standards, confers within the limits of the scope of those standards, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

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

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INTERNATIONAL STANDARD

ISO
12311

First edition
2013-08-01

Corrected version
2014-08-15

Personal protective equipment — Test methods for sunglasses and related eyewear

*Équipement de protection individuelle — Méthodes d'essai pour
lunettes de soleil et articles de lunetterie associés*

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
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Contents

Page

Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Prerequisites	1
5 General test requirements	2
6 Test methods for assessing the construction and materials	2
6.1 Prior assessment of construction, marking and information	2
6.2 Test method for assessment of filter material and surface quality	2
7 Test methods for measuring spectrophotometric properties	3
7.1 Measurement of spectral transmittance $\tau(\lambda)$	3
7.2 Measurement of uniformity of luminous transmittance	5
7.3 Calculation of ultraviolet transmittance	7
7.4 Calculation of solar blue-light transmittance τ_{sb}	9
7.5 Calculation of solar IR transmittance τ_{SIR}	9
7.6 Measurement of absolute spectral reflectance $\rho(\lambda)$	9
7.7 Absolute luminous reflectance ρ_v	10
7.8 Calculation of relative visual attenuation quotient for signal light detection Q_{signal}	11
7.9 Wide angle scatter	11
7.10 Polarizing filters	14
7.11 Photochromic filters	17
8 Test methods for measuring optical properties	19
8.1 Test method for spherical, astigmatic and prismatic refractive powers	19
8.2 Test method for the prism imbalance of complete sunglasses or filters covering both eyes	23
8.3 Test method for local variations in refractive power	25
9 Test methods for mechanical properties	30
9.1 Test method for minimum robustness of filters	30
9.2 Test method for impact resistance of filters, strength level 1	33
9.3 Test method for impact resistance of sunglasses, strength level 1	35
9.4 Test method for impact resistance of sunglasses, strength level 2	36
9.5 Test method for impact resistance of sunglasses, strength level 3	37
9.6 Test method for frame deformation and filter retention	39
9.7 Test method for increased endurance of sunglasses	42
9.8 Test method for resistance to solar radiation	46
9.9 Test method for resistance to ignition	48
9.10 Test for resistance to perspiration of the sunglass frame	48
Annex A (normative) Application of uncertainty of measurement	52
Annex B (informative) Sources of uncertainty in spectrophotometry and their estimation and control	54
Annex C (informative) Definitions in summations form	61
Annex D (normative) Product of the energy distribution of Standard Illuminant D65 as specified in ISO 11664-2 and the spectral visibility function of the average human eye for daylight vision as specified in ISO 11664-1	65
Annex E (normative) Spectral functions for the calculation of solar UV and solar blue light transmittance values	66
Annex F (normative) Spectral distribution of solar irradiance in the infrared spectrum for the calculation of the solar infrared transmittance^[7]	68

ISO 12311:2013(E)

Annex G (normative) Reference test headforms	70
Annex H (normative) Spectral distribution of radiation in incandescent signal lights weighted by the sensitivity of the human eye $V(\lambda)$.....	72
Annex I (informative) Spectral distribution of radiation in LED signal lights weighted by the sensitivity of the human eye $V(\lambda)$.....	75
Annex J (normative) Long wavelength pass filter	78
Annex K (informative) Method of variable distance for the calibration of the telescope	82
Annex L (normative) Method to correct transmittance for variations in thickness of the filter	84
Bibliography	85

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SIST EN ISO 12311:2013

<https://standards.iteh.ai/catalog/standards/sist/30d8195b-c1d2-42cf-906e-8f5761a1b0cd/sist-en-iso-12311-2013>

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. 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. 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.

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

This corrected version of ISO 12311:2013 incorporates the following correction:

— the second paragraph of 9.7.3.1 has been added.

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Personal protective equipment — Test methods for sunglasses and related eyewear

1 Scope

This International Standard specifies reference test methods for determining the properties of sunglasses given in ISO 12312 (all parts). It is applicable to all sunglasses and related eyewear.

Other test methods may be used if proven to be equivalent.

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 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 1042:1998, *Laboratory glassware — One-mark volumetric flasks*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

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

ISO 8596, *Ophthalmic optics — Visual acuity testing — Standard optotype and its presentation*

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

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

ISO 12312-1:2013, *Eye and face protection — Sunglasses and related eyewear — Part 1: Sunglasses for general use*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

3 Terms and definitions

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

4 Prerequisites

The following parameters shall be specified prior to testing [see ISO 12312 (all parts)]:

- the number of specimens;
- specimen preparation;
- any conditioning prior to testing;
- characteristics to be assessed subjectively (inappropriate);

ISO 12311:2013(E)

— pass/fail criteria.

