Irish Standard
I.S. EN ISO 28802:2012

Ergonomics of the physical environment - Assessment of environments by means of an environmental survey involving physical measurements of the environment and subjective responses of people (ISO 28802:2012)

I.S. EN ISO 28802:2012

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EUROPEAN STANDARD

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English Version

Ergonomics of the physical environment - Assessment of environments by means of an environmental survey involving physical measurements of the environment and subjective responses of people (ISO 28802:2012)

Ergonomie de l'environnement physique - Évaluation au moyen d'une enquête environnementale comprenant des mesurages physiques et des réponses humaines subjectives (ISO 28802:2012)

Ergonomie der physikalischen Umgebung - Beurteilung von Umgebungsbedingungen auf der Grundlage von Erhebungen unter Einbeziehung physikalischer Umgebungsmessungen und Angaben der Betroffenen (ISO 28802:2012)

This European Standard was approved by CEN on 29 February 2012.

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

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Foreword

This document (EN ISO 28802:2012) 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.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.

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Endorsement notice

The text of ISO 28802:2012 has been approved by CEN as a EN ISO 28802:2012 without any modification.

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I.S. EN ISO 28802:2012

INTERNATIONAL STANDARD

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Ergonomics of the physical environment — Assessment of environments by means of an environmental survey involving physical measurements of the environment and subjective responses of people

Ergonomie de l'environnement physique — Évaluation au moyen d'une enquête environnementale comprenant des mesurages physiques et des réponses humaines subjectives

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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.

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 28802 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment*.

Introduction

This is one of a series of International Standards concerned with the ergonomics of the physical environment. It provides a method for conducting an environmental survey. It complements other International Standards in the series concerned with specific components of the environment such as thermal, acoustic, lighting and air quality environments. It builds upon those standards to allow the assessment of human response to the total environment.

This International Standard presents methods for the evaluation of comfort using physical measures of the environment and subjective measures from people. It provides methods for the assessment of thermal, acoustic, visual and lighting, and air quality environments, as well as other relevant environmental components. For each environmental component, methods are provided for measuring the physical environment and subjective responses to the environment. An assessment form for use as an environmental assessment tool by the person conducting the survey is also included.

Measurement of the physical environment is conducted using relevant instrumentation such as a thermometer, sound level meter or illuminance meter. Where appropriate, reference to the relevant International Standard is provided for the specification of the instruments. Subjective methods quantify the responses of people to an environment using subjective scales. For each environmental component, examples of subjective scales are provided. The third part of the assessment is concerned with observation. For each environmental component, advice on what may be included in an observation assessment form is provided. An example of an assessment form is provided in Annex A.

Each of these methods has been developed according to basic principles. The most appropriate form of the method or combination of methods used in concert, for the determination of environmental comfort, will depend upon the context and environment of interest. This International Standard provides both principles and application of methods for the assessment of environments using an environmental survey, and complements standards concerned with the ergonomics of the physical environment. In particular, it can be used together with environmental indices that are valid for use in those environments.

Ergonomics of the physical environment — Assessment of environments by means of an environmental survey involving physical measurements of the environment and subjective responses of people

1 Scope

This International Standard provides an environmental survey method for the assessment of the comfort and well-being of occupants of indoor and outdoor environments. It is not restricted to any particular environment, but provides the general principles that allow assessment and evaluation.

It presents the principles for conducting an environmental survey to assess the comfort and well-being of people in environments. It gives guidance on the design of the survey, as well as on the environmental measurements used to quantify the environment and the subjective assessment methods used to quantify the occupants' responses to that environment. It does not provide guidance on the design of subjective scales.

It is applicable to built as well as other environments, including vehicle and outdoor environments, and to all the occupants of those environments who can be considered as providing valid responses to an environmental survey. There may be specific features of certain types of environment that have to be taken into account; however, the general principles it outlines will apply.

This International Standard is not restricted to specific environmental components. It includes assessment of thermal environments, the acoustic environment, the visual and lit environment, air quality and other environmental factors that could be considered to influence the comfort and well-being of the occupants of an environment.

It is a basic ergonomics standard which can contribute to the development of standards concerned with specific environments such as those found in buildings. It is intended to be used by people involved in the general assessment and evaluation of physical environments, including general ergonomics practitioners as well as those who develop standards and guidelines for specific applications.

NOTE The results of the environmental survey produced by the application of this International Standard may identify specific problems that require expert advice.

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 7726, *Ergonomics of the thermal environment — Instruments for measuring physical quantities*

ISO 7730, *Ergonomics of the thermal environment — Analytical determination and interpretation of thermal comfort using calculation of the PMV and PPD indices and local thermal comfort criteria*

ISO 8041, *Human response to vibration — Measuring instrumentation*

ISO 8996, *Ergonomics of the thermal environment — Determination of metabolic rate*

ISO 9612, *Acoustics — Determination of occupational noise exposure — Engineering method*

ISO 9920, *Ergonomics of the thermal environment — Estimation of thermal insulation and water vapour resistance of a clothing ensemble*

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