ADDENDA

ANSI/ASHRAE Addendum b to
ANSI/ASHRAE Standard 55-2023

Thermal Environmental Conditions for Human Occupancy

Approved by ASHRAE and the American National Standards Institute on August 31, 2026.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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FOREWORD

Surveys are one method used to assess thermal comfort in existing buildings. In this context, questions are asked to a defined target population, for example, all occupants of a building, a single floor, or a specific occupancy type. In practice, it is often not feasible to survey everyone in the target group nor to obtain responses from all those contacted. It is therefore necessary to define the minimum number of responses required to obtain a sample that is representative of the target population.

Addendum b replaces a response-rate-based rule with a statistically grounded requirement for the minimum sample size needed to evaluate thermal comfort in existing buildings. The previous approach relied on a rule of thumb and, in buildings with large occupant populations, often required an unnecessarily large number of responses. The revised text defines the minimum number of responses using a standard sample size formula, providing a clear and well established statistical basis for determining the required number of survey responses.

Informative Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum b to Standard 55-2023

Modify Section 7 as follows. The remainder of Section 7 remains unchanged.

7. EVALUATION OF COMFORT IN EXISTING BUILDINGS

[. . .]

7.3 Measurement Methods

7.3.1 Surveys of Occupant Responses to Environment. Surveys shall be solicited from the target population. The minimum number of occupants answering the survey (n) is calculated from the following equation or obtained from Table 7-1, where P is the target population.~~entire occupancy or a representative sample thereof. If more than 45 occupants are solicited, the response rate must exceed 35%. If solicited occupants number between 20 and 45, at least 15 must respond. For under 20 solicited occupants, 80% must respond.~~

$$n = \frac{96}{1 + \frac{95}{P}}$$

[. . .]

7.3.4 Physical Measurement Device Criteria. The measuring instrumentation used shall meet the requirements for measurement range and accuracy given in Table 7-2~~7-1~~. Air temperature sensors shall be shielded from radiation exchange with the surroundings.

[. . .]

Table 7-1 Minimum Number of Occupants Answering the Survey

Target Population (*P*)	Minimum Number of Occupants Answering the Survey (*n*)
20	17
40	29
60	38
80	44
100	50
150	59
200	66
250	70
300	73
400	78
500	81
750	85
1000	88
2500	92
5000	94
>7500	95

Informative Note: *n* was calculated using the standard sample size formula with 95% confidence, ±10% margin of error.

[. . .]

Table 7-2 ~~Table 7-1~~ Instrumentation Measurement Range and Accuracy

[. . .]

Modify Informative Appendix M as follows. The remainder of Informative Appendix M remains unchanged.

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INFORMATIVE APPENDIX M
INFORMATIVE REFERENCES AND BIBLIOGRAPHY

[. . .]

Wyon, D.P., Th. Asgeirsdottir, P. Kjerulf-Jensen, and P.O. Fanger. 1973. The effects of ambient temperature swings on comfort, performance and behavior. *Arch. Sci. Physiol* 27:441–58.

Xiong, J., T. Cheung, Y. Fukawa, N. Noelle, T. Parkinson, J. Kim, S. Tanabe, R. de Dear, and S. Schiavon. 2025. Measuring What Matters: A Benchmarking System for Occupant Satisfaction with Workspace Environments. *Building and Environment*. https://doi.org/10.1016/j.buildenv.2025.113783.

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[. . .]

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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8/26