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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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Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Method A: Longitudinal profile **1**
4.1 Principle 1
4.2 Apparatus 1
4.3 Procedure 2

5 Method B: Transverse section **3**
5.1 Principle 3
5.2 Apparatus 3
5.3 Procedure 4

6 Method C: Determination of the diameter by calculation **5**
6.1 Principle 5
6.2 Test specimen 5
6.3 Procedure 6

7 Expression of results **6**

8 Test report **6**

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Foreword

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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.

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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 ×400 and preferably ×1 000. The resolution of the microscope shall permit measurement to the nearest 0,5 µm 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).

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