PD ISO/TR 18476:2017

BSI Standards Publication

Ophthalmic optics and instruments — Free form technology — Spectacle lenses and measurement

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National foreword

This Published Document is the UK implementation of ISO/TR 18476:2017.

The UK participation in its preparation was entrusted to Technical Committee CH/172, Ophthalmic optics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2017

ISBN 978 0 580 80197 6

ICS 11.040.70

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 August 2017.

Amendments/corrigenda issued since publication

Date	Text affected

PD ISO/TR 18476:2017

TECHNICAL REPORT

ISO/TR 18476

First edition
2017-06-01

Ophthalmic optics and instruments — Free form technology — Spectacle lenses and measurement

Optique et instruments ophtalmiques — Technologie free form — Verres de lunettes et mesurage

Reference number
ISO/TR 18476:2017(E)

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Foreword

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This document was prepared by Technical Committee ISO/TC 172, *Optics and photonics*, Subcommittee SC 7, *Ophthalmic optics and instruments*.

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TECHNICAL REPORT **ISO/TR 18476:2017(E)**

Ophthalmic optics and instruments — Free form technology — Spectacle lenses and measurement

1 Scope

This document outlines all the steps from refraction to dispensing of spectacles, with particular attention to the benefits added by using free form technology, and provides a collection of relevant terms and descriptions.

This document does not contain the proprietary features of lens designs provided by suppliers.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Technical introduction

4.1 Preliminaries

4.1.1 There are various ways of spelling the term “free form”. This document uses two separate words.

4.1.2 There are various terms explaining spectacle lens optical power design which are commonly used such as “optical function”, “optical characteristics”, “optical properties”, or “design property”. For purpose of simplicity, this document uses the word “characteristics”. The phrase “optical properties” is used simply to describe the optical results of the geometry of the lens, but not an intended design or characteristic.

4.1.3 A typical flowchart including refraction, dispensing and manufacturing is shown in Figure A.1 (see Annex A).

4.1.4 A glossary of terms and their descriptions is provided in Annex C.

4.2 What is free form?

In ophthalmic optics, the term “free form surfacing” refers to a spectacle lens surfacing process that is capable of producing continuous, smooth, non-symmetrical lens surfaces that lack point, axial or plane symmetry and are described by three-dimensional coordinates created by mathematical formulation. This design and surfacing process enables optimization of the lens performance.

Conventional lens surfacing technology which smooths and polishes using hard lap tools can produce only simple spherical or toroidal lens surfaces.

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