# Footwear - Test methods for uppers, lining and insocks - Thermal insulation

Footwear - Test methods for uppers, lining and insocks - Thermal insulation



#### **EESTI STANDARDI EESSÕNA**

#### **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN
13521:2002 sisaldab Euroopa standardi
EN 13521:2001 ingliskeelset teksti.

Käesolev dokument on jõustatud 16.05.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 13521:2002 consists of the English text of the European standard EN 13521:2001.

This document is endorsed on 16.05.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

#### Käsitlusala:

This European Standard specifies a test method for determining the thermal conductivity of uppers, lining and insocks irrespective of the material, in order to assess the suitability for the end use.

#### Scope:

This European Standard specifies a test method for determining the thermal conductivity of uppers, lining and insocks irrespective of the material, in order to assess the suitability for the end use.

**ICS** 61.060

**Võtmesõnad:** conditioning, definition, definitions, determination, fitness for purpose, footwear, insulations, linings (footwear), measurement, operating requirements, sampling, sampling methods, shafts, shoe manufacture, shoes, soles, testing, thermal insulation

### EUROPEAN STANDARD NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

EN 13521

November 2001

ICS 61,060

#### **English version**

## Footwear - Test methods for uppers, lining and insocks - Thermal insulation

Chaussures - Méthodes d'essai des tiges, de la doublure et des premières de propreté - Isolation thermique

Schuhe - Prüfverfahren für Schäfte, Futter und Deckbrandsohlen - Wärmedämmung

This European Standard was approved by CEN on 4 October 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

### Contents

ore			
l			
2			
3			
ļ	Apparatus and material		
5	Sampling and conditioning		
5 5.1 5.2	Principle		
•		<u></u>	
3			

#### **Foreword**

This European Standard has been prepared by Technical Committee CEN/TC 309 "Footwear", the secretariat of which is held by AENOR.

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 May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Solotorion opposition of the state of the st Switzerland and the United Kingdom.

#### 1 Scope

This European Standard specifies a test method for determining the thermal conductivity of uppers, lining and insocks irrespective of the material, in order to assess the suitability for the end use.

#### 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 12222 Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear.

#### 3 Terms and definitions

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

#### 3.1

#### thermal insulation

thermal conductivity of a material under static conditions

#### 3.2

#### upper

materials forming the outer surface of the footwear which is attached to the sole assembly and covers the upper dorsal surface of the foot. In the case of boots this also includes the outer face of the material covering the leg. Only the materials that are visible are included, no account should be taken of underlying materials

#### 3.3

#### complete upper assembly

finished upper, fully seamed, joined or laminated as appropriate, comprising the centre material and any lining(s) together with all components such as interlinings, adhesives, membranes, foams or reinforcements, but excluding toe puffs and stiffeners

NOTE The complete upper assembly can be flat, 2-dimensional or comprise lasted upper in the final footwear.

#### 4 Apparatus and material

The following apparatus and material shall be used:

- **4.1** "Lees' disc" apparatus, see Figure 1, including the following:
- **4.1.1** Cylindrical brass block, which will subsequently be referred to as block B1, with:
- **4.1.1.1** Diameter of approximately 75 mm which is known with an accuracy of 0,2 mm.
- **4.1.1.2** Height of approximately 25 mm which is known with an accuracy of 0,2 mm.
- **4.1.1.3** Hole of diameter 2 mm  $\pm$  0,1 mm drilled radially to its centre.
- **4.1.1.4** Type K thermocouple inserted into the hole until its junction is at the bottom of the hole.