DRAFT AMENDMENT ISO 13666:1998/DAmd 1.2



ISO/TC 172/SC 7

Secretariat: **DIN**

Voting begins on: 2009-07-09

Voting terminates on: 2009-09-09

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • MEXILYHAPODHAA OPFAHUSALUAR TIO CTAHDAPTUSALUAU • ORGANISATION INTERNATIONALE DE NORMALISATION

Ophthalmic optics — Spectacle lenses — Vocabulary

AMENDMENT 1

Optique ophtalmique — Verres de lunettes — Vocabulaire AMENDEMENT 1

ICS 01.040.11; 11.040.70

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

Conformément aux dispositions de la Résolution du Conseil 15/1993, ce document est distribué en version anglaise seulement.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>ISO 13666:1998/DAmd 1.2</u> https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9bf4df55b870e9/iso-13666-1998-damd-1-2

Copyright notice

This ISO document is a Draft International Standard and is copyright-protected by ISO. Except as permitted under the applicable laws of the user's country, neither this ISO draft nor any extract from it may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, photocopying, recording or otherwise, without prior written permission being secured.

Requests for permission to reproduce should be addressed to either ISO at the address below or ISO's member body in the country of the requester.

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

Reproduction may be subject to royalty payments or a licensing agreement.

Violators may be prosecuted.

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

Amendment 1 to ISO 13666:1998 was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*, and by Technical Committee CEN/TC 170, *Ophthalmic optics* in collaboration **TANDARD PREVIEW**

(standards.iteh.ai)

<u>ISO 13666:1998/DAmd 1.2</u> https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9bf4df55b870e9/iso-13666-1998-damd-1-2

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 13666:1998/DAmd 1.2 https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9bf4df55b870e9/iso-13666-1998-damd-1-2

Ophthalmic optics — Spectacle lenses — Vocabulary AMENDMENT 1

Clause 1

Re-number the NOTE as NOTE 2 and add the following NOTE 1:

NOTE 1 At the time of publication, definitions quoted and acknowledged as being sourced from other International Standards are identical to those in the referenced editions of these documents (see Clause 2 and Bibliography, respectively). If, due to future revision of these International Standards, there should be disagreement between definitions in these International Standards and those in ISO 13666, then the definitions in the latest version of the referenced documents take precedence.

Clause 2

iTeh STANDARD PREVIEW

Update the references, as follows: (standards.iteh.ai)

ISO 8429:1986, Optics and optical instruments — Ophthalmology — Graduated dial scale

ISO 13666:1998/DAmd 1.2

ISO 8980-3:2003, Ophthalmic optics / catalo Uncutar finished b spectacle lenses — Part 3: Transmittance specifications and test methods f4df55b870e9/iso-13666-1998-damd-1-2

ISO 10526:2007, CIE standard colorimetric illuminants

ISO 10527:2007, CIE standard colorimetric observers

Clause 4

4.2 visible radiation

Amend NOTE 2 to read:

NOTE 2 For the purposes of this International Standard on spectacle lenses, the limits are 380 nm and 780 nm. These limits are also specified in ISO 20473.

4.3 ultraviolet radiation

Amend NOTE 2 to read:

NOTE 2 For the purposes of this International Standard on spectacle lenses, the upper limit for UV-A is 380 nm. This limit is also specified in ISO 20473.

4.4 infrared radiation

Insert a new NOTE 2:

NOTE 2 These limits are also specified in ISO 20473.

Make current NOTE 2 into NOTE 3 and amend to read:

NOTE 3 The solar infrared spectrum at sea level extends to about 2 000 nm.

Make current NOTE 3 into NOTE 4.

Clause 5

5.5 geometrical centre

Amend definition to read:

intersection of the horizontal and vertical centrelines of the rectangular box which circumscribes the shape of the lens blank or uncut lens

5.14 near design reference point

Add the following NOTE:

NOTE For a multifocal, progressive-power or degressive-power lens, the near design reference point is a point the position of which is specified by the manufacturer. In the absence of any specification, a point 5 mm below the segment extreme point is to be taken for a multifocal lens with its segment in the usual lower part of the lens, or above the segment extreme point for a segment in the upper part of the lens.

