DIFFUSE FIELD SOUND ABSORPTION (ASTM C423 AND E795, ISO 354 & SAE J2883_201504)

⅓ Octave Sound Absorption coefficient (SAC), Sabins & absorption area in m^2, Noise Reduction coefficient (NRC) and Sound Absorption Average (SAA) and α_w (ISO).

Small cabin testing for research & development and small sample testing (SAE J2883_201504)

DIFFUSE FIELD SOUND TRANSMISSION LOSS (ASTM E2249, E413 AND ISO 15186-1)

Octave, ⅓ Octave and narrow band Sound Transmission Loss (TL), STC (ASTM) and Rw (Iso) ratings.

NORMAL INCIDENCE SOUND ABSORPTION (ASTM E1050 & ISO 10534-2)

Octave, ⅓ Octave & Narrow band Absorption coefficient (α), Complex reflection coefficient (R), Normalized Surface Impedance (Zs/Zair)

NORMAL INCIDENCE SOUND TRANSMISSION (ASTM E2611)

Octave, ⅓ Octave & Narrow band Absorption coefficient (α), Complex reflection coefficient (R), Normalized Surface Impedance (Zs/Zair), Normal incidence transmission loss (NSTL), normalized characteristic impedance (Z$Zair), Wave Number (k), Equivalent dynamic bulk density (ρeq), Equivalent dynamic bulk modulus (Keq), Transfer matrix coefficients (Tij)

EQUIVALENT FLUID PROPERTIES (JCAL MODELLING OF POROUS MATERIALS)

Porosity ϕ, airflow resistivity σ (ASTM C522-03 & ISO 9053), Tortuosity α_∞, Thermal & Viscous Characteristic length Λ and Λ'

PORO-ELASTIC PROPERTIES (BIOT MODELLING OF POROUS MATERIALS)

Porosity ϕ, Airflow resistivity σ (ASTM C522-03 & ISO 9053), Tortuosity α_∞, Thermal & Viscous characteristic length Λ and Λ', Yong Modulus E, Structural loss factor (damping) η, Poisson ratio ν.

DAMPING MATERIAL PROPERTIES WITH TEMPERATURE DEPENDENCE (ASTM E756 OBERST BEAM)

Young Modulus E and Loss factor η vs temp & frequency

TESTING SERVICES

BUILDING ACOUSTICS

Speech Intelligibility Index (SII, ANSI + ASA S3.5-197); Room Noise quality Index (NC, RC or RNC, ANSI + ASAS12.2-2019); In situ sound transmission loss ASTM E336 & ASTC index ASTME413; ASTM E336-09, Field Measurement of Building façade od and façade elements airborne sound attenuation (ASTM E966-04) and OITC Index per ASTM E1332; Impact Noise Transmission with tapping machine ASTM E1007and AIIC index ASTM E336. Reverberation time measurement RT60 ASTM E2235

ENVIRONMENTAL NOISE

Environmental Noise evaluation following Quebec MELCCFP specifications for authorization to operate a business or following the regulation on quarries and sand pits; Environmental Noise simulations

INDUSTRIAL NOISE

Workers Noise Exposure Measurement (ISO 9612), Sound sources detection with acoustic imaging, Sound Power measurements ISO9614; Acoustic Mapping; Industrial Noise simulations, Solution design and proposal

SOUND POWER RATINGS Lw

Sound pressure method in reverberation room (ISO 3741), Sound pressure method in hemi-anechoic room (ISO 3744), Sound pressure method in anechoic room (ISO 3745), Reference source method (ISO 3747), Sound intensity method (ISO 9614-3).

MODAL ANALYSIS

Excitation with shaker or impact hammer, FRF measurements (d/f;v/f;a/f), accelerometers or scanning Laser vibrometer. Mode shape and frequency analysis

NVH TESTINGS

Noise source identification, Squeak % rattles localization, HVAC noise Wind induced noise sources, pass-by noise, CFD analysis, wind tunnel measurements, vibration control, Modal analysis, order tracking, Transfer Pass analysis (TPA)