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Standard Terminology Relating to Building and Environmental Acoustics[1]

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~~ε1 NOTE—The title was editorially updated in June 2007.~~

INTRODUCTION

In some of the entries, those that are measures of physical quantities, the term is followed by three items: symbol, dimensions, and unit. The symbol, in italics, 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 unit is 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 ~~Practice E380~~IEEE/ ASTM SI 10. A few conversion factors are listed in Section 4 of this terminology.

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:* [2]
C 423 Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
C 367 Test Methods for Strength Properties of Prefabricated Architectural Acoustical Tile or Lay-In Ceiling Panels
C 384 Test Method for Impedance and Absorption of Acoustical Materials by Impedance Tube Method
C 522 Test Method for Airflow Resistance of Acoustical Materials
C 635 Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
C 636 Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
C 667 Specification for Prefabricated Reflective Insulation Systems for Equipment and Pipe Operating at Temperatures above Ambient Air
C 871 Test Methods for Chemical Analysis of Thermal Insulation Materials for Leachable Chloride, Fluoride, Silicate, and Sodium Ions

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[1] 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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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

E 90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

E 336 Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings

E 413 Classification for Rating Sound Insulation

E 477 Test Method for Measuring Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers

E 492 Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine

E 497 Practice for Installing Sound-Isolating Lightweight Partitions

E 557 Guide for The Installation of Operable Partitions

E 596 Test Method for Laboratory Measurement of Noise Reduction of Sound-Isolating Enclosures

E 756 Test Method for Measuring Vibration-Damping Properties of Materials

E 795 Practices for Mounting Test Specimens During Sound Absorption Tests

E 966 Guide for Field Measurements of Airborne Sound Insulation of Building Facades and Facade Elements

E 989 Classification for Determination of Impact Insulation Class (IIC)

E 996 Practice for Reporting Data in Auger Electron Spectroscopy and X-ray Photoelectron Spectroscopy

E 1007 Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures

E 1014 Guide for Measurement of Outdoor A-Weighted Sound Levels

E 1042 Classification for Acoustically Absorptive Materials Applied by Trowel or Spray

E 1050 Test Method for Impedance and Absorption of Acoustical Materials Using A Tube, Two Microphones and A Digital Frequency Analysis System

E 1110 Classification for Determination of Articulation Class

E 1111 Test Method for Measuring the Interzone Attenuation of Open Office Components

E 1123 Practices for Mounting Test Specimens for Sound Transmission Loss Testing of Naval and Marine Ship Bulkhead Treatment Materials

E 1124 Test Method for Field Measurement of Sound Power Level by the Two-Surface Method

E 1130 Test Method for Objective Measurement of Speech Privacy in Open Offices Using Articulation Index

E 1179 Specification for Sound Sources Used for Testing Open Office Components and Systems

E 1222 Test Method for Laboratory Measurement of the Insertion Loss of Pipe Lagging Systems

E 1265 Test Method for Measuring Insertion Loss of Pneumatic Exhaust Silencers

E 1289 Specification for Reference Specimen for Sound Transmission Loss

E 1332 Classification for Determination of Outdoor-Indoor Transmission Class

E 1374 Guide for Open Office Acoustics and Applicable ASTM Standards

E 1375 Test Method for Measuring the Interzone Attenuation of Furniture Panels Used as Acoustical Barriers

E 1376 Test Method for Measuring the Interzone Attenuation of Sound Reflected by Wall Finishes and Furniture Panels

E 1408 Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems

E 1414 Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum

E 1433 Guide for Selection of Standards on Environmental Acoustics

E 1503 Test Method for Conducting Outdoor Sound Measurements Using a Digital Statistical Sound Analysis System

E 1573 Test Method for Evaluating Masking Sound in Open Offices Using A-Weighted and One-Third Octave Band Sound Pressure Levels

