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**Textile glass — Staple fibres or  
filaments — Determination of average  
diameter**

*Verre textile — Fibres discontinues et filaments — Détermination du  
diamètre moyen*



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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](http://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](http://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 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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

This fourth edition cancels and replaces the third edition (ISO 1888:2006), which has been technically revised.

The main changes are as follows:

- “Method C” (determination of the diameter by calculation) has been added.

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](http://www.iso.org/members.html).

# Textile glass — Staple fibres or filaments — Determination of average diameter

## 1 Scope

This document specifies three test methods used for determining the average diameter (i.e. the average value of actual diameters) of staple fibres or filaments in a textile glass product.

## 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 472, *Plastics — Vocabulary*

ISO 1889, *Reinforcement yarns — Determination of linear density*

ISO 12154, *Determination of density by volumetric displacement — Skeleton density by gas pycnometry*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 apply.

ISO and IEC maintain terminology 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 Method A: Longitudinal profile

### 4.1 Principle

Fibres or filaments placed in a liquid medium having a refractive index differing from that of the textile glass are viewed in profile under a microscope and the diameter measured.

### 4.2 Apparatus

#### 4.2.1 Microscope, equipped with the following:

- An eye-piece with a built-in micrometer graticule, the eye-piece and objective together giving an overall magnification of at least  $\times 400$  and preferably  $\times 1\,000$ . The resolution of the microscope shall permit measurement to the nearest  $0,5\ \mu\text{m}$  or better.
- A system permitting lateral and rotational movement of the microscope stage.
- An illumination system.

This system may be replaced by or used in conjunction with a microprojector on which specimens can be measured using a transparent scale (preferably a curved scale).