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siBuilding

Measuring system for determining the sound insulation for airborne and impact sound

siBuilding is an application for determining the sound insulation according to DIN/ISO 140. Measurement, analysis and reporting are integrated in a single interface.

Especially high measuring dynamics

The use of special filter techniques produces standardized measurements with better dynamics than other systems. Disturbing noises are measured at the same time that the sound insulation is determined. Loudspeaker overdriving is uncritical. All of this results in a maximum signal/disturbing noise ratio with optimum control, thereby ensuring measurability under all operating conditions.

Optimum user guidance

siBuilding is equally suitable for simple use by assistants and demanding analysis by professionals. The user is optimally guided, from entering the room parameters and specifying the measured transmission paths to printing out data.

Selectable system configuration

1 to 12 channels can be measured simultaneously by combining standard laptops with different front ends. This makes it possible to use lightweight systems economically and portably in the field as well as to measure four channels in a minimum amount of time in the laboratory.

Applications

- Measurement of the impact sound insulation
- Measurement of the airborne sound insulation
- Measurement of the reverberation time

Additional options

- Determination of the pulse response
- Determination of the speech intelligibility
- Analysis of architectural acoustic parameters

Relevant standards

- ISO 140-4 (sound insulation in buildings - airborne sound insulation)
- ISO 140-7 (sound insulation in buildings - impact sound insulation)
- ISO 717 -1 (rating of airborne sound)
- ISO 717 -2 (rating of impact sound)
- others on request

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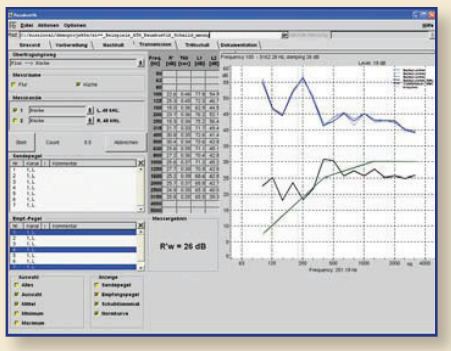
Immediately measurable

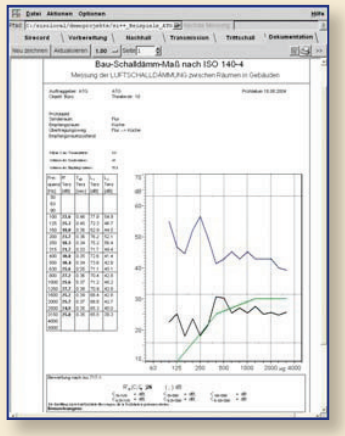
A typical measurement can be performed immediately after the microphones have been calibrated. The preparation time for the user is therefore minimal.



Administration, measurement, tables and results interpreted in one window for easy handling.

Optimized measurement of several transmission paths

After several rooms and transmission paths have been specified for measurement, the desired measurement can be selected from the list of tasks. The measurements can be performed in any order, and pending measurements are displayed by the software as suggestions. In this way, nothing is overlooked and the measurements are worked through without additional planning effort.



Print-out of the sound insulation in buildings according to ISO 140-4 with measurement data and further individual descriptions.

Flexibility for users

All names and parameters can also be edited at a later time. As soon as the measurements and room parameters are complete, the finished analysis and print-out are available. In this way, the measurement system adapts to the way you work.

Combination of precision and speed

To measure the reverberation time, impulse excitation analyses (with a gun) are also supported for fast overview measurements.

Additional options for analyzing architectural acoustic parameters

The recorded data can be post-processed for special tasks with the complete range of modules in the sound and vibration analysis system.

Presented by:

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Measurements

- Parallel measurement of several channels
- Send and receive level are simultaneously and serially measurable
- Output of the excitation signal via PC
- Alternatively, playback from CD when no connection exists between source and receiving room
- Measurement length can be selected to improve the signal-to-noise ratio and to measure longer reverberation times

Operation

- Calibration values for microphone sensitivities can be entered directly or determined with a sound-pressure calibrator
- Overdriving information from hardware and software immediately visible and marked on the measurements if necessary
- Output of the complete, standardized print-outs

Hardware configuration

- Can run on standard PC/laptop under Windows® 2000/XP/Vista and Linux with PC-card slot and/or SCSI interface

Frontends:

- 1-channel: Digital measurement microphone on USB
- 2-channel: SINUS-Harmonie™ / Soundbook™ light
- 4-channel: SINUS-Harmonie™ / Soundbook™
- N-channel: HEIM-Systems DATaRec® 2, 3 and 4 series

Software

Signal processing

- High signal/noise ratio due to special measuring method
- Calculation and display of the disturbance level from the time period of the transmission / decay measurement
- Selectable frequency range 125-3150 Hz or 50-5000 Hz
- Calculation based on measurements in third-octave bands
- Online display of the current third-octave spectrum

User guidance

- Management of the source / receive rooms and transmission paths
- Resumption of measurement after interruption/restart
- Integration of room parameters even after the measurement and subsequent discarding of individual measurements
- Automatic averaging of several measurements

Additional option of architectural acoustics (*):

- STI/RASTI
- Determination of speech intelligibility
- Pulse response, reverberation times: EDT, RT10, RT20, RT30

* Distinctness, clarity (C50, C80)

* Cross correlation functions IACC_A, IACC_E, IACC_