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International

ISO 14505-3

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

Part 3: Evaluation of thermal comfort using human participants

Ergonomie des ambiances thermiques — Évaluation des ambiances thermiques dans les véhicules —

Partie 3: Évaluation du confort thermique en ayant recours à des participants humains

Second edition
2026-10

Reference number
ISO 14505-3:2026(en)

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Published in Switzerland

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This document was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 122, *Ergonomics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 14505-3:2006), which has been technically revised.

The main changes are as follows:

— revision of references.

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Direct methods for the assessment of thermal environments (hot, moderate, cold) in vehicles involve measurements of the responses of human participants. There are three types:

— subjective methods;

— objective methods;

— 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 document provides both principles and application of methods for the assessment of thermal comfort in vehicle environments using human participants. 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 document. Physiological measurements on human participants are described in ISO 9886 and are beyond the scope of this document.

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

This document is a basic ergonomics standard which can contribute to the development of standards concerned with specific vehicles and products.

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