

RIVERBANK ACOUSTICAL LABORATORIES

TEST SPECIFICATIONS

Riverbank conducts the following standard tests and provides clients with the designated information:

DIFFUSE FIELD SOUND ABSORPTION: ASTM C423 & E795

- Sound Absorption Coefficients
- Sabins and m² reported
- Noise Reduction Coefficient (NRC)
- Sound Absorption Average (SAA)
- Extended frequency range included with all tests (31.5 Hz to 12,500 Hz)
- Mounting Types: A through M, E-400
- Room rental available for research & development work
- ISO 354 available

NORMAL INCIDENCE SOUND ABSORPTION: ASTM E1050

- Impedance Tube Testing
- 100 mm diameter large tube (80 Hz – 1.6 kHz)
- 29 mm diameter small tube (500 Hz – 6.4 kHz)
- Cost-effective rates for research & development work

SOUND TRANSMISSION LOSS: ASTM E90 & E413

- Transmission Loss (TL) Values
- Sound Transmission Class (STC) Ratings per ASTM E413
- ASTM E1332 Outdoor-Indoor Sound Attenuation Rating (OITC)
- SAE J1400 Airborne Sound Barrier Performance
- Extended frequency range available (31.5 Hz to 12,500 Hz)
- Room rental available for research & development work

IMPACT SOUND TRANSMISSION: ASTM E492 & E989

- Impact Insulation Class (IIC)
- Normalized Sound Pressure Levels (Ln)
- Extended frequency range available

DELTA IIC

- Effectiveness of Floor Coverings in Reducing Impact Sound Transmission through Concrete Floors: ASTM E2179 & E989 (Class Determination)
- Measures improvement in impact insulation class due to the floor covering (Δ IIC)
- Frequencies, 21 1/3 octave bands, 50 to 5000 Hz
- Reduction in impact sound pressure levels (Lref, c)

ACOUSTIC ISOLATION ENCLOSURES

- ASTM E596: Noise Reduction of Sound-Isolating Enclosures
- ANSI S3.1: Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms

SOUND POWER RATINGS

- ANSI, ARI, ISO, SAE, ASHRAE, MIL standards
- NVLAP Accredited for ANSI S12.51 / ISO 3741
- Direct/Absolute or Comparison Method
- Spectrum, Averaged Sound Pressure (Lp) Values
- Derived Sound Power (Lw) Values
- Extended frequency range available
- Discrete frequency determination (ARI) is available
- Room rental available for research & development work

REFERENCE SOUND SOURCE CALIBRATION

- ANSI S12.5 & S12.51
- ISO 6926 & ISO 3741
- Calibration Tests on all fan type reference sound sources, including: Acculab RSS, ILG, Bruel & Kjaer Type 4204, G & G Acoustics, etc.

SOUND PRESSURE LEVELS (LABORATORY OR FIELD)

- 1/3 octave (Lp) dB Levels
- Octave (Lp) dB Levels
- dB(A) (Lp) dB Levels
- FFT (Fast Fourier transform)

IN-SITU ACOUSTICAL TESTS

- ASTM E336: Airborne Sound Attenuation between Rooms in Buildings (FSTC, ASTC, NR, NIC, ATL)
- ASTM E1007: Field Measurement of Tapping Machine Impact Sound Transmission through Floor-Ceiling Assemblies (FIIC, AIIC, ANISPL, ISPL)
- Sound Pressure Level (dB-SPL, 1/3 Octave Band, FFT)
- Environmental Acoustic Surveys
- Reverberation Time (T30, T20, etc.)
- Vibration (FFT)
- ASTM E 2964 Door insertion loss, DTC

ACCREDITATION

RAL is accredited by the National Institute of Standards and Technology (NIST) through the National Voluntary Laboratory Accreditation Program (NVLAP) for selected acoustical testing services conducted in accordance with established standards.

The scope of the NVLAP accreditation currently includes:

NVLAP Code	Designation	Description
Sound Absorption		
08/P03	ASTM C423	Sound absorption and sound absorption coefficients by the reverberation room method
08/P102	ISO 10534-2	Acoustics: Determination of sound absorption coefficient and impedance in impedance — Part 2: Transfer-function method
08/P35	ASTM E1050	Impedance & absorption of acoustical materials using a tube, two microphones, and a digital frequency analysis system
08/P44	ISO 354	Acoustics/Measurement of sound absorption in a reverberation room
08/P72	AS ISO 354	Acoustics/Measurement of sound absorption in a reverberation room
Sound Transmission – Airborne		
Airborne Sound Transmission – Field		
08/P100	ASTM E2964	Standard Test Method for Measurement of the Normalized Insertion Loss of Doors
08/P31	ASTM E336	Measurement of airborne sound insulation in buildings
Sound Transmission of Partitions		
08/P06	ASTM E90	Laboratory measurement of airborne sound transmission loss of building partitions
08/P104	ISO 10140-3	Acoustics: Laboratory measurement of sound insulation of building elements — Part 3: Measurement of impact sound insulation
08/P96	ISO 10140-2	Acoustics: Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation
Sound Transmissions in Spaces		
08/P08	ASTM E596	Laboratory measurement of noise reduction of sound-isolating enclosures
08/P54	SAE J1400	Laboratory measurement of the airborne sound barrier performance of automotive materials and assemblies
08/P99	ANSI S3.1	Maximum permissible ambient noise levels for audiometric test rooms
Sound Transmission – Structure Borne		
Structure Borne Sound Transmission – Field		
08/P32	ASTM E1007	Field measurement of tapping machine impact sound transmission through floor-ceiling assemblies and associated support structures
Structure Borne Sound Transmission – Laboratory		
08/P07	ASTM E492	Laboratory measurement of impact sound transmission through floor-ceiling assemblies using the tapping machine
08/P59	ASTM E2179	Laboratory measurement of the effectiveness of floor coverings in reducing impact sound transmission through concrete floors
Sound Power		
Sound Power – General		
08/P46	ISO 3741	Determination of sound power levels of noise sources precision methods for broad-band sources in reverberation rooms
08/P60	ANSI S12.51	Determination of sound power levels of noise sources using sound pressure – precision method for reverberation rooms
Sound Power – Machine Specific		
08/P103	ISO 5129	Acoustics: Measurement of sound pressure levels in the interior of aircraft during flight
08/P39	ANSI S12.5	Requirements for the performance and calibration of reference sound sources
08/P51	ISO 6926	Determination of sound power levels of noise sources requirements for the performance and calibration of reference sound sources
Standard Practices in Acoustical Testing		
08/P70	ASTM E795	Standard practice for mounting test specimens during sound absorption tests

CONTACT:

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About Alion

At Alion, we combine large company resources with small business responsiveness to design and deliver mission-critical engineering solutions. With an 80-year technical heritage and an employee-base comprised of more than 30% veterans, our engineers, technologists, and program managers bring together an agile engineering methodology and the best tools on the market to deliver mission success faster and at lower costs. Based just outside of Washington, D.C., we help clients turn big ideas into real solutions.

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