
**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*



This document is a preview generated by ELS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Prerequisites.....	1
5 General test requirements.....	2
6 Test methods for mechanical properties.....	2
6.1 Test method for frame deformation and filter retention.....	2
6.1.1 Principle.....	2
6.1.2 Apparatus.....	2
6.1.3 Procedure.....	3
6.1.4 Report.....	4
6.1.5 Uncertainty of measurement.....	4
6.2 Test method for increased endurance of sunglasses.....	5
6.2.1 Principle.....	5
6.2.2 Apparatus.....	5
6.2.3 Procedure.....	5
6.2.4 Report.....	10
6.2.5 Uncertainty of measurement.....	10
6.3 Test for resistance to perspiration of the sunglass frame.....	10
6.3.1 Principle.....	10
6.3.2 Apparatus and reagents.....	10
6.3.3 Procedure.....	11
6.3.4 Report.....	12
Annex A (normative) Application of uncertainty of measurement.....	13
Bibliography.....	15

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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

For an explanation of 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 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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 85, *Eye-protective equipment*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 12311:2013), which has been technically revised.

The main changes are as follows:

- with the publication of the four parts of ISO 18526 in 2020, which provides test methods and specifications for head forms for the compliance testing of eye protectors, it was deemed unnecessary to reproduce details of these test methods in ISO 12311. They have therefore been removed. Test methods that have been retained in this document are those developed originally for testing of spectacle frames, that cannot be found in ISO 18526-3. Corresponding Annexes that supplemented the now deleted test methods have also been removed.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Personal protective equipment — Test methods for sunglasses and related eyewear

1 Scope

This document specifies reference's 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 can be used if proven to be equivalent.

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 1042, *Laboratory glassware — One-mark volumetric flasks*

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

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

ISO 8624, *Ophthalmic optics — Spectacle frames — Measuring system and vocabulary*

ISO/IEC Guide 98-3, *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 and ISO 8624 apply.

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/>

4 Prerequisites

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

- the number of test samples;
- test sample preparation;
- any conditioning prior to testing;
- characteristics to be assessed subjectively (if appropriate);
- pass/fail criteria.