Textiles - Determination of the fabric propensity to surface pilling, fuzzing or matting - Part 3: Random tumble pilling method (ISO 12945-3:2014)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 12945-3:2014 sisaldab Euroopa standardi EN ISO 12945-3:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 12945-3:2014 consists of the English text of the European standard EN ISO 12945-3:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.07.2014.	Date of Availability of the European standard is 02.07.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Textiles - Determination of the fabric propensity to surface pilling, fuzzing or matting - Part 3: Random tumble pilling method (ISO 12945-3:2014)

Textiles - Détermination de la propension des étoffes à l'ébouriffage en surface et au boulochage - Partie 3: Méthode de boulochage par projections aléatoires dans une chambre cylindriques (ISO 12945-3:2014)

Textilien - Bestimmung der Neigung von textilen Flächengebilden zur Pill-, Flusen- oder Filzbildung auf der Oberfläche - Teil 3: Random-Tumble-Pilling-Verfahren (ISO 12945-3:2014)

This European Standard was approved by CEN on 21 June 2014.

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

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Foreword

This document (EN ISO 12945-3:2014) has been prepared by Technical Committee ISO/TC 38 “Textiles” in collaboration with 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of an identical text or by endorsement, at the latest by January 2015, and conflicting national standards shall be withdrawn at the latest by January 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 12945-3:2014 has been approved by CEN as EN ISO 12945-3:2014 without any modification.

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Introduction

Pills are formed when fibres on a fabric surface “tease out” and become entangled during wear. Such surface deterioration is generally undesirable, but the degree of consumer tolerance for a given level of pilling will depend on the garment type and fabric end use.

Generally, the level of pilling which develops is determined by the rates of the following parallel processes:

a) fibre entanglement leading to pill formation;

b) development of more surface fibre;

c) fibre and pill wear-off.

The rates of these processes depend on the fibre, yarn, and fabric properties. Examples of extreme situations are found in fabrics containing strong fibres versus fabric containing weak fibres. A consequence of the strong fibre is a rate of pill formation that exceeds the rate of wear-off. This results in an increase of pilling with an increase of wear. With a weak fibre, the rate of pill formation competes with the rate of wear-off. This would result in a fluctuation of pilling with an increase of wear. There are other constructions where surface fibre wear-off occurs before pill formation. Each of these examples demonstrates the complexity of evaluating the surface change on different types of fabric.

The ideal laboratory test would accelerate the wear processes a), b), and c) by exactly the same factor and would be universally applicable to all fibre, yarn, and fabric types. No such test has been developed. However, a test procedure has been established in which fabrics can be ranked in the same order of fuzzing and pilling propensity as is likely to occur in end use wear.

Particular attention is drawn to Annex A which gives advice on the maintenance and checking of the apparatus and liners. It is recommended that Annex A be studied prior to carrying out the procedure.

In Bibliography, some listed national standards have been taken into consideration as they refer to the use of the equipment, on which this part of ISO 12945 is based.

Textiles- Determination of the fabric propensity to surface pilling, fuzzing or matting —

Part 3:
Random tumble pilling method

1 Scope

This part of ISO 12945 describes a method for the determination of the resistance to pilling, fuzzing, and matting of textile fabrics using the random tumble pilling tester. This method is applicable to most of woven and knitted fabrics, including napped fabrics (fleeces, inlay fabrics).

This method is not applicable to fabrics which cannot tumble freely.

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 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

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

3 Terms and definitions

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

3.1
fuzzing
roughing up of the surface fibres and/or teasing out of the fibres from the fabric, which produces a visible surface change

Note 1 to entry: This change can occur during washing, dry cleaning, and/or wearing.

3.2
pills
entangling of fibres into balls (pills) which stand proud of the fabric and are of such density that light will not penetrate and will cast a shadow

Note 1 to entry: This change can occur during washing, dry cleaning, and/or wearing.

3.3
pilling
generation of pills over the surface of the fabric

3.4
jamming, wedging, or entanglement
when specimens either become entangled on the impeller or lie on the side of the cylinder wall resulting in the fabric not tumbling in the required random action