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

Part 3:
**Sunglasses for running, cycling and
similar active lifestyles**

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

*Partie 3: Lunettes de soleil pour la course à pied, le cyclisme et les
pratiques similaires associées à un mode de vie actif*

ISO 12312-3:2022

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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).

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).

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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety – Personal protective equipment*, Subcommittee SC 6, *Eye and face protection*.

This document differs from ISO 12312-1 in that the requirements for mechanical strength given in [7.2](#), [7.3](#) and [7.4](#) are mandatory (see [3.1](#)), whereas they are optional in ISO 12312-1.

A list of all parts in the ISO 12312 series can be found on the ISO website.

Eye and face protection — Sunglasses and related eyewear —

Part 3: Sunglasses for running, cycling and similar active lifestyles

1 Scope

This document is applicable to all nominally afocal (plano power) sunglasses for protection against environmental elements, such as solar radiation, wind, dust and rain when running, cycling and following similar active lifestyle recreational activities but not intended for competitive sporting activities where enhanced impact resistance is required.

The document specifies additional material, design, performance and marking requirements. The other applicable requirements are given in ISO 12312-1.

This type of sunglass is designed to reduce secondary hazards to the wearer in an accident rather than to provide high amounts of impact protection which may be difficult in a spectacle format.

This document is not applicable to:

- a) eyewear for protection against radiation from artificial light sources, such as those used in solaria;
- b) eye protectors intended for specific sports, e.g. ski goggles or other types – see ISO 18527 (all parts);
- c) eye protectors for sports that include the use of a ball, stick, bat, racquet or other implement;
- d) sunglasses that have been medically prescribed for attenuating solar radiation;
- e) products intended for direct observation of the sun, such as for viewing a partial or annular solar eclipse, for which ISO 12312-2 applies;
- f) products intended for occupational eye protection – for example, see ISO 16321 (all parts).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 12312-1:2022, *Eye and face protection — Sunglasses and related eyewear — Part 1: Sunglasses for general use*

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

ISO 18526-3:2020, *Eye and face protection — Test methods — Part 3: Physical and mechanical properties*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4007, ISO 12312-1 and the following apply.

ISO 12312-3:2022(E)

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1
sunglasses for active lifestyles
sunglasses for protection against solar radiation, for active lifestyle recreational activities such as running and cycling where increased robustness and durability are preferred

4 Construction and materials

All requirements of ISO 12312-1:2022, Clause 4 shall apply.

5 Transmittance

All requirements of ISO 12312-1:2022, Clause 5 shall apply.

6 Refractive power

All requirements of ISO 12312-1:2022, Clause 6 shall apply.

7 Robustness

7.1 Frame deformation and retention of filters

The requirement of ISO 12312-1:2022, 7.2, shall apply.

7.2 Increased endurance of sunglasses

The requirement of ISO 12312-1:2022, 7.4, shall apply, whereas it is optional in ISO 12312-1.

7.3 Resistance to perspiration

The requirement of ISO 12312-1:2022, 7.5, shall apply, whereas it is optional in ISO 12312-1.

7.4 Increased robustness of the sunglass, strength level 2

The requirement of ISO 12312-1:2022, 7.6, shall apply, whereas it is optional in ISO 12312-1.

The test shall be made as specified in ISO 18526-3.

7.5 Impact resistance of the filter, strength level 3 (optional requirement)

If impact resistance of strength level 3 is claimed, the requirement of ISO 12312-1:2022, 7.6, shall apply.

The test shall be made as specified in ISO 18526-3.

If a sunglass passes strength level 3, there is no need to test for strength level 2.

8 Resistance to solar radiation

The requirements of ISO 12312-1:2022, Clause 8, shall apply.

9 Resistance to ignition

The requirements of ISO 12312-1:2022, Clause 9, shall apply.

10 Resistance to abrasion (optional requirement)

If resistance to abrasion is claimed, the requirements of ISO 12312-1:2022, Clause 10, shall apply.

11 Resistance to fogging (optional requirement)

If the surface of the filter is claimed to be fog resistant, then the time to fog shall be not less than 30 s when tested in accordance with ISO 18526-3:2020, 6.11. An initial fogging for $\leq 0,5$ s shall not constitute a failure.

NOTE This is a test of a lens or filter alone. There is no accepted test for the resistance to fogging of assembled sunglasses under all conditions of use.

12 Protective requirements

12.1 Field of view and coverage area

For sunglasses intended to be worn by adults and when viewed from the front, the filters shall cover two ellipses with a horizontal diameter of (40 ± 1) mm and a vertical diameter of (28 ± 1) mm, the centres of which are separated by 64 mm (1-M headform) or as defined by the headform utilized, and symmetrically placed on each side of the centre of the bridge of the frame, i.e. its vertical symmetry axis. The vertical positioning of the sunglass is not restricted.

For sunglasses intended to be worn by children and when viewed from the front, the filters shall cover two ellipses with a horizontal diameter of 34 mm and a vertical diameter of 24 mm, the centres of which are separated by 52 mm (1-C6 headform) or 58 mm (1-C12 headform) and symmetrically placed on either side of the centre of the bridge of the frame.

A different interpupillary distance may be used if specified by the manufacturer or one based on the headform specified by the manufacturer in accordance with ISO 18526-4.

12.2 Temporal protective requirements

The requirements of ISO 12312-1:2022, 11.2, shall apply to Category 4 sunglasses.

13 Information and labelling

13.1 Information to be provided with each pair of sunglasses

The manufacturer shall provide information for the user with each pair of sunglasses. This information shall be in the form of markings on the frame or separate information on labels, packaging, etc., that accompanies the sunglasses at the point of sale. Where pictograms are used, an explanation of the significance of these pictograms shall also be available.