ISO 13666:1998/DAmd 1.2 https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9b-

5.18 'as-worn' pantoscopic angle f4df55b870e9/iso-13666-1998-damd-1-2

Modify the definition:

angle in the vertical plane between the normal to the front surface of the spectacle lens at its boxed centre and the line of sight of the eye in the primary position, usually taken to be the horizontal

Add the statement:

See Figure ((Amd1)).

Add the following NOTE:

NOTE 1 The angle is regarded as positive if the lower part of the lens is tipped closer to the face.

Add a diagram for illustration:



Key:

- 1 'as-worn' pantoscopic angle
- 2 primary position, taken to be horizontal
- 3 normal to the front surface of the lens at its boxed centre
- B boxed centre

Figure ((Amd1)) - Illustration of wearer pantoscopic angle

5.19 Dimensions of lens blanks or lenses DARD PREVIEW

Add the following NOTES: (standards.iteh.ai)

NOTE 1 For round lens blanks or lenses, the terms nominal diameter, effective diameter and useable diameter are ISO 13666:1998/DAmd 1.2 https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9b-

NOTE 2 Where a lens blank or lens is not circular, the horizontal and vertical dimensions shall be given

5.32 visual axis

Change the term to:

line of sight

Add the following NOTE:

NOTE In some countries, particularly the UK, this is known as the visual axis..

((Drafting note: as a consequence, apply the same change throughout the standard, e.g. 5.11, 5.16, 5.27.))

Addition of new terms:

5.28.1 near vision distance distance between the boxed centre and the individual's habitual near working position

NOTE This is generally taken as the distance, often taken as 40 cm, at which a person reads, but the task could equally be sewing or fine assembly.

5.28.2

intermediate vision distance

distance between the boxed centre and a working plane situated further than the near vision distance and closer than far vision distance or indoor distance vision.

NOTE Typical examples are the distance to display screen equipment or the far side of a desk, usually in the range of 50 cm to 120 cm but this can vary widely.

5.28.3

indoor vision distance

distance arbitrarily taken to be between 1,5 m and 3,0 m

5.33

main fixation direction

most common direction of the line of sight relative to the primary position

Clause 7

7.5 toroidal surface

Modify the definition to read as follows:

surface having mutually perpendicular principal meridians of unequal curvature, of which the cross section in both principal meridians is nominally circular ANDARD PREVIEW

Make the present definition NOTE 1, as follows, and re-number the present NOTE as NOTE 2.

NOTE 1 Part of the surface generated by a circular arc rotating about an axis which is in the same plane as the arc but which does not pass through its centre of curvature.

<u>ISO 13666:1998/DAmd 1.2</u> https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9bf4df55b870e9/iso-13666-1998-damd-1-2

7.7 progressive surface

Modify the definition to read as follows:

surface, which is non-rotationally symmetrical, with a continuous change of curvature over a part or whole of the surface

Addition of new terms:

7.9

meridionally-compensated aspherical surface

lens surface of nominal spherical power having different asphericities along its two orthogonal meridians

NOTE 1 In general, meridionally-compensated aspherical surfaces are designed to provide improved optical performance of the finished lens when the other surface is toroidal.

NOTE 2 There will be a continuous variation in asphericity between these two meridians.

7.10

asphericity

qualitative term describing the departure of the curvature of a meridian of an aspherical or atoroidal surface from that of a circle

NOTE 1 The aspherical surface is intended to improve the optical performance of the finished lens away from its optical axis, and/or to improve the cosmetic performance, i. e. to reduce lens thickness and/or weight.

NOTE 2 Asphericity may be described mathematically by the eccentricity, *e*, or a more complex mathematical function.

Clause 8

8.1.7 clear lens

Change to:

colourless lens lens with no noticeable colour in transmission

8.1.8 clear lens

In the definition, adjust the dated reference to ISO 8980-3 by addition of the publication year: lens with a luminous transmittance falling within the range of Category 0 of ISO 8980-3:2003

8.1.10 gradient tinted lens

Amend the definition to read:

lens having a controlled variation in tint (transmittance) over the whole or part of the lens

8.1.13 coated lens

Renumber into 16.1.

8.1.14 balancing lens iTeh Renumber into 8.4.13. D PREVIEW

(standards.iteh.ai)

Addition of new terms:

ISO 13666:1998/DAmd 1.2

8.1.10.1 https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9b-

double gradient-tinted lens f4df55b870e9/iso-13666-1998-damd-1-2 gradient-tinted lens in which tints of one or more colours are used, one colour fading in one direction, the other in the opposite direction, both along the same gradient-tinted direction

NOTE An additional uniform tint may also be applied.

