FINAL
DRAFT

INTERNATIONAL
STANDARD

**ISO/FDIS
10322-2**

ISO/TC **172**/SC **7**

Secretariat: DIN

Voting begins on:
2015-10-01

Voting terminates on:
2015-12-01

Ophthalmic optics — Semi-finished spectacle lens blanks —

Part 2:
Specifications for progressive-power and degressive-power lens blanks

Optique ophtalmique — Verres de lunettes semi-finis —

Partie 2: Spécifications pour les verres progressifs et dégressifs

Please see the administrative notes on page iii

Reference number
ISO/FDIS 10322-2:2015(E)

ISO/CEN PARALLEL PROCESSING

This final 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. The final draft was established on the basis of comments received during a parallel enquiry on the draft.

This final draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel two-month approval vote in ISO and formal vote in CEN.

Positive votes shall not be accompanied by comments.

Negative votes shall be accompanied by the relevant technical reasons.

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information.

The committee responsible for this document is ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

This fourth edition cancels and replaces the third edition (ISO 10322-2:2006), which has been technically revised.

ISO 10322 consists of the following parts, under the general title *Ophthalmic optics — Semi-finished spectacle lens blanks*:

— *Part 1: Specifications for single-vision and multifocal lens blanks*

— *Part 2: Specifications for progressive-power and degressive-power lens blanks*

Introduction

Compared with previous editions of this part of ISO 10322, the scope now includes degressive-power semi-finished lens blanks.

Ophthalmic optics — Semi-finished spectacle lens blanks —

Part 2: Specifications for progressive-power and degressive-power lens blanks

1 Scope

This part of ISO 10322 specifies requirements for the optical and geometrical properties of semi-finished lens blanks with finished progressive-power and degressive-power surfaces.

2 Normatives 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 7944, *Optics and optical instruments — Reference wavelengths*

ISO 13666, *Ophthalmic optics — Spectacle lenses — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13666 apply.

4 Classification

Semi-finished lens blanks (shortened to lens blanks in the remainder of this part of ISO 10322 for easier reading) are classified according to the finished surface as follows:

a) single-vision lens blanks;

b) multifocal lens blanks;

c) progressive-power and degressive-power lens blanks.

5 Requirements

5.1 General

The tolerances shall apply at a temperature of 23 °C ± 5 °C.

5.2 Optical requirements for the finished surface

5.2.1 General

The optical tolerances shall apply to the manufacturer's stated values at the reference points of the lens blank at one of the reference wavelengths specified in ISO 7944.

The optical tolerances in Table 1 and Table 2 are expressed as surface power values, in dioptres, in the refractive index of the material of the lens blank being measured.

5.2.2 Tolerances on the surface power

The tolerances on the surface power as specified in Table 1 shall apply at the distance reference point of progressive-power lenses and at the near reference point of degressive-power lenses and shall be measured using the method described in 6.2.

Table 1 — Tolerances on the surface power

Values in dioptres (D)

Surface power	Tolerance on the surface power $\frac{F_1 + F_2}{2}$	Tolerance on surface cylindrical power[a] $\lvert F_1 - F_2 \rvert$
≥0,00 and ≤10,00	±0,09	0,09
>10,00 and ≤15,00	±0,12	0,12

NOTE F_1 and F_2 are the maximum and minimum values of the surface power expressed in the refractive index of the material.

[a] Relative to zero, or to any intended surface cylindrical power of the lens blank's design.

5.2.3 Tolerances on the surface addition power for progressive-power lens blanks

The tolerances on the surface addition power as specified in Table 2 shall apply at the reference points and shall be measured using the method described in 6.3.

Table 2 — Tolerances on the surface addition power

Values in dioptres (D)

Surface addition power	Tolerance
≤4,00	±0,12
>4,00	±0,18

5.3 Geometrical tolerances

5.3.1 Tolerances on the size

The sizes are classified as follows:

a) nominal size (d_n): dimension(s), in millimetres, indicated by the manufacturer;

b) effective size (d_e): actual dimension(s), in millimetres;

c) usable size (d_u): dimension(s), in millimetres, of the area that is optically usable:

1) effective size, d_e:

$d_n - 1 \text{ mm} \leq d_e \leq d_n + 2 \text{ mm}$;

2) usable size, d_u:

$d_u \geq d_n - 1 \text{ mm}$ for $d_n \leq 65 \text{ mm}$;

$d_u \geq d_n - 2 \text{ mm}$ for $d_n > 65 \text{ mm}$.

The tolerance on usable sizes does not apply to blanks for lenses with a carrier curve, such as lenticulars.

5.3.2 Tolerances on thickness

5.3.2.1 Centre thickness

The centre thickness, when measured at the geometric centre (unless otherwise stated by the manufacturer), shall be neither less than the minimum thickness stated by the manufacturer nor exceed this minimum thickness by more than 3 mm.

5.3.2.2 Edge thickness

When measured at the point stated by the manufacturer, the edge thickness shall be neither less than the minimum thickness stated by the manufacturer nor exceed this minimum thickness by more than 3 mm.

5.3.3 Orientation requirement for polarizing lens blanks

For polarizing lens blanks intended for sun glare attenuation, the polarizing plane of transmission shall be aligned to the permanent alignment reference markings at 90° ± 3°.

6 Test methods

6.1 General

Alternative measurement methods are acceptable if shown to perform equivalently to the reference test methods in 6.2 to 6.4.

6.2 Determination of surface power

Surface power at the reference point shall be determined using a suitable instrument capable of measuring surface power, by reflection, with an accuracy that is appropriate to the tolerances listed in Table 1.

The optical tolerances in Table 1 are expressed as surface power values, in dioptres, in the refractive index of the material of the lens blank being measured.

NOTE 1 Some surface power instruments can allow setting of the reference refractive index to match that of the actual lens blank being measured. Conversion might be required to establish the tolerance values if the lens blank is measured with equipment calibrated for a different reference refractive index (see Annex B).

NOTE 2 It can be necessary to use a device that limits the aperture of measurement. The recommended range for the measurement aperture is 4 mm to 8 mm.

6.3 Surface addition power measurement for progressive-power lens blanks

6.3.1 General

Surface addition power shall be measured using a suitable instrument capable of measuring surface power, by reflection, with an accuracy that is appropriate to the tolerances listed in Table 2. Measure the powers at the distance reference point and at the near reference point.

NOTE The test method for determining addition power requires the measurement of surface addition power.

When no surface measurement capability exists, an alternative method for addition power measurement using a focimeter is provided in Annex C.