5 General test requirements

Unless otherwise specified, the values stated in this International Standard are expressed as nominal values. Except for temperature limits, values which are not stated as maxima or minima shall be subject to a tolerance of ± 5 %. Unless otherwise specified, the ambient temperature for testing shall be between 16 °C and 32 °C. Where other temperature limits are specified they shall be subject to an accuracy of ± 1 °C. Relative humidity shall be maintained at (50 ± 20) %.

Unless otherwise specified, the filters shall be tested at the reference points as defined in ISO 4007.

6 Test methods for assessing the construction and materials**6.1 Prior assessment of construction, marking and information**

Prior to applying the test methods, a visual inspection shall be carried out with normal or corrected vision, without magnification. Marking and information supplied by the manufacturer and safety data sheets (if applicable) or declaration relevant to the materials used in its construction shall also be assessed.

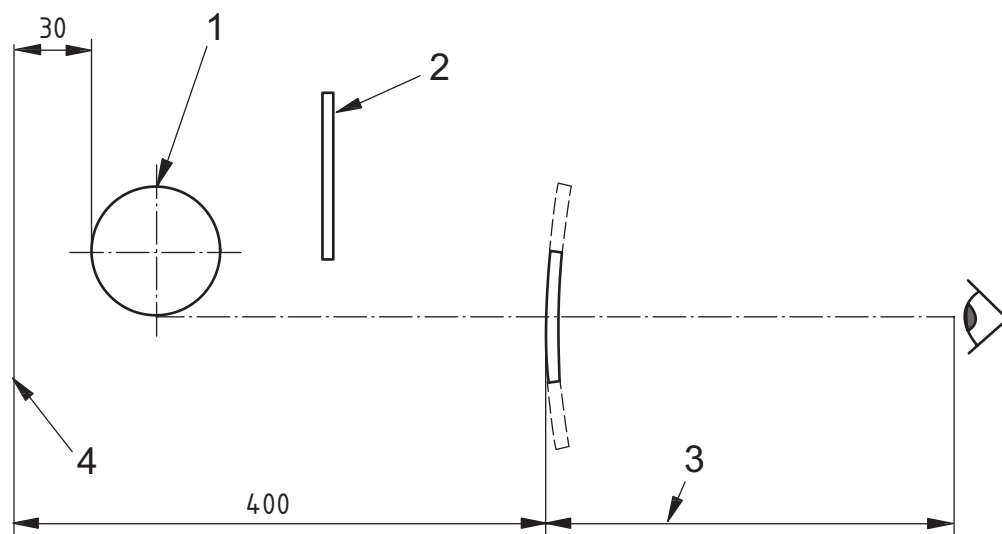
6.2 Test method for assessment of filter material and surface quality**6.2.1 Principle**

The quality of the filter material and surface is assessed by visual inspection.

6.2.2 Apparatus

A suitable apparatus is shown in [Figure 1](#).

Dimensions in millimetres

**Key**

- 1 lamp
- 2 adjustable opaque dull black mask
- 3 near vision distance (≈ 300)
- 4 dull black background (200×360)

Figure 1 — Arrangement of apparatus for assessment of quality of material and surface

6.2.3 Test procedure

Carry out the assessment of the quality of material and surface by visual inspection with the aid of a “light box” or illuminated grid.

NOTE One method of inspection in current use consists of an illuminated grid as a background to be viewed through the filter which is held at various distances from the eye. Another method is to illuminate the filter by means of a fluorescent lamp mounted within a dull black chamber and with the amount of illumination adjusted by means of an adjustable opaque black mask. A suitable arrangement is shown in [Figure 1](#).

6.2.4 Verification and test report

Except for a marginal area 5 mm wide at the edge of the eye protector, any significant defects likely to impair vision in use shall be recorded in the verification and test report.

7 Test methods for measuring spectrophotometric properties

7.1 Measurement of spectral transmittance $\tau(\lambda)$

7.1.1 Spectral transmittance

7.1.1.1 General

Test methods shall be used which have relative uncertainties in spectral transmittance less than or equal to those given in [Table 1](#).