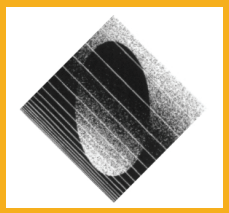
ZORBA

For predicting the sound absorption of porous materials , slot absorbers and panel absorbers

Sound Absorption Prediction Software



MARSHALL DAY ACOUSTICS

This software was developed by Keith Ballagh, Senior Partner with Marshall Day Acoustics. It was developed to enable quick and simple calculation of complex theoretical models that are of great practical use in predicting the performance of a wide range of acoustic materials and constructions.

Marshall Day is an independent acoustical consulting firm. The firm is located in New Zealand, Australia and Malaysia with offices in Auckland, Wellington, Christchurch, Bay of Plenty, Melbourne, Brisbane and Kuala Lumpur.

MDA have approximately thirty professional staff, each bringing their own unique experience to the firm and providing a wide range of acoustical, environmental noise, and noise control design services.

Marshall Day Acoustics

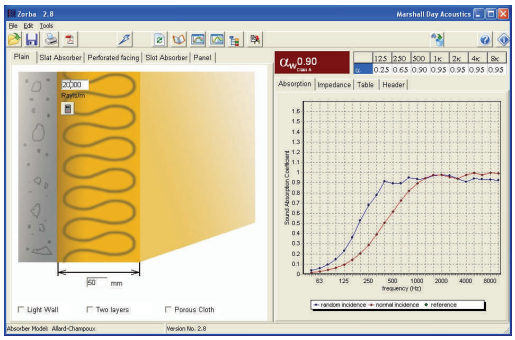
84 Symonds St
Auckland
New Zealand

Tel +64 (0)9 379 7822
Fax:+64 (0)9 309 3540

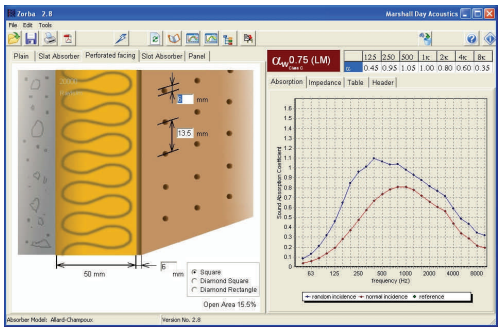
FEATURES:

- **predicts the sound absorption coefficients of porous materials such as fibreglass, mineral wool and polyester, with or without perforated, slatted or panel coverings**
- **Estimates the random incidence and normal incidence absorption coefficients as well as acoustic impedance**

Absorber is a computer program for predicting the sound absorption of common acoustic materials such as fibreglass, mineral wool or polyester. The effect of perforated or slatted coverings can be predicted as can that of panel absorbers. The properties can be predicted by knowing the flow resistivity of the material and its thickness and the dimensions of the slots or perforations. The flow resistivity is a measure of the resistance



to steady airflow and can be readily measured (ASTM C522) or for many materials can be estimated from the density and fibre diameter. Various models for predicting absorption have been developed over the years. Absorber gives a choice of different models but by default uses Allard and Champoux's model (JASA Vol 91 1992) which is the most accurate simple model currently available for predicting absorption. The model is accurate for high porosity materials (i.e. most common acoustic absorbers) when predicting normal incidence absorption. The program has the unique ability to predict random incidence absorption taking into account the variation of absorption with angle of incidence and the diffraction by the edges of the material. Within limits this will give a good estimate of the absorption that would be measured in a reverberation chamber . The performance of slot absorbers, perforated facings and panel absorbers may be predicted by entering the physical dimensions of the slots or holes. A combination of two materials of different flow resistivity and thickness can be modeled.



Distributor - USA, Canada & Mexico
Navcon Engineering
701 W. Las Palmas Dr.
Fullerton, CA 92835 USA
Tel: (+1) 714-441-3488
W: www.navcon.com
E: forschner@navcon.com

Absorber version 2.8 - Main Features

- Predicts sound absorption coefficients of porous materials
- Predicts both normal and random incidence absorption
- Simple input of physical parameters
- Also predicts performance of perforated, slatted and panel absorbers
- Up to two layers of different materials per absorber