



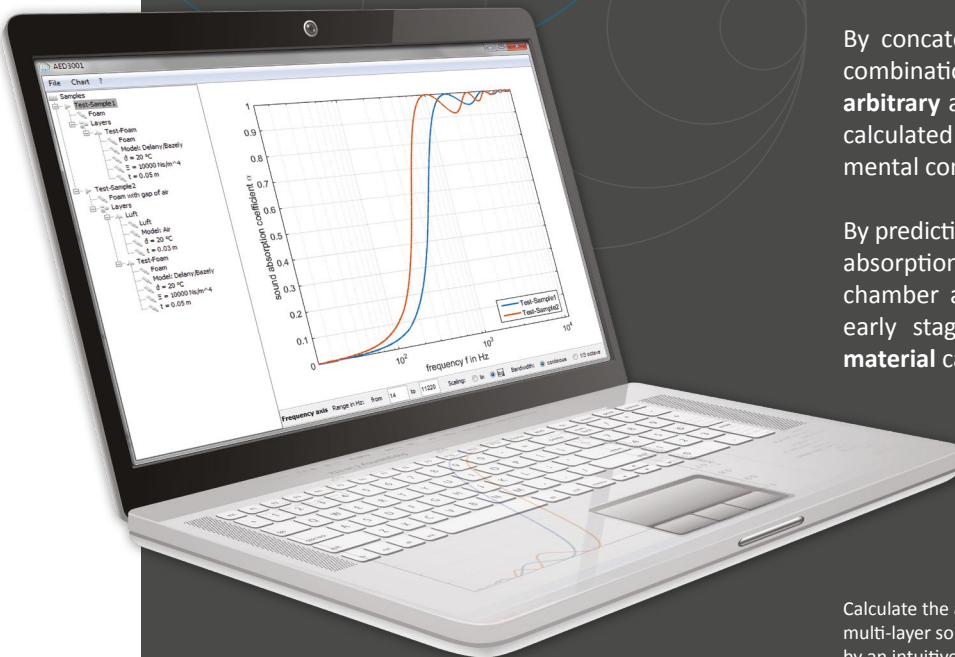
Sound absorber software AcoustiCalc® Absorber

The sound absorber software AcoustiCalc® Absorber is an effective tool for the acoustic design of sound absorbers by simulating the sound absorption coefficient.

By concatenation of open-cell material layers in combination with air gaps, the acoustic behavior of **arbitrary** and **multi-layer** sound absorbers can be calculated **simply** and **fast** under defined environmental conditions.

By predicting results of measurements of the sound absorption coefficient in the reverberation chamber and/or the Alpha cabin, already in the early stage of development **time**, **money** and **material** can be saved.

Calculate the acoustic efficiency of your multi-layer sound absorber fast and easily by an intuitive user interface.



Sound absorber software AcoustiCalc® Absorber

Fields of application

Acoustic consultancy and design

The sound absorber software is interesting for you if you are a consulting engineer who applies and acoustically designs sound absorbers to improve the properties of buildings and vehicles with respect to room acoustics, to optimize the acoustic effectiveness of noise barriers and road surfaces or to achieve a legally required or appropriate noise reduction of sound emitting devices and machines. Typically, sound absorbers are applied in areas such as:

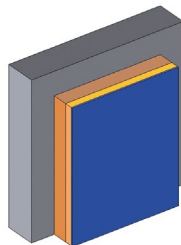
- **wall absorbers, ceiling absorbers, movable partitions** for offices, workplaces, factory buildings, in concert and multipurpose halls as well as cabins of automobiles, trains and airplanes for optimizing the reverberation time, sound propagation and the speech intelligibility
- **enclosures and thermal isolations** for casings and housings of machines, devices and single components
- **silencers and mufflers** of machines, devices, vehicles, ventilation systems and air conditioning systems
- sound absorbing **noise barriers** and noise screens near roads and railroads
- sound absorbing **road surfaces**

Fabrication of sound absorbers

The sound absorber software is also very helpful to you if you are a manufacturer who develops, fabricates and distributes collections of sound absorbers that are to be efficiently applicable to a wide operational range.

Calculation models and input parameters

Numerous computational models to map the acoustic effectiveness of open-porous absorbers are available for your design. For that matter, measurable characteristic values of materials are applied as input parameters, especially airflow resistance, porosity and structure factor.



Setup of multi-layer absorber in front of rigid wall

Alternatively, complex characteristic absorber values that were directly measured in the transmission tube

AcoustiTube® can be imported to also consider geometrically complex open-cell material layers at the best possible way.

Calculation results

By selecting geometrical and material parameters, you can optimize all multi-layer systems with respect to the sound absorbing requirements. By flexible combination of single layers, also geometrically complex sound absorbers can be assembled.

The calculation of the sound absorption coefficient can be carried out for different sound fields:

- **simulation results for statistical (diffuse) sound incidence** can be directly compared to the sound absorption coefficient measured in the reverberation chamber and/or the Alpha cabin → direct determination of the rated sound absorption coefficient and the absorber class
- **simulation results for perpendicular sound incidence** can be directly compared to the sound absorption coefficient measured in the impedance tube AcoustiTube®

Advantages of sound absorber software

An essential advantage of the sound absorber software in contrast to measurements in the reverberation chamber/ Alpha cabin is that different products can be directly compared to each other with respect to their sound absorbing properties for one defined thickness, also if the product-specific thickness varies. All layer-specific input parameters need to be determined only once.