E 1574 Test Method for Measurement of Sound in Residential Spaces

E 1686 Guide for Selection of Environmental Noise Measurements and Criteria

E 1704 Guide for Specifying Acoustical Performance of Sound-Isolating Enclosures

E 1779 Guide for Preparing a Measurement Plan for Conducting Outdoor Sound Measurements

E 1780 Guide for Measuring Outdoor Sound Received from a Nearby Fixed Source

E 2179 Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors

E 2202 Practice for Measurement of Equipment-Generated Continuous Noise for Assessment of Health Hazards

E 2235 Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods

E 2249 Test Method for Laboratory Measurement of Airborne Transmission Loss of Building Partitions and Elements Using Sound Intensity

IEEE/ ASTM SI 10 Standard for Use of the International System of Units (SI): The Modern Metric System

2.2 *ANSI Standard:*

ANSI S1.4 Specification for Sound Level Meters[3]

ANSI S1.6 Preferred Frequencies, Frequency Levels, and Band Numbers for Acoustical Measurements

ANSI S1.11 Octave-Band and Fractional Octave-Band Analog and Digital Filters, Specifications for

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[3] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

3. Terminology

3.1 If the term sought by the user cannot be found in 3.2, it may be found in 4.1.

3.2 *Terms and Definitions:*

acoustic impedance, $Z \equiv R + jX$; [$ML^{-4}T^{-1}$]; mks acoustic ohm ($Pa \cdot s/m^3$)— *of a surface, for a given frequency,* the complex quotient obtained when the sound pressure averaged over the surface is divided by the volume velocity through the surface. The real and imaginary components are called, respectively, **acoustic resistance** and **acoustic reactance.**

acoustical barrier—contiguous objects such as solid walls, buildings, or earthen berms that substantially block the direct path of sound between a source and receiver, and which, if they have an open edge or edges allowing diffraction around them, are sufficiently wide and high to cause significant reduction of the sound traveling from the source to the receiver.

acoustical material—any material considered in terms of its acoustical properties. *Commonly and especially,* a material designed to absorb sound.

admittance ratio, $y\rho c \equiv g\rho c - jb\rho c$; **[dimensionless]**—the reciprocal of the impedance ratio. The real and imaginary components are called, respectively, **conductance ratio** and **susceptance ratio.**

airborne sound—sound that arrives at the point of interest, such as one side of a partition, by propagation through air.

airflow resistance, R; [$ML^{-4}T^{-1}$]; mks acoustic ohm ($Pa \cdot s/m^3$)—the quotient of the air pressure difference across a specimen divided by the volume velocity of airflow through the specimen. The pressure difference and the volume velocity may be either steady or alternating.

airflow resistivity, r_o; [$ML^{-3}T^{-1}$]; mks rayl/m ($Pa \cdot s/m^2$)—*of a homogeneous material,* the quotient of its specific airflow resistance divided by its thickness.

ambient noise—the composite of airborne sound from many sources near and far associated with a given environment. No particular sound is singled out for interest.

arithmetic mean sound pressure level—*of several related sound pressure levels measured at different positions or different times, or both, in a specified frequency band,* the sum of the sound pressure levels divided by the number of levels.

DISCUSSION—The arithmetic mean sound pressure level is sometimes used to approximate the **average sound pressure level.** The accuracy of this approximation depends upon the range of sound pressure levels.

average sound pressure level—*of several related sound pressure levels measured at different positions or different times, or both, in a specified frequency band,* ten times the common logarithm of the arithmetic mean of the squared pressure ratios from which the individual levels were derived.

DISCUSSION—1—An average sound pressure level obtained by averaging the A-weighted sound level continuously over a specified period is called the **time-average sound level**.