NOTE Attention is drawn to national regulations with respect to the content of the user information.

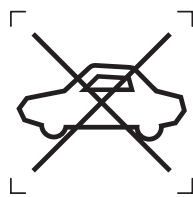
The user information shall contain following items:

- a) Identification of model;
- b) Name and address of the manufacturer;
- c) Reference to this document, i.e. ISO 12312-3:2022;

- d) Type of filter, if photochromic, polarizing, electro-optical or a combination of these;
- e) Number of the filter category (in both the faded and darkened states for photochromic filters and electro-optical filters).

NOTE In some regions, i.e. Europe, regulations require this to be marked on the frame or on the filter.

- f) Description of the filter category in the form of a symbol and/or verbal description given in ISO 12312-1:2022, Table 6 in the usage column. The minimum height of the symbols shall be 5 mm;
- g) The letter “A” identifying the active lifestyle marked on sunglasses;
- h) The letter “N” identifying “Resistance to fogging” if applicable;
- i) Restrictions of use, which shall include at least the following:
 - 1) not for direct observation of the sun;
 - 2) not for protection against artificial radiation sources, e.g. solaria;
 - 3) electro-optical sunglare filters/electro-optical sunglass filters are not for use by individuals who are susceptible to photosensitive seizures;
 - 4) any other restrictions deemed appropriate to be communicated by the manufacturer, e.g. increased or decreased transmittance of photochromic sunglasses due to high or low temperatures or to reduced light conditions.
- j) When the filter does not meet the requirements for road use and driving or is a filter category 4, the following warning: “Not suitable for road use and driving” in the form of either of the symbols shown in [Figure 1](#) and/or in writing. The minimum height of the symbol shall be 5 mm;
- k) When the filter has a luminous transmittance lower than 75 % and higher than 8 %, the following warning: “Not suitable for driving in twilight or at night” or “Not suitable for driving at night or under condition of dull light”. The same warning applies to photochromic filters for which the luminous transmittance in the faded conditions is lower than 75 %;
- l) If relevant, instructions for care and cleaning. If the wrong choice of cleaning product could damage the sunglasses, then a list of damaging products not suitable for cleaning should be provided.



ISO 7000-2952A



ISO 7000-2952B

Figure 1 — Symbol: “Not suitable for road use and driving”

13.2 Additional information

The following information shall be available from the manufacturer on request:

- a) An explanation of the trademarks that are not universally recognized or foreseen by the users of this document;
- b) The position of the reference point when different from the one defined in this document;
- c) Transmittance requirements applicable to this product;
- d) Polarizing efficiency in cases of polarizing filters;
- e) The base material of filters and frame.

NOTE In some countries, the country of origin may be mandatory.

14 Selection of test samples

14.1 General

The minimum level of conformity testing requires samples to be selected at random. These specimens shall be selected by the manufacturer or its representative, and shall be identified as reported in [Table 1](#), and shall be conditioned as described in [14.2](#) before testing.

NOTE When conformity to this document is claimed, the manufacturer or its representative has the responsibility to ensure that conformity of the product with this document is valid during the lifetime of manufacture, and not only at its first launch on the market.

14.2 Preparation and conditioning of test samples

Immediately before starting the series of tests, the test samples shall be conditioned for at least 4 h at an ambient temperature of $23\text{ °C} \pm 5\text{ °C}$, in the as-received condition from the manufacturer or supplier, without prior realignment, adjustment or lubrication.

The testing schedule in [Table 1](#) shall be applied to type testing of complete sunglasses with the same filter type. At least 4 (6 if the nickel release test is to be performed) samples are required for testing. If additionally testing for optional requirements has to be done, more than 8 samples may be necessary.

Table 1 — Testing schedule for complete sunglasses

Order of testing	Requirements	According to lause/subclause	Sunglasses number					
			1	2	3	4	5 to 6	7 to 8
1	Construction	4	+					
2	Filter material and surface quality	4	+					
3	Physiological compatibility	4					+ b	
4	Transmittance and filter categories	5	+ a					

Explanation of the symbols:

+ Testing to be carried out on the indicated specimen.
 Empty field: No testing specified.

^a Test both right and left filters.
^b Nickel release testing is conducted for those parts of metal and combination sunglass frames that come into direct and prolonged contact with the skin of the wearer.
^c Left filter from sample 8 and right filter from sample 7.
^d Left filter from sample 7 and right filter from sample 8.

Table 1 (continued)

Order of testing	Requirements	According to lause/subclause	Sunglasses number						
			1	2	3	4	5 to 6	7 to 8	
5	General transmittance requirements	5	+ a						
6	Refractive power	6		+					
7	Frame deformation and retention of filters	7.1				+			
8	Endurance of sunglasses	7.2				+			
9	Resistance to perspiration	7.3		+					
10	Mechanical strength of the sunglass, strength level 2 (minimum requirement) or 3 (optional)	7.4 7.5			+ a				
11	Resistance to solar radiation	8	+ a						
12	Resistance to ignition	9			+				
13	Resistance to abrasion (optional specification)	10							+ c
14	Resistance to fogging (optional)	11							+ d
15	Field of view	12.1			+				
16	Temporal protective requirements	12.2			+				

Explanation of the symbols:

+ Testing to be carried out on the indicated specimen.

Empty field: No testing specified.

a Test both right and left filters.

b Nickel release testing is conducted for those parts of metal and combination sunglass frames that come into direct and prolonged contact with the skin of the wearer.

c Left filter from sample 8 and right filter from sample 7.

d Left filter from sample 7 and right filter from sample 8.