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**Textile fibres — Determination of linear density —
Gravimetric method**

Fibres textiles — Détermination de la masse linéique — Méthode gravimétrique

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 38, *Textiles*, has reviewed ISO Recommendation R 1973-1971 and found it technically suitable for transformation. International Standard ISO 257 therefore replaces ISO Recommendation R 1973-1971 to which it is technically identical.

ISO Recommendation R 1973 had been approved by the member bodies of the following countries :

Australia	Iran	South Africa, Rep. of
Brazil	Israel	Spain
Canada	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Netherlands	Thailand
Egypt, Arab Rep. of	New Zealand	Turkey
Finland	Norway	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	
Greece	Romania	

The member bodies of the following countries had expressed disapproval of the Recommendation on technical grounds :

Belgium
India*
U.S.S.R.

* Subsequently, this member body approved the Recommendation.

The member bodies of the following countries disapproved the transformation of the Recommendation into an International Standard :

Belgium
India

Textile fibres — Determination of linear density — Gravimetric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a gravimetric method for the determination of the linear density of textile fibres cut from a length in the straightened state.

Two procedures are specified, applicable respectively to

- a) bundles of fibres;
- b) individual fibres.

The procedure for bundles of fibres can be applied only to those fibres which can be kept rectilinear and parallel during preparation of the bundles. It is not applicable to wool or textured fibres.

2 REFERENCES

ISO 139, *Textiles — Standard atmospheres for conditioning and testing.*

ISO 270, *Textile fibres — Determination of length by measuring individual fibres.*

ISO 1130, *Textile fibres — Some methods of sampling for testing.*

ISO 1144, *Textiles — Universal system for designating linear density (Tex System).*

3 PRINCIPLE

The mass and length of either

- a) bundles of fibres or
- b) individual fibres,

in standard condition, are measured and thence a mean value of the linear density is deduced and expressed in appropriate units. For most purposes, the appropriate units in the Tex System are the millitex and the decitex. (See ISO 1144.)

4 APPARATUS

4.1 Balance, suitable for weighing the bundles of fibres or individual fibres to an accuracy of 1 %.

4.2 Device for cutting the fibres or bundles of fibres to a length known with an accuracy of 1 %¹⁾ and allowing of adjustment of the tension of the bundles to be cut.

4.3 Textile support fabric, of a colour contrasting with that of the fibres to be tested.

4.4 Glass plate, approximately 10 cm × 20 cm in size, with one polished edge.

4.5 Forceps.

5 CONDITIONING AND TESTING ATMOSPHERE

The atmosphere for conditioning and testing shall be one of the standard atmospheres for testing specified in ISO 139.

6 SAMPLING

Sampling shall be carried out in accordance with ISO 1130.

7 PROCEDURE

7.1 General

After preconditioning, bring the sample to constant mass in the standard atmosphere. Carry out the test without removal from the standard atmosphere, following either the procedure specified in 7.2 or that specified in 7.3.

7.2 On bundles of fibres

7.2.1 From the final laboratory sample, take ten tufts having a mass of several milligrams and parallelize the fibres of each tuft by carefully combing them several times.

1) It is convenient to use two razor blades set parallel in a holder.