
**Textile glass — Chopped-strand
and continuous-filament mats —
Determination of average thickness,
thickness under load and recovery
after compression**

*Verre textile — Mats à fils coupés et mats à fils continus —
Détermination de l'épaisseur moyenne, de l'épaisseur sous charge et
de la recouvrance après compression*

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Foreword

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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).

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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.

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

This third edition cancels and replaces the second edition (ISO 3616:2001), which has been technically revised. It also incorporates the Amendment ISO 3616:2001/Amd. 1:2017.

The main changes are as follows:

- an “Introduction” has been added;
- the sampling method (former Clause 6) has been deleted and subsequent clauses have been renumbered;
- the duration for conditioning test specimens has been changed to from at least 16 h to at least 2 h.

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.

Introduction

Chopped-strand and continuous-filament mats are mainly used as reinforcement materials for polymer matrix composites. The average thickness, thickness under load and recovery after compression of the mat are the most basic parameters provided for the composites process design and the final product structure and size design.

Textile glass — Chopped-strand and continuous-filament mats — Determination of average thickness, thickness under load and recovery after compression

1 Scope

This document specifies a method for the determination of the average thickness, the thickness under load and the recovery after compression of chopped-strand and continuous-filament textile-glass mats.

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 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 3374, *Reinforcement products — Mats and fabrics — Determination of mass per unit area*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological 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/>

3.1

average thickness

thickness of a mat, in millimetres, measured in accordance with the specified method, under a specified nominal light pressure

Note 1 to entry: The average thickness determined by this method does not necessarily bear a direct relation to the thickness of a single layer. The regularity of thickness of a mat must be measured on a single layer and with apparatus with a much smaller contact area than that specified in this document.

3.2

thickness under load

thickness of a mat, measured in accordance with the specified method, under a specified heavy pressure applied for a specified time, expressed as a percentage of the initial *average thickness* (3.1)

3.3

recovery after compression

thickness to which the mat recovers after a specified interval following removal of the specified heavy pressure, expressed as a percentage of the initial *average thickness* (3.1)

4 Principle

The distance between the outer surfaces of a pile of superimposed layers of mats, having a total thickness of at least 5 mm, is measured under a specified light pressure. The average thickness is calculated by dividing the value obtained by the number of layers in the pile.