



SLOVENSKI STANDARD
SIST EN 14278-1:2004

01-julij-2004

HY_glj]`Y`!`I [cHj`Ub`Y`Yd`!j cgh]`Vca VUyb]` j`U_Yb`!`%`XY.`A YtcXUn`fc bc
bUdfUj c`nU`cd`c`fbc`nUnbUj Ub`Y`df]gc`fbc`gh]

Textiles - Determination of cotton fibre stickiness - Part 1: Method using a manual thermodetection device

Textilien - Bewertung der Klebrigkeit von Baumwolle - Teil 1: Verfahren mit dem manuellen Thermodetektionsgerät

Textiles - Determination du collage des fibres de coton - Partie 1: Méthode utilisant un dispositif manuel de thermodétection

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Ta slovenski standard je istoveten z: EN 14278-1:2004

ICS:

59.060.10 Naravna vlakna Natural fibres

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14278-1

May 2004

ICS 59.060.10

English version

Textiles - Determination of cotton fibre stickiness - Part 1: Method using a manual thermodetection device

Textiles - Determination du collage des fibres de coton -
Partie 1: Méthode utilisant un dispositif manuel de
thermodétection

Textilien - Bewertung der Klebrigkeit von Baumwolle - Teil
1: Verfahren mit dem manuellen Thermodetektionsgerät

This European Standard was approved by CEN on 23 February 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14278-1:2004) has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2004, and conflicting national standards shall be withdrawn at the latest by November 2004.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EN 14278-1:2004 (E)**Introduction**

The aim of this method is to determine the stickiness potential of cotton fibres by simulating the negative effects of this characteristic during the spinning process. Origins of stickiness are not studied.

Results of this method are not directly related to the determination of sugar content.

This standard consists of the following methods, under the general title "Textiles - Determination of cotton fibre stickiness":

- Part 1: Method using a manual thermodetection device
- Part 2: Method using an automatic thermodetection plate device
- Part 3: Method using an automatic rotating drum device

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1 Scope

The standard describes a manual technique to simulate the tendency of cotton fibres to stick to textile working surfaces.

Test specimens can be raw cotton fibre (fibre sampled e.g. from a bale), or opened fibre, slivers, etc.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 20139 *Textiles - Standard atmospheres for conditioning and testing (ISO 139:1973)*

3 Terms and definitions

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

3.1

stickiness level

number of sticky points indicating the incidence of cotton fibre stickiness

3.2

thermodetection

action of revealing sticky points through the combined application of heat and pressure

3.3

sticky points

entanglement of fibres or individual fibres that are attached to a working surface as a result of the inherent stickiness of the cotton

3.4

ensemble

upper and lower aluminium foils enclosing a fibre sample

3.5

remover

device to take away the non sticking fibres from the counting surface

4 Principle

A fibre web, whose surface area and mass are fixed, is placed between two sheets of aluminium foil and pressed at two pressure levels applied successively at different temperature settings to reveal sticky points.

The sticky points are then counted to evaluate the level of stickiness.

EN 14278-1:2004 (E)**5 Apparatus****5.1 Manual thermodetection device**

A manual thermodetection device comprises:

NOTE The test method has been developed from practice where values of the major parameters (i.e. applied forces, surface area, temperature and time) have been fixed. Deviation from these values could influence the results.

- a) one rectangular lower (e.g. wooden or other material with similar thermal insulating characteristics) board covered with a copper-plated aluminium platen whose surface area is at least 640 mm x 220 mm;
- b) one rectangular heating plate with dimensions of (640 ± 5) mm x (280 ± 5) mm. Ensure that a force of (780 ± 50) N is evenly distributed on the ensemble. The temperature is set at $(84 \pm 4)^{\circ}\text{C}$ using an electronic regulator.
- c) one rectangular upper (e.g. wooden) board, with dimensions of (640 ± 5) mm x (220 ± 5) mm. Ensure that a force of (590 ± 50) N is evenly distributed on the preparation.