DISCUSSION—2—Since, by definition, a squared pressure ratio, p_i^2/p_0^2, is equal to $10^{L_i/10}$, average sound pressure level is calculated from the expression:

$$\bar{L}_i = 10 \log \left(\frac{1}{n} \sum_{i=1}^{n} 10^{L_i/10} \right)$$

where:
$\bar{L}_p$ = average sound pressure level, dB,
n = number of individual sound pressure levels,
p_i = rms pressure at an individual position or time, or both, Pa,
p_0 = 20 µPa, reference sound pressure, and
L_i = an individual sound pressure level, dB.

If conditions warrant, an integral expression may be used:

$$\bar{L}_p = 10 \log \left(\frac{1}{T} \int_{t1}^{t2} (p^2(t)/p_0^2) \, dt \right)$$

where:
$\bar{L}_p$ = average sound pressure level during a specified time interval, dB,
T = $t_2 - t_1$ = a specified time interval, s, min, h, or day,
$p(t)$ = instantaneous sound pressure, Pa, and
p_0 = 20 µPa, reference sound pressure.

background noise—noise from all sources unrelated to a particular sound that is the object of interest. Background noise may include airborne, structureborne, and instrument noise.

characteristic impedance of the medium, ρc; [$ML^{-2}T^{-1}$]; mks rayl ($Pa \cdot s/m$)—the specific normal acoustic impedance at a point in a plane wave in a free field. It is a pure specific resistance since the sound pressure and the particle velocity are in phase and it is equal in magnitude to the product of the density of the medium, ρ, and the speed of sound in the medium, c. Its value when the medium is air at 20°C and 101.325 kPa is 413 mks rayl ($Pa \cdot s/m$).

cutoff frequency—*of an anechoic wedge or set of wedges*, the lowest frequency above which the normal incidence sound absorption coefficient is at least 0.990.

damp—to cause a loss or dissipation of the oscillatory or vibrational energy of an electrical or mechanical system.

decay rate, *d;* **[T⁻¹]; dB/s**—*for airborne sound,* the rate of decrease of sound pressure level after the source of sound has stopped; *for vibration,* the rate of decrease of vibratory acceleration, velocity, or displacement level after the excitation has stopped.

decibel, dB—the term used to identify ten times the common logarithm of the ratio of two like quantities proportional to power or energy. (See **level, sound transmission loss.**) Thus, one decibel corresponds to a power ratio of $10^{0.1}$ and *n* decibels corresponds to a power ratio of $(10^{0.1})^n$.

> DISCUSSION—Since the decibel expresses the ratio of two like quantities, it has no dimensions. It is, however, common practice to treat "decibel" as a unit as, for example, in the sentence, "The average sound pressure level in the room is 45 decibels."

diffraction—a change in the direction of propagation of sound energy in the neighborhood of a boundary discontinuity, such as the edge of a reflective or absorptive surface.

diffuse sound field—the sound in a region where the intensity is the same in all directions and at every point.

direct sound field—the sound that arrives directly from a source without reflection.

dummy microphone—a microphone substitute which has electrical characteristics identical to a functional microphone, but which has essentially no sensitivity to incident sound pressure.

field sound transmission class, FSTC—sound transmission class calculated in accordance with Classification E 413 using values of field transmission loss.

field transmission loss, *FTL*—sound transmission loss measured in accordance with Annex A1 of Test Method E 336.

flanking transmission—transmission of sound from the source to a receiving location by a path other than that under consideration.

impact insulation class, IIC—a single-number rating derived from measured values of normalized impact sound pressure levels in accordance with Annex A1 of Test Method E 492. It provides an estimate of the impact sound insulating performance of a floor-ceiling assembly.

impedance ratio, $z/\rho c \equiv r/\rho c + jx/\rho c;$ [dimensionless]—the ratio of the specific normal acoustic impedance at a surface to the characteristic impedance of the medium. The real and imaginary components are called, respectively, **resistance ratio** and **reactance ratio.**

impulsive sound, *n*—a brief, intrusive sound, such as that associated with a tire blowout, operation of a punch press, the discharge of a firearm, a door slam, or a shout, usually characterized by a rapid rise time in the initial pressure pulse of less than a few milliseconds, and by a decay time of less than a few seconds.

