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Tekstilije - Bombažna vlakna - Določanje mikronerske vrednosti

Textiles - Cotton fibres - Determination of micronaire value

Textiles - Fibres de coton - Détermination de l'indice micronaire

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Textiles — Cotton fibres — Determination of micronaire value

Textiles — Fibres de coton — Détermination de l'indice micronaire

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Contents

Page

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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 38, *Textiles*, Subcommittee SC 23, *Fibres and yarns*.

This second edition of ISO 2403 cancels and replaces the first edition (ISO 2403:1972), which has been technically revised.

Textiles — Cotton fibres — Determination of micronaire value

1 Scope

This International Standard specifies a method of determining the micronaire value of loose disorientated cotton fibres taken from bales, laps and slivers, or other sources of lint cotton.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

3 Terms and definitions

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

3.1
micronaire value
measure of the air permeability of a mass of cotton under specified conditions, expressed in terms of an arbitrary scale, the so-called micronaire scale

Note 1 to entry: The micronaire scale is based on a range of cottons to which micronaire values have been assigned by international agreement.

4 Principle

Air is passed through a test specimen consisting of a plug of fibres. The permeability is indicated on a scale for recording variations in either the rate of flow through, or the pressure difference across, the plug. The mass and volume of the test specimen are either a constant for a given type of instrument or varied appropriately in relation to each other. The scale indicating variations in permeability can be calibrated in arbitrary units of micronaire value or marked in the appropriate absolute units of rate of flow or of pressure difference and a table or graph provided for conversion of the observed readings into micronaire values.

5 Apparatus and materials

5.1 Balance of sufficient capacity to weigh the test specimen required for the airflow instrument used, with an accuracy of ±0,2 %.

5.2 Airflow instrument, whose principal parts are:

5.2.1 Compression cylinder with perforated ends of such dimensions that with the prescribed mass of specimen each cubic centimetre shall contain between 0,16 g and 0,30 g of cotton when compressed.

5.2.2 Means for measuring the air permeability of the specimen, comprising, for example:

a) a suitable air pump;

b) one or more valves or other means for controlling the flow of air through, or the pressure difference across, the specimen in the compression cylinder;

c) a manometer for measuring the required air pressure difference across the specimen and a flowmeter for indicating the rate of airflow through it.

NOTE Details of certain commercially available instruments which comply with this specification are given in the Appendices to this International Standard. The method of calibration of airflow instruments is described in Annex A.

5.3 International calibration cotton standards (see A.1).

6 Atmosphere for conditioning and testing

6.1 Condition test samples in the standard atmosphere for 4 h in moving air (or alternatively for 12 h in still air) or for a shorter time if the change in mass in a 2 h period does not exceed 0,25 % before weighing and testing the specimen. Preconditioning is not required.

6.2 Weigh and test the specimen in the standard atmosphere for conditioning (see ISO 139).

7 Test Specimen

7.1 Take test specimens in accordance with the instructions given in ISO 1130, or specimens and samples can be drawn in other ways with prior agreement between the parties concerned.

7.2 Remove from the sample foreign bodies such as seed, sand, pieces of stalk, and other impurities. Use a test specimen of the size prescribed for the instrument being used. In instruments having a compression cylinder of fixed volume, weigh the specimen to within ±0,2 % of the specimen size appropriate for the instrument (see Annexes). In instruments having compression cylinders with adjustably varied volume, determine the mass of the specimen with an accuracy of ±0,2 %.

7.3 Test the number of specimens per sample or per lot or shipment, and specify the scheme for the selection of samples, as agreed between the parties concerned.

8 Procedure

8.1 Before each series of measurements, make the necessary preliminary adjustments appropriate to the instrument in use (see Annexes). From time to time, test a minimum of two check specimens from each of three calibration cottons (see Annex A) covering the range of micronaire values of samples to be tested to determine whether or not the instrument is correctly adjusted and is giving results on the correct level.

8.1.1 Consider the performance of any instrument to be within the requirements of this International Standard if the average results for each such calibration cotton do not differ from its corresponding established values by more than ±0,10 micronaire scale unit.

8.1.2 Re-test, by the above procedure, cottons giving differences greater than ±0,10 micronaire scale unit between the average of the two tests and the established value. Accept the results if the difference between the two new micronaire values for such a cotton does not exceed ±0,10 micronaire scale unit. If the difference continues to be greater than ±0,10 micronaire scale unit, either re-adjust the instrument and repeat the above check procedure or apply, on the basis of the established differences referred to

above, an appropriate correction or adjustment to test values for subsequent samples submitted for testing.

8.2 Pack the test specimen evenly into the compression cylinder, a small portion at a time, fluffing the fibres with the fingers in order to break up any lumps and taking care that all the fibres are inserted in the cylinder. Put the compression plunger in position and lock it.

8.3 Cause air to flow through the specimen at the appropriate flow (or pressure) and note the reading on the airflow (or pressure difference) scale of the instrument to an accuracy of about ±1 %.

8.4 If a second measurement is required for the same specimen, remove the cotton from the instrument, taking care not to lose fibre, and repeat the procedure given in 8.2 and 8.3.

9 Calculation and expression of results

9.1 For instruments in which the scale is graduated in micronaire values, average the readings for the specimens tested from a sample. If necessary, apply any correction based on 8.1.2 and report the average to the nearest 0.1 micronaire value.

9.2 For instruments in which the scale is graduated in units other than micronaire values, convert the direct readings to micronaire values from a previously established conversion curve or statistical relation as described in Annex A. Calculate the converted values as described in 9.1.

10 Test report

The test report shall include the following information:

a) reference to this International Standard (i.e. ISO 2403:2014);

b) the material source (lint cotton, picker lap, processing waste) and, if possible, type and/or botanical species (*desi*, Upland, *G. barbadense*);

c) the number of specimens tested, the number of readings per specimen, the number of samples used, and the scheme for drawing them;

d) the average values calculated;

e) the type, make, and model of instrument used.