

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

BS EN ISO 28803:2012



BSI Standards Publication

Ergonomics of the physical environment — Application of international standards to people with special requirements (ISO 28803:2012)

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

raising standards worldwide™



This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of EN ISO 28803:2012.

The UK participation in its preparation was entrusted to Technical Committee PH/9/-/1, Ergonomics of the physical environment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2012. Published by BSI Standards Limited 2012

ISBN 978 0 580 78617 4

ICS 13.180

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2012.

Amendments issued since publication

Date	Text affected
------	---------------

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

EUROPÄISCHE NORM

March 2012

ICS 13.180

English Version

Ergonomics of the physical environment - Application of international standards to people with special requirements (ISO 28803:2012)

Ergonomie de l'environnement physique - Application des Normes internationales aux personnes ayant des exigences particulières (ISO 28803:2012)

Ergonomie der physikalischen Umgebung - Anwendung Internationaler Normen für Personen mit besonderen Bedürfnissen (ISO 28803:2012)

This European Standard was approved by CEN on 14 March 2012.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

Foreword

This document (EN ISO 28803:2012) has been prepared by Technical Committee ISO/TC 159 "Ergonomics" in collaboration with 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 September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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.

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

Endorsement notice

The text of ISO 28803:2012 has been approved by CEN as a EN ISO 28803:2012 without any modification.

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General factors requiring consideration when designing or evaluating environments for people with special requirements	2
5 Considerations related to design and evaluation of the thermal environment	3
5.1 Factors requiring special consideration for design and evaluation	3
5.2 Moderate thermal environments and people with special requirements	4
5.3 Hot environments and people with special requirements	5
5.4 Cold environments and people with special requirements	6
5.5 Supporting standards for evaluation of thermal environments	6
5.6 Thermal disabilities	7
6 Considerations related to design and evaluation of the acoustic environment	9
6.1 General factors requiring consideration when designing and evaluating environments for people with special requirements	9
6.2 ISO 7731, <i>Ergonomics — Danger signals for public and work areas — Auditory danger signals</i>	11
6.3 ISO 11429, <i>Ergonomics — System of auditory and visual danger and information signals</i>	12
6.4 ISO 9355-2, <i>Ergonomic requirements for the design of displays and control actuators — Part 2: Displays</i>	12
6.5 ISO 9921, <i>Ergonomics — Assessment of speech communication</i>	12
6.6 IEC 60268-16, <i>Sound system equipment — Part 16: Objective rating of speech intelligibility by speech transmission index</i>	13
7 Assessment of visual and lighting environments	13
7.1 General	13
7.2 Contrast sensitivity	14
7.3 ISO 8995, <i>Lighting of indoor work places</i>	14
7.4 Lighting for older people	14
8 Considerations related to air quality	14
9 Considerations related to assessment of other environmental components	15
9.1 General	15
9.2 Vibration environments	15
9.3 Interaction of environmental components	16
10 Environmental design and adaptive opportunity	16
Bibliography	18

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

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.

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

ISO 28803 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment*.

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

Introduction

This is one of a series of International Standards concerned with the ergonomics of the physical environment. This International Standard complements others in the series concerned with specific components of the environment, such as thermal environments, acoustics, lighting or air quality, building upon them to allow an assessment of human response to the total environment. This International Standard is particularly concerned with extending the scopes of other International Standards — see 5.2.2, 5.3.2 to 5.3.5, 5.4.2, 5.5, 6.2 to 6.6, 7.3 and 9.2 — so that they can be applied to as wide a range of people as possible. The background information it provides on the responses and needs of groups of persons with special requirements will contribute to accessible environmental designs that will complement other activities in the field of ergonomics.

This International Standard includes a description of the range and variety of responses and adaptations to physical environments of people with special requirements, and the consequences for measuring and evaluating those environments. It considers the application of indices and methods for people with special requirements where health and safety, comfort and well-being are considerations. It provides a description of the nature of the particular characteristics of people with special requirements in the context of their responses to environments (e.g. restricted sensation, reduced perception or ability to respond). It is not a database of characteristics of people with special requirements, but uses data from ISO/TR 22411 to provide methods and criteria that will in turn provide accessible environments.

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS EN ISO 28803:2012". [Click here to purchase the full version from the ANSI store.](#)

Ergonomics of the physical environment — Application of International Standards to people with special requirements

1 Scope

This International Standard describes how International Standards concerned with the ergonomics of the physical environment can be applied for people with special requirements, who would otherwise be considered to be beyond the scope of those standards. It has been produced according to the principles of accessible design provided in ISO/IEC Guide 71 and using the data provided in ISO/TR 22411.

It is not restricted to any specific environment but provides the general principles that allow assessment and evaluation, and can contribute to the development of standards concerned with specific environments. It is applicable to built environments as well as to other indoor, vehicle and outdoor environments. Nor is it restricted to specific environmental components; it includes assessment of acoustic environments, thermal environments, lighting, air quality and other environmental factors that could be considered to influence the health, comfort and performance of people with special requirements in an environment.

It is applicable to all occupants of such environments who can be considered to have special requirements.

NOTE This will depend upon context and can, for example, include babies, infants, men or women, people with disabilities, older or ill people. A person could have a special requirement in one type of environment but not in another.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 13731, *Ergonomics of the thermal environment — Vocabulary and symbols*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13731 and the following apply.

3.1

accessible design

design focussed on principles of extending standard design to people with some type of performance limitation to maximize the number of potential customers who can readily use a product, building or service which may be achieved by

- designing products, services and environments that are readily usable by most users without any modification,
- making products or services adaptable to different users (adapting user interfaces), and
- having standardized interfaces to be compatible with special products for persons with disabilities

NOTE 1 Terms such as design for all, barrier-free design, inclusive design and transgenerational design are used similarly but in different contexts.

NOTE 2 Accessible design is a subset of universal design where products and environments are usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

[ISO/IEC Guide 71:2001, definition 3.2]