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## **Textile fibres — Determination of linear density — Gravimetric method and vibroscope method**

*Fibres textiles — Détermination de la masse linéique — Méthode  
gravimétrique et méthode au vibroscope*



Reference number  
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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)).

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

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 23, *Fibres and yarns*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO1973:1995), which has been technically revised.

The main changes compared to the previous edition are as follows:

- ISO 6989 has been added as a normative reference in [Clause 2](#) and [8.2.1](#);
- a note specifying the tension application has been added in [3.2](#);
- a correction factor (for measurements on stiff fibres) has been permitted in [4.3](#), [8.2.1](#) and [10.3](#);
- testing equipment without a scale but with a display, respectively connection to a computer system in [4.3](#) for linear density reading is permitted;
- reference to [5.2.2](#) “Forceps” (instead of 5.1.6) has been corrected;
- automatic application of a loading force instead of the use of forceps in [5.2.2](#) and [8.2.3](#) is permitted;
- [Formulae \(A.1\) to \(A.8\)](#) have been corrected;
- grammar and linguistic consistency of definitions in [4.3](#), [8.1.3](#), [8.2.2](#), [9.2.1](#), [A.1](#) and [A.2](#) have been reviewed.

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).

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## Introduction

The linear density of individual fibres is one of the most important physical characteristics in terms of processability and predictability of the next-step intermediate product, such as spun-yarns and nonwovens. Other than testing methods, such as air-permeability on test specimen consisting of mass of fibres (Micronaire), this document describes two measurement methods to determine the mass per unit length (= linear density) using either a bundle of 50 fibres, or on individual fibres. While the first method determines an average value, only, in relatively short time, the second method measures the individual fibre fineness and therefore the statistical distribution of the laboratory sample, too.