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ANSI/ASHRAE Standard 113-2022
Method of Testing for Room Air Diffusion

NOTE

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FOREWORD

This standard defines a method of testing air diffusion performance in the occupied zone of spaces such as offices or similar buildings. The method is designed for use in both prototype and field installations.

The revised 2022 edition of the standard includes the following changes:

- *Removed directional anemometers from the acceptable test instruments in Section 5*
- *Removed Draft Rating Method from Informative Appendix B*
- *Added new Section B2, "Air Diffusion Performance Index for Heating" to Informative Appendix B*
- *Revised Informative Appendix C example calculations*
- *Added new Informative Appendix E, "Rotating Vane Anemometer Flow Measuring System"*
- *Added new Informative Appendix F, "Equations"*
- *Added new Informative Appendix G, "Informative References"*
- *Updated references*
- *Made minor editorial changes*

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1. PURPOSE

The purpose of this standard is to define a repeatable method of testing the steady-state air diffusion performance of an air distribution system in occupied zones of building spaces. This method is based on air velocity and air temperature distributions at specified heating or cooling loads and operating conditions.

2. SCOPE

2.1 This standard specifies equipment and procedures for measuring air speed and air temperature in occupied zones of building spaces.

2.2 This standard applies to furnished or unfurnished spaces (actual or mock-up), with or without occupants.

2.3 This standard applies to air distribution systems, including systems in which

a. air outlets are located inside, inside and outside, or outside of the occupied zone and
b. local air velocities in the occupied zone are, or are not, under control by individual occupants.

2.4 This standard does not cover

a. rating of individual air outlets and inlets or
b. naturally ventilated building spaces.

3. DEFINITIONS

air delivery rate (Q/A): air volume flow rate per unit area of the entire floor space being conditioned.

air diffusion: the introduction of air into a building space for the purpose of providing acceptable velocity and temperature distribution in the occupied zone.

air diffusion performance index (ADPI): a single-number rating of the air diffusion performance of a mixing system at specified supply air conditions and space cooling or heating load. ADPI is based on air speed and effective draft temperature (see Informative Appendix B, Sections B1 and B2).

air distribution: delivery of air through ducts or plenums.

air inlet: any device through which air is removed from a conditioned space.

air outlet: any device for supplying air to a space, such as a diffuser, a grille, or a register.

air temperature (t): temperature of the air measured at a test point.