8.1.10.2

gradient-tinted direction

<in a gradient-tinted or double gradient-tinted lens> direction along which the variation in tint occurs

NOTE This is assumed to be vertical unless otherwise ordered.

8.1.12.1

plane of transmission

<of a polarizing lens or filter> any plane intersecting the lens or filter that contains the axis of propagation of the transmitted radiation and is parallel to the orientation of maximal transmission of the electric vector of the transmitted radiation

See Figure ((Amd2)).

NOTE Light reflected from (near) horizontal non-metallic surfaces has the major component with its electric vector horizontal. In a polarizing filter designed to reduce sun glare, the plane of transmission is usually orientated vertically in order preferentially to attenuate the reflected light.

8.1.12.2

intended horizontal orientation

<of a polarizing lens or filter> direction perpendicular to a plane of transmission that passes through the optical centre of a lens (or geometrical centre of a plano filter)

NOTE This is generally intended to be orientated horizontally when mounting to reduce sun glare reflected from horizontal surfaces.

See Figure ((Amd2)).

8.1.12.3 polarizing efficiency

property of a polarizing lens, describing the proportion of the transmitted light that is polarized, defined by the equation

$$P = \frac{\tau_{\rm p\,max} - \tau_{\rm p\,min}}{\tau_{\rm p\,max} + \tau_{\rm p\,min}}$$

where

 $\tau_{p max}$ is the maximum value of luminuous transmittance as determined with 100 % linearly polarized radiation;

 $\tau_{p min}$ is the minimum value of luminuous transmittance as determined with 100 % linearly polarized radiation.

NOTE 1 Polarization efficiency may also be determined, by measurement of the transmittance of two pieces of the same polarizing material in series in unpolarized light, as:

$$P = \sqrt{\frac{h(0) - h(\pi/2)}{h(0) + h(\pi/2)}}$$
iTeh STANDARD PREVIEW
(standards.iteh.ai)

 $h(0) = 0.5(\tau_{p \text{ max}}^2 + \tau_{p \text{ min}}^2)$ is the transmittance when the polarizers are orientated with their transmission axes in alignment, $\frac{1}{44055b870e9/iso-13666-1998-damd-1-2}$

and

 $h(\pi/2) = \tau_{p \max} \cdot \tau_{p \min}$ is the transmittance when the polarizers are orientated with their transmission axes perpendicular to each other,

and where

 $\tau_{p max}$ is the maximum transmittance and $\tau_{p min}$ is the minimum transmittance of one of the polarizers.

NOTE 2 When the two polarizers are set at a relative azimuth θ , the resulting transmittance, $h(\theta)$, is given by

$$h(\theta) = h(0)\cos^2\theta + h(\pi/2)\sin^2\theta$$



Key:

- 1 plane of transmission (vertical)
- 2 direction of intended horizontal orientation of polarizing lens
- 3 horizontal reflecting surface

Figure ((Amd2)) - Illustration of terms for polarizing lenses

8.1.12.4 **iTeh STANDARD PREVIEW** polarizing ratio R_p (standards.iteh.ai) ratio of maximum to minimum luminous transmittances in 100 % linearly polarized radiation $\tau_{p max}$ ISO 13666:1998/DAmd 1.2

 $R_{\rm p} = \frac{\tau_{\rm p\,max}}{\tau_{\rm p\,min}}$

https://standards.iteh.ai/catalog/standards/sist/e16b07f7-0cca-4643-bb9bf4df55b870e9/iso-13666-1998-damd-1-2

8.1.14

centre thickness

thickness of a lens measured at its optical centre or design reference point, or, for a progressive-power lens, at the prism reference point

8.1.15

edge thickness

thickness at a point on the edge of a lens, cut or uncut, measured approximately parallel to the optical axis

NOTE Astigmatic-power, progressive-power and prismatic-power lenses will generally have a variable edge thickness.

8.3.5 progressive-power lens

Amend the definition to read:

lens with at least one progressive surface, that provides increasing (positive) addition power

Addition of new terms:

8.3.6

degressive-power lens

lens with at least one progressive surface, that provides decreasing power (i.e. a negative change of power as the wearer looks up)