ADDENDA

ANSI/ASHRAE Addendum b to
ANSI/ASHRAE Standard 55-2020

Thermal Environmental Conditions for Human Occupancy

Approved by ASHRAE and the American National Standards Institute on April 30, 2021.

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 (https://www.ashrae.org/continuous-maintenance).

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FOREWORD

Addendum b to Standard 55-2020 changes the upper metabolic rate limit for the standard from 2 to 4. This change aligns the standard with ISO Standard 773 and is motivated by consistent recent research that supports the applicability of Standard 55 at this metabolic level.

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 55-2020

Modify Section 5.2.1.4 as shown.

5.2.1.4 High Metabolic Rates. This standard does not apply to occupants whose time-averaged metabolic rate exceeds ~~2.0~~4.0 met.

Modify Section 5.2.2.2 as shown.

5.2.2.2 Insulation Determination. Use one or a combination of the following methods to determine clothing insulation I_{cl}:

a. Use the data presented in Table 5.2.2.2A for the expected ensemble of each representative occupant.
b. Add or subtract the insulation of individual garments in Table 5.2.2.2B from the ensembles in Table 5.2.2.2A to determine the insulation of ensembles not listed.
c. Determine a complete clothing ensemble using the sum of the individual values listed for each item of clothing in the ensemble in Table 5.2.2.2B.
d. It is permitted, but not required, to adjust any of the previous methods for seated occupants using Table 5.2.2.2C.
e. For moving occupants, it is permitted but not required to adjust any of the previous methods using the following formula:

$$I_{cl,\ active} = I_{cl} \times (0.6 + 0.4/M)$$

$$1.2 \text{ met} < M < \text{~~2.0~~}4.0 \text{ met}$$

[. . .]

Modify Table 5-5 as shown.

Table 5-5 Applicability of Methods for Determining Acceptable Thermal Environments in Occupied Spaces

Average Air Speed, m/s (fpm)	Humidity Ratio	met	clo	Comfort Zone Method
<0.20 (40)	All	1.0 to ~~2.0~~4.0	0 to 1.5	Section 5.3.1, "Analytical Comfort Zone Method"
>0.20 (40)	All	1.0 to ~~2.0~~4.0	0 to 1.5	Section 5.3.2, "Elevated Air Speed Comfort Zone Method"

Modify Section 5.3.1.1 as shown.

5.3.1.1 Applicability. It is permissible to apply the method in this section to all spaces within the scope of this standard where the occupants have activity levels that result in average metabolic rates between 1.0 and ~~2.0~~4.0 met, clothing insulation I_{cl} between 0.0 and 1.5 clo, and average air speeds V_a greater than 0.20 m/s (40 fpm).

Modify Section 5.3.2.1 as shown.

5.3.2.1 Applicability. It is permissible to apply the method in this section to all spaces within the scope of this standard where the occupants have activity levels that result in average metabolic rates between 1.0 and ~~2.0~~4.0 met, clothing insulation I_{cl} between 0.0 and 1.5 clo, and average air speeds V_a greater than 0.20 m/s (40 fpm).

Modify Informative Appendix F as shown.

[. . .]

As metabolic rates increase above 1.0 met, the evaporation of sweat becomes an increasingly important factor for thermal comfort. The PMV method does not fully account for this factor, and this standard should not be applied to situations where the time-averaged metabolic rate is above ~~2.0~~4.0 met.

[. . .]

Modify Informative Appendix G as shown.

[. . .]

Tables 5-2 and 5-3 are for a person that is not moving. Body motion decreases the insulation of a clothing ensemble by pumping air through clothing openings and/or causing air motion within the clothing. This effect varies considerably depending on the nature of the motion (e.g., walking versus lifting) and the nature of the clothing (stretchable and snug fitting versus stiff and loose fitting). Because of this variability, accurate estimates of clothing insulation (I_{cl}) for an active person are not available unless measurements are made for the specific clothing under the conditions in question (e.g., with a walking manikin). An approximation of the clothing insulation for an active person is

$$I_{cl,\ active} = I_{cl} \times (0.6 + 0.4 / M)$$

$$1.2 \text{ met} < M < \text{~~2.0~~}4.0 \text{ met}$$

[. . .]

Modify Informative Appendix H, Section H2 as shown.

H2. ANALYTICAL COMFORT ZONE METHOD

This method applies to spaces where the occupants have activity levels that result in average metabolic rates between 1.0 and ~~2.0~~4.0 met and where clothing is worn that provides 1.5 clo or less of thermal insulation.

[. . .]

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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.

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