

Ergonomics of the thermal environment — Evaluation of the thermal environment in vehicles —

Part 3: Evaluation of thermal comfort using human subjects

The European Standard EN ISO 14505-3:2006 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN ISO 14505-3:2006. It is identical with ISO 14505-3:2006.

The UK participation in its preparation was entrusted by Technical Committee PH/9, applied ergonomics, to Subcommittee PH/9/1, Thermal environments, which has the responsibility to:

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- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN ISO title page, the EN ISO foreword page, the ISO title page, pages ii to v, a blank page, pages 1 to 17 and a back cover.

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This European Standard was approved by CEN on 12 May 2006.

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Foreword

This document (EN ISO 14505-3:2006) 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of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 14505-3:2006 has been approved by CEN as EN ISO 14505-3:2006 without any modifications.

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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.

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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 14505-3 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment*.

ISO 14505 consists of the following parts, under the general title *Ergonomics of the thermal environment — Evaluation of the thermal environment in vehicles*:

- *Part 1: Principles and methods for assessment of thermal stress*
- *Part 2: Determination of equivalent temperature*
- *Part 3: Evaluation of thermal comfort using human subjects*

Introduction

Direct methods for the assessment of thermal environments (hot, moderate, cold) in vehicles involve measurements of the responses of human subjects. There are three types: subjective methods, objective methods, and behavioural methods. *Subjective methods* quantify the responses of people to an environment using subjective scales. *Objective methods* are those which quantify the physical, physiological or mental condition of a person by the use of instrumentation or measures of an output such as performance measures. *Behavioural methods* quantify or represent human behaviour in response to an environment. Each of these methods has been developed according to basic principles and the most appropriate form of the method and combination of methods used in concert for the assessment of thermal environments in vehicles will depend upon the context and vehicle environment of interest. This part of ISO 14505 provides both principles and application of methods for the assessment of thermal comfort in vehicle environments using human subjects. The most appropriate methods for evaluating thermal comfort in vehicles are subjective. The principles for the construction of subjective assessment scales are given in ISO 10551 and are used in the development of the test method specified in this part of ISO 14505. Physiological measurements on human subjects are described in ISO 9886 and are beyond the scope of this part of ISO 14505.

This part of ISO 14505 complements standards concerned with the ergonomics of thermal environments and in particular can be used together with thermal indices that are valid for use in vehicle environments.