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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 33658-2017

Replacing GB/T 33658-2017

**Thermal comfort requirements and evaluation for indoor
environment**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1.Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 33658-2017 "Requirements and Evaluation Methods for Indoor Human Thermal Comfort Environment" and is consistent with GB/T 33658-2017.

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

---The formula for calculating the evaluation score of vertical air temperature difference has been changed (see 4.1.3,.2017 version 4.1.3);

---The threshold for the local equivalent temperature of the warm-body dummy has been increased to avoid localized discomfort in the human body (see 4.2.2);

---The formula for calculating the evaluation score of the warm-body dummy has been changed (see 4.2.1, 4.2.3, and 4.2 in the.2017 version);

---The weights of comfort indicators for both cooling and heating modes have been changed (see 6.1,.2017 version of 6.1).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Ergonomics Standardization (SAC/TC7).

1 Scope

This document specifies the technical requirements for indoor thermal comfort environments and describes the corresponding evaluation methods.

This document applies to the design and evaluation of indoor thermal environments under moderate thermal conditions in daily work and life, and can also be used for room air conditioning.

System thermal comfort evaluation.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 7725 Room Air Conditioners

GB/T 40288 Ergonomic Terminology and Symbols for Thermal Environments

ISO 7730 Ergonomics of Thermal Environment assesses thermal comfort by calculating PMV and PPD indices and applying local thermal comfort criteria.

Analytical determination and interpretation of the thermal environment
comfortcriteria

3 Terms and Definitions

The terms and definitions defined in GB/T 40288 and ISO 7730, as well as the following terms and definitions, apply to this document.

3.1

thermal environment

Environmental characteristics that affect heat exchange in the human body.

3.2

thermal comfort

It indicates the degree of subjective satisfaction with the thermal environment and is assessed through subjective evaluation.

3.3

Predicted mean vote

PMV

The average value of the votes cast by a large sample of people using a 7-point thermal sensation scale (see Table 1).

Table 1 Thermal Sensation Scale

Scale 3 2 1 0 -1 -2 -3

The description of the temperature is warm, slightly warm, moderately warm, slightly cool, and cool.

[Source. GB/T 5701-2008, 3.19]

3.4

The average temperature within the indoor human activity area.

3.5

The temperature difference of the air in the vertical direction of the indoor environment.

3.6

blown-out sensation

DR

An involuntary, localized cooling sensation in the human body caused by airflow.

[Source. GB/T 18049-2017, 3.6]

3.7

Temperature uniformity

The temperature difference at different measuring points at the same time.

3.8

The range of indoor temperature change within a specified time period.

3.9

PPD

A quantitative indicator that predicts the percentage of people who feel too cold or too hot.

[Source. GB/T 40288-2021, 2.79]

3.10

The time it takes for the average indoor temperature to rise from the initial temperature to the target temperature under test conditions.

Note. The unit is minutes (min).

3.11

In a uniform space, where the average radiant temperature equals the air temperature and the air velocity is zero, the human body's convective radiation...

The heat exchange is the same as under the actual conditions to be evaluated.

[Source. GB/T 40261.1-2023, 3.3]

3.12

Forehead height

The vertical distance from the point between the eyebrows (the center point between the two eyebrows) to the horizontal ground in a sitting or standing position.

3.13

temperature cycle

Temperature variation within a certain range and frequency.

[Source. GB/T 18049-2017, 3.1]

3.14

temperature drift

Passive, monotonous, steady-state, and non-cyclic temperature changes within a closed space.

[Source. GB/T 18049-2017, 3.2]