CONTENTS
ANSI/ASHRAE Standard 55-2023
Thermal Environmental Conditions for Human Occupancy

NOTE

Approved addenda, errata, or interpretations for this standard can be downloaded free of charge from the ASHRAE website at www.ashrae.org/technology.

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

This 2023 edition of ASHRAE Standard 55 incorporates eleven addenda to the 2020 edition that were written with a renewed focus on organizational clarity.

The core of the standard in Sections 4 and 5 specifies methods to determine thermal environmental conditions (temperature, humidity, air speed, and radiant effects) in buildings and other spaces that a significant proportion of the occupants will find acceptable at a certain metabolic rate and clothing level. The comprehensive analytical method to determine these conditions uses calculation algorithms included in the standard and appendices, all of which are implemented in the Thermal Comfort Tool.

Section 6 contains requirements for demonstrating that a design of an occupied space or building meets the comfort requirements in Sections 4 and 5. Section 7 includes requirements for the measurement and evaluation of existing thermal environments and is also applicable to commissioning.

Because the two personal characteristics of occupants (metabolic rate and clothing level) vary, operating set points for buildings are not mandated by this standard.

Standard 55 was first published in 1966 and republished in 1974, 1981, and 1992. As of 2004, it is updated using ASHRAE's continuous maintenance procedures. According to these procedures, the standard is continuously revised by addenda that are publicly reviewed, approved by ASHRAE and ANSI, and published and posted for free on the ASHRAE website.

The eleven approved addenda to the 2020 edition are summarized in detail in Informative Appendix N. The most noteworthy changes include

- *A new method for the assessment of local thermal discomfort with vertical air temperature gradient between the head level and ankle level*
- *A wider applicability of the standard, which now covers metabolic rates up to 4 from 2*
- *A consolidation and simplification of calculation methods in the standard, which are now limited to two methods—standard and adaptive—and a new flow chart that provides guidance on when to use which calculation method*
- *Updates to informative references*
- *An overhaul of the documentation requirements of the standard (Section 6) that includes additions, clarifications, and simplifications, along with a new example spreadsheet compliance form that replaces the prior example form*

1. PURPOSE

The purpose of this standard is to specify the combinations of indoor thermal environmental factors and personal factors that will produce satisfactory thermal environmental conditions for a majority of the occupants within the space.

2. SCOPE

2.1 The environmental factors addressed in this standard are temperature, thermal radiation, humidity, and air speed; the personal factors are those of activity and clothing.

2.2 It is intended that all of the criteria in this standard be applied together, as comfort in the indoor environment is complex and responds to the interaction of all of the factors that are addressed herein.

2.3 This standard specifies thermal environmental conditions acceptable for healthy adults at atmospheric pressure equivalent to altitudes up to 3000 m (10,000 ft) in indoor spaces designed for human occupancy for periods not less than 15 minutes.

2.4 This standard does not address such nonthermal environmental factors as air quality, acoustics, illumination, or other physical, chemical, or biological space contaminants that may affect comfort or health.

2.5 This standard shall not be used to override any safety, health, or critical process requirements.

3. DEFINITIONS

adaptive model: a model that relates indoor design temperatures or acceptable temperature ranges to outdoor meteorological or climatological parameters. (***Informative Note:*** *Adaptive model* is another name for the