> DISCUSSION—No mathematical description exists to unequivocally define the presence of impulsive sound.

insertion loss, *IL*—*of a silencer or other sound-reducing element, in a specified frequency band,* the decrease in sound power level, measured at the location of the receiver, when a sound insulator or a sound attenuator is inserted in the transmission path between the source and the receiver.

interference, *n*— any activity or event that could produce anomalous measurements.

level, *L*—ten times the common logarithm of the ratio of a quantity proportional to power or energy to a reference quantity of the same kind. (See **sound power level, sound pressure level.**) The quantity so obtained is expressed in decibels.

level reduction, *LR*—*in a specified frequency band,* the decrease in sound pressure level, measured at the location of the receiver, when a barrier or other sound-reducing element is placed between the source and the receiver.

> DISCUSSION—Level reduction is a useful measure in circumstances when measures of transmission loss, insertion loss, or noise reduction are not possible.

maximum sound level, L_{AFmax}[nd], (dB) *n*—Ten times the common logarithm of the square of the ratio of the largest frequency-weighted and exponential-time-weighted (or other wise time-averaged) sound pressure during the measurement period to the square of the reference-sound-pressure of 20 micro pascals. The subscripts designate the frequency weighting (A or C), and time the weighting or averaging (F for fast, S for slow, I for impulse, or a number with proper units to indicate time interval).

> DISCUSSION—The time weighting or averaging time must be specified. The frequency weighting should be specified; otherwise, A-weighting will be understood.

measurement plan, *n*—a document formally describing the specific steps to be taken during a measurement, including any unique requirements.

measurement set, *n*—the set of acoustical measurements and related data obtained at a single measurement location during a specified time interval.

> DISCUSSION—The specified time interval may include brief documented periods during which data recording or analysis are paused for the purpose of eliminating the effects of interference.

metric sabin, [L²]—the unit of measure of sound absorption in the metre-kilogram-second system of units.

noise isolation class, NIC—a single-number rating calculated in accordance with Classification E 413 using measured values of noise reduction. It provides an estimate of the sound isolation between two enclosed spaces that are acoustically connected by one or more paths.

noise reduction, *NR—in a specified frequency band,* the difference between the average sound pressure levels measured in two enclosed spaces or rooms due to one or more sound sources in one of them.

> DISCUSSION—It is implied that in each room there is a meaningful average level; that is, that in each room the individual observations are randomly distributed about the average value, with no systematic variation with position within the permissible measurement region. Noise reduction becomes meaningless and should not be used in situations where this condition is not met.

noise reduction coefficient, NRC—a single-number rating derived from measured values of sound absorption coefficients in accordance with 11.7 of Test Method C 423. It provides an estimate of the sound absorptive property of an acoustical material.

normal incidence sound absorption coefficient, α_n; [dimensionless]— *of a surface, at a specified frequency,* the fraction of the perpendicularly incident sound power absorbed or otherwise not reflected.

normal mode—*of a room,* one of the possible ways in which the air in a room, considered as an elastic body, will vibrate naturally when subjected to an acoustical disturbance. With each normal mode is associated a resonance frequency and, in general, a group of wave propagation directions comprising a closed path.

normalized noise isolation class, NNIC—a single-number rating calculated in accordance with Classification E 413 using measured values of normalized noise reduction. (See **normalized noise reduction.**)

normalized noise reduction, *NNR—between two rooms, in a specified frequency band*, the value that the noise reduction in a given field test would have if the reverberation time in the receiving room were 0.5 s. NNR is calculated as follows:

$$NNR = NR + 10 \log (T/0.5)$$

where:
NR = noise reduction, dB and
T = reverberation time in receiving room, s.

