საქართველოს სტანდარტი

თერმული გარემოს ერგონომიკა - ადამიანის რეაქციების შეფასების მეთოდები ზედაპირებთან კონტაქტში - ნაწილი 3: ცივი ზედაპირები (ისო 13732-3:2005)

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

სსტ ენ ისო 13732-3:2008/2019

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2019 წლის 6 დეკემბრის № 98 განკარგულებით

3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ ისო 13732-3:2008 „თერმული გარემოს ერგონომიკა - ადამიანის რეაქციების შეფასების მეთოდები ზედაპირებთან კონტაქტში - ნაწილი 3: ცივი ზედაპირები (ისო 13732-3:2005)”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2019 წლის 6 დეკემბერი №268-1.3-016552

EUROPEAN STANDARD

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EN ISO 13732-3

September 2008

ICS 13.180

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English Version

Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 3: Cold surfaces (ISO 13732-3:2005)

Ergonomie des ambiances thermiques - Méthodes d'évaluation de la réponse humaine au contact avec des surfaces - Partie 3: Surfaces froides (ISO 13732-3:2005)

Ergonomie der thermischen Umgebung - Bewertungsmethoden für Reaktionen des Menschen bei Kontakt mit Oberflächen - Teil 3: Kalte Oberflächen (ISO 13732-3:2005)

This European Standard was approved by CEN on 25 August 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

The text of ISO 13732-3:2005 has been prepared by Technical Committee ISO/TC 159 “Ergonomics” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 13732-3:2008 by Technical Committee CEN/TC 122 “Ergonomics” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by March 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

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.

This document supersedes EN ISO 13732-3:2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral part of this document.

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Endorsement notice

The text of ISO 13732-3:2005 has been approved by CEN as a EN ISO 13732-3:2008 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 98/37/EC on machinery, amended by 98/79/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Directive 98/37/EC, amended by 98/79/EC

Clause(s)/sub-clause(s) of this EN	Essential Requirements (ERs) of Directive 98/37/EC, amended by 98/79/EC	Qualifying remarks/Notes
Clauses 4 to 8	1.1.5, 1.5.5, 1.7.2	-

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Annex ZB
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

Table ZB.1 — Correspondence between this European Standard and Directive 2006/42/EC

Clause(s)/sub-clause(s) of this EN	Essential Requirements (ERs) of Directive 2006/42/EC	Qualifying remarks/Notes
All clauses	Annex I: 1.1.6, 1.5.5, 1.7.2	-

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

INTERNATIONAL STANDARD

ISO 13732-3

First edition
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Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces —

Part 3: Cold surfaces

Ergonomie des ambiances thermiques — Méthodes d'évaluation de la réponse humaine au contact avec des surfaces —

Partie 3: Surfaces froides

Reference number
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 13732-3 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European Standard..." to mean "...this International Standard...".

ISO 13732 consists of the following parts, under the general title *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces*:

— *Part 1: Hot surfaces*

— *Part 2: Human contact with surfaces at moderate temperature* [Technical Specification]

— *Part 3: Cold surfaces*

For the purposes of this part of ISO 13732, the CEN annex regarding fulfilment of European Council Directives has been removed.

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Foreword

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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 June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directives.

EN ISO 13732 consists of the following parts, under the general title "Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces"[1)]:

— Part 1: Hot surfaces;

— Part 3: Cold surfaces.

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.

1) Part 2: has been published as ISO Technical specification ISO/TS 13732-2:2001 Human contact with surfaces at moderate temperature.

Introduction

This European Standard is a type B standard as stated in EN ISO 12100. The provisions of this document may be supplemented or modified by a type C standard.

NOTE For machines which are covered by the scope of a type C standard and which have been designed and built according to the provisions of that standard, the provisions of that type C standard take precedence over the provisions of this type B standard.

Working with unprotected hands is often inevitable in the cold operation when a precision task is demanded. However the contact of bare skin with cold surfaces reduces skin temperature, causing acute effects such as discomfort, pain, numbness or frostbite. In addition repeated cold exposures with severe cooling of the skin may induce non-freezing cold injury (possible damage of nerves or vessels). Although the existing international standards are at hand for the assessment of the cold hazards involved, no standard concerns the special problems of contacting cold surfaces so far. Assessment of contact cooling is thus considered necessary.

To assess the risk of the cold injury, it is necessary to know the major factors affecting principally hand/finger cooling on cold surfaces. These factors involve:

— properties of the object surface;

— temperature of the cold surface and ambience;

— duration of contact between the skin and the surface;

— characteristics of hand/finger skin and the type and nature of the contact.

In practice, these factors are somewhat interacted and complicated. The type of contact material has an impact on the contact time at various cold temperatures. Thus, the contact time for the critical contact temperature limits on cold surfaces were empirically correlated with the major factors such as thermal penetration coefficient and surface temperature of the material, respectively. The statistically non-linear models (empirical models) based on the database of lower quartile (75 % protected) are able to estimate the finger/hand contact cooling of a large range of individuals on the cold surfaces.

This European Standard is designed to integrate all results obtained from the experimental research with both human fingers and an artificial finger. It outlines a guideline document for the specification of safe time limits of hand/finger contact with various cold surfaces.