



**BSR/ASHRAE Addendum f
to ANSI/ASHRAE Standard 55-2017**

Public Review Draft

Proposed Addendum f to Standard 55-2017, Thermal Environmental Conditions for Human Occupancy

**First Public Review (July 2020)
(Draft shows Proposed Changes to Current Standard)**

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FOREWORD

This proposed addendum removes the prohibition against applying the adaptive model described in Section 5.4 for Occupant-Controlled Naturally Conditioned Spaces in spaces that have an air conditioning system installed. It preserves the prohibition against running the air conditioning to achieve conditions in the space that satisfy the adaptive model. This proposed addendum also editorially modifies Sections 7.2.2.2 and L1.1 to achieve consistent terminology. These changes are being made given supporting data from the new ASHRAE Comfort Database II. See supporting research in “Parkinson, Thomas & de Dear, Richard & Brager, Gail. (2020). Nudging the adaptive thermal comfort model. Energy and Buildings. 206. 10.1016/j.enbuild.2019.109559”.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum f to 55-2017

Modify Section 5.4 as follows:

5.4 Determining Acceptable Thermal Conditions in Occupant-Controlled Naturally Conditioned Spaces (Adaptive Model)

5.4.1 Applicability. This method defines acceptable thermal environments only for occupant-controlled naturally conditioned spaces that meet all of the following criteria:

- a. There is no mechanical cooling system (e.g., refrigerated air conditioning, radiant cooling, or desiccant cooling) ~~installed. No~~ or heating system is in operation.
- b. Representative occupants have metabolic rates ranging from 1.0 to ~~1.3~~ 1.5 met.
- c. Representative occupants are free to adapt their clothing to the indoor and/or outdoor thermal conditions within a range at least as wide as 0.5 to 1.0 clo.
- d. The prevailing mean outdoor temperature is greater than 10°C (50°F) and less than 33.5°C (92.3°F).

Modify Section 7.2.2.2 as follows. The remainder of Section 7.2.2.2 is unchanged.

7.2.2.2 Occupant-Controlled Naturally Conditioned Spaces. Section 5.4 prescribes the use of the adaptive model for determining the comfort zone boundaries. [...]

Modify Informative Appendix L Section L1.1b as follows. The remainder of Section L1.1 is unchanged.

L1.1 Overview of Comfort Prediction Using Physical Measurements. [...]

- b. In the adaptive ~~model method~~, used for naturally ventilated spaces, environmental measurements are linked to satisfaction through an empirical model in which the prevailing mean air outdoor temperature determines the

position of percent satisfied contours bordering the comfort zone. Section 5.4 defines prevailing mean outdoor air temperature. Local discomfort limits are not used in the adaptive model ~~method~~.