> DISCUSSION—The normalized noise reduction is intended to approximate the noise reduction that would exist between two ordinarily furnished rooms.

octave band, *n*—a band of sound frequencies for which the highest frequency in the range is (within 2%) twice the lowest frequency. The position of the band is identified by the rounded geometric mean of the highest frequency and the lowest frequency of the band. The nominal mid-band frequencies of "preferred" octave bands as defined in ANSI S1.6 fall in the series 16, 31.5, 63, 125, 250, 500, 1000 Hz etc.

octave band sound pressure level, OBSPL— Lpl/lf where f indicates the nominal center frequency of a specific band if applicable, [nd], (dB), *n*—sound pressure level for sound filtered using an octave-band filter meeting the requirements of ANSI S1.11.

outdoor-indoor transmission loss, *OITL—of a building facade, in a specified frequency band*, ten times the common logarithm of the ratio of the airborne sound power incident on the exterior of the facade to the sound power transmitted by the facade and radiated to the interior. The quantity so obtained is expressed in decibels.

particle velocity, *u;* [LT^{-1}]; m/s—a fluctuating velocity superimposed by the presence of sound on the other velocities the particles of the medium may have. In analogy with alternating voltage its magnitude can be expressed in several ways, such as instantaneous particle velocity or peak particle velocity, but the unqualified term means root-mean-square particle velocity. In air, the other velocities are those due to thermal agitation and wind currents.

peak sound pressure level, L_{PK} [nd], (dB)**,** *n*—ten times the common logarithm of the square of the ratio of the largest absolute value of the instantaneous sound pressure in a stated frequency band during a specified time interval to the reference sound pressure of 20 micropascals.

percentile level *Lx* [nd], (dB)**,** *n*—*of a time varying level,* the level exceeded × percent of the time during the stated measurement period.

> DISCUSSION—Percentile levels are affected by measurement parameters such as bandwidth, frequency weighting, time weighting, and sampling rate that must be explicitly stated.

pink noise—noise with a continuous frequency spectrum and with equal power per constant percentage bandwidth. For example, equal power in any one-third octave band.

receiving room—*in architectural acoustical measurements,* the room in which the sound transmitted from the source room is measured.

reverberant sound field—the sound in an enclosed or partially enclosed space that has been reflected repeatedly or continuously from the boundaries.

reverberation—the persistence of sound in an enclosed or partially enclosed space after the source of sound has stopped; *by extension,* in some contexts, the sound that so persists.

reverberation room—a room so designed that the reverberant sound field closely approximates a diffuse sound field, both in the steady state when the sound source is on, and during decay after the source of sound has stopped.

sabin, $[L^2]$—the unit of measure of sound absorption in the inch-pound system.

self-noise, *n*—extraneous non-acoustical signals, generated or induced in a measurement system.

sound absorption—(*1*) the process of dissipating sound energy. (*2*) the property possessed by materials, objects and structures such as rooms of absorbing sound energy. (*3*) *A;* $[L^2]$; metric sabin—*in a specified frequency band,* the measure of the magnitude of the absorptive property of a material, an object, or a structure such as a room.

DISCUSSION—Sound energy passing through a wall or opening may be regarded as being absorbed in certain calculations.

sound absorption coefficient, α; [dimensionless]; metric sabin/m^2— *of a surface, in a specified frequency band,* the measure of the absorptive property of a material as approximated by the method of Test Method C 423. *Ideally,* the fraction of the randomly incident sound power absorbed or otherwise not reflected.

sound attenuation—the reduction of the intensity of sound as it travels from the source to a receiving location. Sound absorption is often involved as, for instance, in a lined duct. Spherical spreading and scattering are other attenuation mechanisms.

sound energy, *E;* $[ML^2T^{-2}]$; J—energy added to an elastic medium by the presence of sound, consisting of potential energy in the form of deviations from static pressure and of kinetic energy in the form of particle velocity.

sound energy density, *D;* $[ML^{-1}T^{-2}]$; J/m^3—the quotient obtained when the sound energy in a region is divided by the volume of the region. The sound energy density at a point is the limit of that quotient as the volume that contains the point approaches zero.

sound insulation—the capacity of a structure to prevent sound from reaching a receiving location. Sound energy is not necessarily absorbed; impedance mismatch, or reflection back toward the source, is often the principal mechanism.

