



## Standard Terminology Relating to Building and Environmental Acoustics<sup>1</sup>

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<sup>ε1</sup> NOTE—Editorial corrections made throughout in October 2016.

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### INTRODUCTION

In some of the entries, those that are measures of physical quantities, the term is followed by several items: an abbreviation or a symbol, or both, the dimensions of quantities, the measurement units, and the part of speech. The abbreviation, where applicable, indicates the term as typically referenced. The symbol stands for the magnitude of the quantity in mathematical expressions. The dimensions of a quantity express its measure in terms of three fundamental quantities:  $M$  for mass,  $L$  for length, and  $T$  for time. Speed, for instance, is the quotient obtained when the distance an object moves is divided by the time involved. The dimensions are  $[LT^{-1}]$ , the negative exponent indicating division. The measurement units are consistently in SI, Le Système International d'Unités. Those still using the cgs (centimetre-gram-second) or the inchpound system of units are referred for most of the conversion factors to [IEEE/ ASTM SI 10](#). Some conversion factors are listed in Section 5 of this document for convenient reference.

The dimensions of a quantity are the same regardless of the units in which the quantity is measured. Speed has the dimensions  $[LT^{-1}]$  whether it is measured in miles per hour, feet per second, or metres per second. Quantities with different dimensions are not the same. Flow resistance and specific flow resistance, for instance, are quantities of different kinds even though the names are similar. On the other hand, quantities with the same dimensions are not necessarily of the same kind. Sound energy density, for instance, has the same dimensions as sound pressure,  $[ML^{-1}T^{-2}]$ , but it is not a kind of sound pressure. Nor is absorption with the dimensions  $[L^2]$  a kind of area.

### 1. Scope

1.1 This terminology covers terms and definitions related to environmental acoustics. Only definitions common to two or more standards under the jurisdiction of Committee E33 are listed here. The purpose of this terminology is to promote uniformity of key definitions. Definitions pertinent to only one standard and exceptions to the definitions listed below are contained in the individual standards and should be used when following those standards.

### 2. Referenced Documents

#### 2.1 *ASTM Standards*:<sup>2</sup>

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<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee E33 on Building and Environmental Acoustics and is the direct responsibility of Subcommittee E33.07 on Definitions and Editorial.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- [C367 Test Methods for Strength Properties of Prefabricated Architectural Acoustical Tile or Lay-In Ceiling Panels](#)
- [C384 Test Method for Impedance and Absorption of Acoustical Materials by Impedance Tube Method](#)
- [C423 Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method](#)
- [C522 Test Method for Airflow Resistance of Acoustical Materials](#)
- [C635 Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings](#)
- [C636 Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels](#)
- [E90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements](#)
- [E336 Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings](#)
- [E413 Classification for Rating Sound Insulation](#)