

**Riietus. Füsioloogiline toime. Soojusisolatsiooni
mõõtmise termilise mannekeeni abil (ISO
15831:2004)**

Clothing - Physiological effects - Measurement of
thermal insulation by means of a thermal manikin

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 15831:2004 sisaldab Euroopa standardi EN ISO 15831:2004 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 18.05.2004 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on .</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 15831:2004 consists of the English text of the European standard EN ISO 15831:2004.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 18.05.2004 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text .</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

ICS 61.020

Võtmesõnad:

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

ICS 61.020

English version

Clothing – Physiological effects

Measurement of thermal insulation by means of a thermal manikin
(ISO 15831 : 2004)

Vêtements – Effets physiologiques –
Mesurage de l'isolation thermique à
l'aide d'un mannequin thermique
(ISO 15831 : 2004)

Bekleidung – Physiologische Wirkun-
gen – Messung der Wärmeisolation
mittels einer Thermopuppe
(ISO 15831 : 2004)

This European Standard was approved by CEN on 2004-01-05.

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.

The European Standards exist 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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

Foreword

International Standard

ISO 15831 : 2004 Clothing – Physiological effects – Measurement of thermal insulation by means of a thermal manikin,

which was prepared by ISO/TC 38 'Textiles' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 162 'Protective clothing including hand and arm protection and lifejackets', the Secretariat of which is held by DIN, as a European Standard.

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

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

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

Endorsement notice

The text of the International Standard ISO 15831 : 2004 was approved by CEN as a European Standard without any modification.

Contents

	Page
Foreword	2
1 Scope	3
2 Terms and definitions	3
3 Symbols and units	4
4 Principle	4
5 Apparatus	5
5.1 Manikin	5
5.2 Controlled climatic chamber	6
6 Selection and preparation of test garments	7
7 Test procedure	7
8 Recalibration of the manikin system	8
9 Calculation of test results	8
9.1 General	8
9.2 Serial model — Surface area weighted thermal insulation	8
9.3 Parallel model — Surface area averaged thermal insulation	8
10 Precision of results	9
11 Test report	9
Annex A (informative) Calculation of test results	10
Bibliography	12

1 Scope

This International Standard describes the requirements of the thermal manikin and the test procedure used to measure the thermal insulation of a clothing ensemble, as it becomes effective for the wearer in practical use in a relatively calm environment, with the wearer either standing or moving.

NOTE This thermal insulation, among other parameters, can be used to determine the physiological effect of clothing on the wearer in specific climate/activity scenarios.

2 Terms and definitions

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

2.1

clothing ensemble

group of garments worn together on the body at the same time

2.2

thermal insulation of clothing

temperature difference between the wearer's skin surface and ambient atmosphere divided by the resulting dry heat flow per unit area in the direction of the temperature gradient where the dry heat flow consists of conductive, convective and radiant components

NOTE Depending on the end use of the clothing, different thermal insulation values can apply.

2.2.1

total thermal insulation of clothing

I_t

total thermal insulation from skin to ambient atmosphere, including clothing and boundary air layer, under defined conditions measured with a stationary manikin

2.2.2

resultant total thermal insulation of clothing

I_{tr}

total thermal insulation from skin to ambient atmosphere, including clothing and boundary air layer, under defined conditions measured with a manikin moving its legs and arms