
INTERNATIONAL STANDARD



920

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Wool — Determination of fibre length (barbe and hauteur) using a comb sorter

Laine — Détermination de la longueur de barbe et de la hauteur des fibres sur appareil à peignes

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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 920-1969 and found it technically suitable for transformation. International Standard ISO 920 therefore replaces ISO Recommendation R 920-1969 (incorporating Amendment 1-1969), to which it is technically identical.

ISO Recommendation R 920 had been approved by the member bodies of the following countries :

Australia	Ireland	South Africa, Rep. of
Austria	Israel	Spain
Chile	Italy	Sweden
Czechoslovakia	Japan	Switzerland
Denmark	Korea, Rep. of	Turkey
France	New Zealand	United Kingdom
Hungary	Norway	U.S.S.R.
India	Portugal	Yugoslavia
Iran	Romania	

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

Belgium	Germany
Egypt, Arab Rep. of	Netherlands

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

Germany
U.S.S.R.

Wool — Determination of fibre length (barbe and hauteur) using a comb sorter

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of wool fibre length, barbe and hauteur, and their coefficients of variation, by means of a comb sorter.

This method is applicable to twistless combed wool slivers and to prepared wool slivers (rovings).

2 REFERENCE

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

3 DEFINITIONS

3.1 barbe : The mean length of the fibres of a sliver or of a roving, calculated from the proportions by mass of the fibres in the sliver or the roving.

If

$n_1, n_2 \dots$ represent the number of fibres in each length group,

$L'_1, L'_2 \dots$ represent the length of each group determined on partially decrimped fibres, expressed in millimetres,

$a_1, a_2 \dots$ represent the linear density of partially decrimped fibres of each group,

$P_1, P_2, \dots$ represent the total mass of the fibres belonging to each length group,

the barbe is equal to

$$\frac{n_1 a_1 L'_1{}^2 + n_2 a_2 L'_2{}^2 + \dots}{n_1 a_1 L'_1 + n_2 a_2 L'_2 + \dots} = \frac{P_1 L'_1 + P_2 L'_2 + \dots}{P_1 + P_2 + \dots}$$

3.2 hauteur : The mean length of the fibres of a sliver or of a roving, calculated from the proportions by titre of the fibres in the sliver or the roving.

If the same symbols are used as for the barbe, the hauteur, expressed in millimetres, is equal to

$$\frac{n_1 a_1 L'_1 + n_2 a_2 L'_2 + \dots}{n_1 a_1 + n_2 a_2 + \dots} = \frac{P_1 + P_2 + \dots}{\frac{P_1}{L'_1} + \frac{P_2}{L'_2} + \dots}$$

1) This slight twisting is intended to prevent the test piece from losing fibres or from becoming distorted during its exposure to the standard atmosphere.

4 PRINCIPLE

A numerical sample of the fibres is taken and the fibres are classified by lengths. They are then divided into length groups and weighed.

5 APPARATUS

5.1 Balance, having an accuracy of 1 mg.

5.2 Comb sorter, consisting basically of a bed of combs which can be lowered successively and of which the spacings determine the classes of the fibre lengths.

This apparatus shall permit the following operations :

- successive draws of several tufts of fibres at the squared-off end of a sliver or a roving;
- the deposition of these tufts as they are drawn onto the comb bed so that the aligned ends of the combed fibres in each tuft are placed on the last comb;
- the removal of the fibres which project beyond each comb by means of a drawing-off system, starting with the longest fibres.

A type of apparatus which performs these operations semi-automatically is described in the annex.

The apparatus used shall permit the application of the method with a reproducibility at least equivalent to that indicated in 9.3.

6 PREPARATION OF TEST PIECES

From each sliver or roving to be tested, a test piece of 1 m in length shall be taken. It shall be twisted (approximately twenty twists), and its two ends placed side by side and held in the hand, so that the folded sliver or roving then twists slightly upon itself¹⁾.

The test piece, which shall be slightly dry, shall be placed in one of the standard atmospheres for testing defined in ISO 139, and kept for 24 h in this atmosphere.