The devices to apply forces and temperature shall be securely located to ensure even pressure distribution on the specimen.

5.2 Aluminium foil

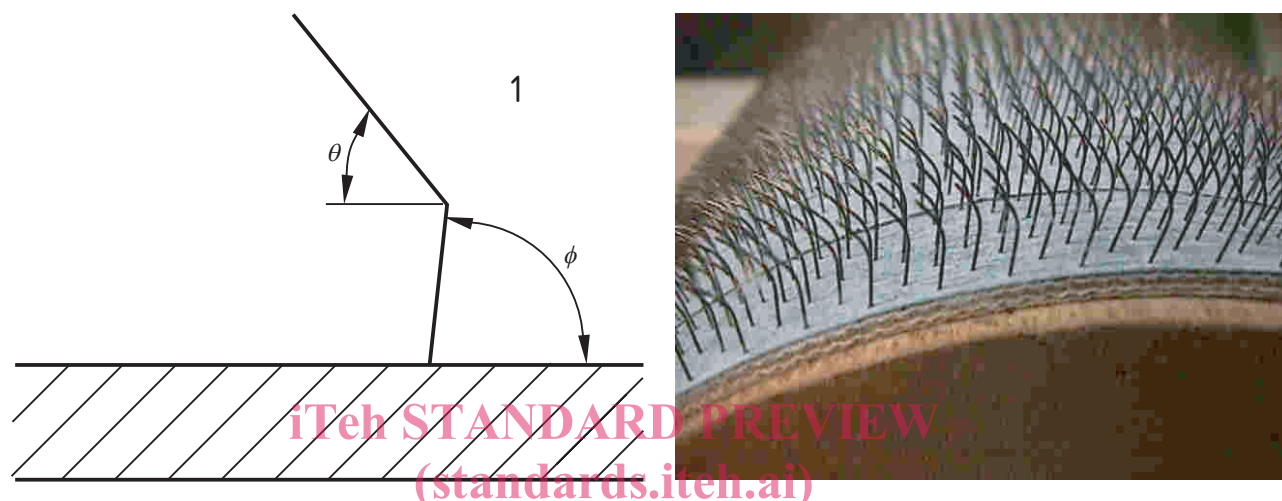
A sheet of aluminium of minimum width 250 mm, with a thickness of (15 ± 5) μm or a mass of $(40 \pm 13,5)$ g/m^2 , having at least one matt surface showing no traces of oxidation.

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5.3 Electromechanical opener and accessories

Comprising:

- a) A rotating cylinder covered by a flexible card clothing : wires with a density of 8 teeth per cm^2 (also expressed generally as "50 teeth per square inch"), having a length of 11 mm with angles of $12^\circ/30^\circ$ (Figure 1) and diameter of 0,5 mm, a feeding plate and feeding cylinder.



$$\phi = 12^\circ$$

$$\theta = 30^\circ$$

$$1 = \text{Pin}$$

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Figure 1 - Electromechanical opener and accessories

- b) The rotating cylinder width and diameter are calculated to obtain a fibre web whose dimensions are $(540 \pm 20) \text{ mm} \times (160 \pm 20) \text{ mm}$.
- c) The feeding cylinder diameter is $(35 \pm 1) \text{ mm}$.
- d) The speed of the rotating cylinder is $(50 \pm 25) \text{ r/min}$.
- e) Gear ratio between rotating cylinder and feeding cylinder is of 40/1 to 41/1.

NOTE A rotating cylinder (without card clothing) with a diameter of $(155 \pm 1) \text{ mm}$ and a width of $(200 \pm 1) \text{ mm}$ has been found suitable.

The feeding table width is $(164 \pm 1) \text{ mm}$.

5.4 Accessories

- a) A knitting needle of minimum length 200 mm to extract the fibre web.
- b) A brush to clean the flexible card wire clothing of the electromechanical opener.