DISCUSSION—Sound insulation is a matter of degree. No partition is a perfect insulator of sound.

sound intensity, *I;* $[MT^{-3}]$; W/m^2—the quotient obtained when the average rate of energy flow in a specified direction and sense is divided by the area, perpendicular to that direction, through or toward which it flows. The intensity at a point is the limit of that quotient as the area that includes the point approaches zero.

sound isolation—the degree of acoustical separation between two locations, especially adjacent rooms.

DISCUSSION—This qualitative term may be used in lieu of the more quantitative term **noise reduction**. Sound isolation is achieved by using sound-insulating or sound-attenuating elements.

sound level, L_{AF}—where the A designates the frequency weighting and the F designates fast exponential time weighting (the A is replaced by C to designate C-weighting, and the F by either S or I to designate slow or impulse time weighting), [nd], (dB), *n- of airborne sound*, a sound pressure level obtained using a signal to which a standard frequency-weighting and exponential time weighting has been applied.

NOTE 1—Standard frequency-weightings designated A and C, and exponential time weightings designated fast, slow, and impulses, are defined in ANSI S1.4, Specification for Sound Level Meters.[3]

NOTE 2—The frequency-weighting and exponential time weighting must be specified unless made clear from the context.

NOTE 3—The frequency-weighting modifies the amplitude of the signal as a function of frequency to adjust for differences in perception of sound at different frequencies.

NOTE 4—In symbols, A-weighted sound level L_{AF}, at running time t is

$$L_{AF}(t) = 10 \, log \, \{[1/0.125] \int_{-\infty}^{t} P_A^2(v)^{-(t-v)/0.125} dv]/Po^2$$

where 0.125 is the time constant in seconds for fast time weighting (1.0 for slow time weighting), *v* is a dummy variable of integration, $P_A^2(v)$ is the squared, instantaneous, time varying, A-weighted sound pressure in Pascals, and P_o is the reference sound pressure of 20 µPa.

sound power, *W;* $[ML^2T^{-3}]$; W— *in a specified frequency band,* the rate at which acoustic energy is radiated from a source. *In general,* the rate of flow of sound energy, whether from a source, through an area, or into an absorber.

sound power level, L_W—*of airborne sound,* ten times the common logarithm of the ratio of the sound power under consideration to the standard reference power of 1 pW. The quantity so obtained is expressed in decibels.

sound pressure, *p;* $[ML^{-1}T^{-2}]$; Pa— a fluctuating pressure superimposed on the static pressure by the presence of sound. In analogy with alternating voltage its magnitude can be expressed in several ways, such as instantaneous sound pressure or peak sound pressure, but the unqualified term means root-mean-square sound pressure. In air, the static pressure is barometric pressure.

sound pressure level, L_p—*of airborne sound,* ten times the common logarithm of the ratio of the square of the sound pressure under consideration to the square of the standard reference pressure of 20 µPa. The quantity so obtained is expressed in decibels.

DISCUSSION—The pressures are squared because pressure squared, rather than pressure, is proportional to power or energy.

sound transmission class, STC—a single-number rating calculated in accordance with Classification E 413 using values of sound transmission loss. It provides an estimate of the performance of a partition in certain common sound insulation problems.

sound transmission coefficient, τ; [dimensionless] —*of a partition, in a specified frequency band,* the fraction of the airborne sound power incident on the partition that is transmitted by the partition and radiated on the other side.

DISCUSSION—Unless qualified, the term denotes the value obtained when the specimen is exposed to a diffuse sound field as approximated, for