

ICS 17.140
CCS A 59



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

GB/T 45830-2025

Acoustics - Acoustic quality of open office spaces

声学 开放式办公空间的声学质量

(English Translation)

Issued on: August 1, 2025

Implemented on: February 1, 2026

**Issued by: State Administration for Market Regulation, Standardization
Administration of China**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is equivalent to ISO 22955:2021 "Acoustics - Acoustic quality of open-plan office spaces".

Introduction

Open offices are becoming more and more common. Due to noise interference and acoustic difficulties, it is difficult to carry out two theoretically contradictory activities at the same time.

Open plan offices can be a source of concern for users due to the high verbal communication and focused individual work.

The interruptions caused by these interactions can create tension between those who want to concentrate and those who need to talk to perform their activities.

This paper focuses on the acoustics of open spaces and, more specifically, on the effects of noise on cognition, i.e., the acoustic comfort associated with activity responsibilities.

Moderation and noise disturbance.

This document is intended for stakeholders involved in the planning, design, construction or

layout of open-plan offices to help them provide users with Good acoustic comfort is intended to provide a basis for discussion and dialogue among stakeholders involved in creating office spaces. In particular, it is intended to help projects Drafting of acoustic requirements for project owners, helping project management companies to define their goals and requirements related to open office architecture and layout resource.

The purpose of this document is to provide principles, evaluation quantities and measurement methods for acoustic characterization. These are easy to use and suitable for space users.

Perception of the acoustic environment.

Studies [10]-[12] have shown that noise that is uncontrollable, understandable, and unrelated to personal activities is the most disturbing and should be minimized.

From adjacent workstations, breakout areas, shared areas, or adjacent offices. Therefore, this document focuses on containing the spread of voice.

The strategy (approach) chosen for the open plan space is to limit interference between adjacent workstations while optimizing the comfort of close conversation.

The idea is that high intelligibility in the communication area (near the workstation) will result in less interference to more distant workstations. This document specifically introduces "auditory concentration" and the concept of "reducing distractions" seeks to solve the problem of sound comfort.

This paper provides an opportunity for further reflection through the analysis of activities involving more or less collaboration and the treatment of things that constitute open spaces.

Yes, especially in terms of surface treatments and additional office furnishings such as furniture, acoustic screens or low partitions.

This document establishes the relationship between acoustic quality and the acoustic performance to be achieved in open-plan offices. Principles and evaluation quantities used (Descriptor) Applies to common situations of sound disturbance, privacy, and auditory concentration, as well as to work habits inherent in these spaces and the use of their organization's expectations for productivity and employee health.

This paper reflects the technical and economic context of office construction related to activities in unfurnished offices and the resulting layout practices.

At the same time, this document reflects the expectations of end users based on the experience of the committee members and the publications available at the date the text was drafted.

Acoustics Acoustic quality of open office spaces

1 Scope

This document provides technical guidance for achieving acoustic quality in open office spaces to support those involved in the planning, design, and implementation of open office spaces.

A dialogue and formal commitment between the various stakeholders involved in a project or arrangement (end customer, project owner, proponents, consultants, etc.).

This document applies to all open-plan offices where the following activities are carried out.

---Space Type 1.Activity unknown --- Vacant floor;

---Space type 2.Activities focused on external communication (via telephone/audio/video);

---Space type 3.Activities mainly based on collaboration between people in adjacent workstations;

---Space type 4.based on a small number of collaborative work activities;

---Space type 5.Activities that may involve receiving the public;

---Space type 6.There are multiple activities in the same space.

More specifically, this document applies to renovation projects (refurbishment and/or changes or additions to activities) of existing business premises as well as to new spaces and Project layout of the furniture delivery space.

This document covers the activities and work of the following stakeholders.

---End customers. conduct diagnosis, investigation and demand expression based on their knowledge in the field of acoustics;

---Project owner. drafting contract technical requirements;

---Project management company (architects, acousticians, ergonomics professionals, economics professionals and consulting engineers).

Describe the performance of the acoustic solution and the layout principles to achieve the technical requirements;

---Builders. Achieve clear and verifiable goals in material selection and implementation;

---Building developers. Improve indoor environmental quality, including acoustic comfort, in real estate operations as a competitive factor;

---Occupational health, safety and quality experts;

---Expert consultation and evaluation.