International

ISO 14505-1

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

Part 1: Principles and methods for assessment of thermal stress

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

Partie 1: Principes et méthodes d'évaluation de la contrainte thermique

First edition
2026-05

Reference number
ISO 14505-1:2026(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.*

This first edition of ISO 14505-1 cancels and replaces ISO/TS 14505-1:2007.

The main change is as follows:

— inclusion of information from ISO 14505-4:2021.

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The interaction of convective, radiative and conductive heat exchange in a vehicle compartment is very complex. External thermal loads in combination with the internal heating and ventilation system of the vehicle create a local climate that can vary considerably in space and time. Asymmetric thermal conditions arise and these are often the main cause of complaints of thermal discomfort. In vehicles without or with poor heating, ventilating and air-conditioning system (HVAC-system), thermal stress is determined largely by the impact of the ambient climatic conditions on the vehicle compartment. Subjective evaluation is integrative, as the individual combines into one reaction the combined effect of several thermal stimuli. However, it is not sufficiently detailed or accurate for repeated use. Technical measurements provide detailed and accurate information, but must be integrated in order to predict the thermal effects on humans. Since several climatic factors play a role for the final heat exchange of a person, these factors must be integrated to a measure, representing their relative importance.