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Ophthalmic optics — Spectacle frames — Requirements and test methods

Optique ophtalmique — Montures de lunettes — Exigences et méthodes d'essai

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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).

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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 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 170, *Ophthalmic optics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition cancels and replaces the fourth edition (ISO 12870:2016), which has been technically revised.

The main changes are as follows:

— rimmed clip-ons, prescription inserts, and frames made by additive manufacture are now included in the scope;

— additional terms and definitions;

— clarification of the tests to be applied for the biological properties of custom-made frames in Table 1 (in 4.1);

— some re-arrangement of and additional text in 4.2;

— simplification of the text in 4.2 to make it more general, and addition of a note on magnets;

— additional wording has been added to 4.12.3 and 8.5 to emphasize that the apparatus prevents rotational movements of the "fixed" side;

— minor changes to 4.2, 6.1, 8.5.2.3, 8.6, 8.7 (with a new Annex E), Clause 9 and 10.3;

— 4.5 and 4.9 have been made optional, while the original 10.5 and 10.6 are now in a Note to 4.2;

— 10.1 refers to an informative Annex F on frame handling information.

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.

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Ophthalmic optics — Spectacle frames — Requirements and test methods

1 Scope

This document specifies fundamental requirements and their test methods for unglazed spectacle frames designed for use with prescription lenses. It is applicable to spectacle frames at the point of sale by the manufacturer or supplier to the retailer.

This document is applicable to:

— all mass-produced spectacle frame types, including rimless mounts, semi-rimless mounts and folding spectacle frames;

— spectacle frames made with additive manufacturing, for example, 3D printing;

— spectacle frames made from natural organic materials;

— the frame or mount of clip-ons designed specifically for attachment to particular models of spectacle frame, but not to their lenses or filters to which ISO 16034 or ISO 12312-1 apply;

— prescription inserts designed for attachment to particular models of, for example, eye protector, sunglass or diving mask.

Parts of this document are applicable to custom-made frames – see 3.1.3 and Table 1.

NOTE See Annex A for recommendations on the design of spectacle frames and terms to be used when describing metal frames.

This document is not applicable to spectacle frames used in eye protection, where ISO 16321-1 applies, or to sunglasses with afocal filters, where ISO 12312-1 applies.

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 105-A02, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*

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

ISO 7998, *Ophthalmic optics — Spectacle frames — Lists of equivalent terms and vocabulary*

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

ISO 11380, *Optics and optical instruments — Ophthalmic optics — Formers*

ISO 11381, *Ophthalmic optics — Spectacle frames — Screw threads*

EN 16128, *Ophthalmic optics — Reference method for the testing of spectacle frames and sunglasses for Nickel release*

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