Mecanum

Noise Control Services

Porosity meter

The system is specifically designed to obtain a reliable measurement of the open porosity and true bulk density of a wide range of materials used for noise control. The measurement method is based on the perfect gas law and measure the volume of the solid phase of a porous aggregate to deduce its open porosity.

ϕ – open porosity
The open porosity is defined as the fraction of volume that is occupied by the fluid in the interconnected porous network.

ρ_1 – true bulk density (kg/m³)
The true bulk density is the in vacuum density of the porous aggregate.

The system and other related hardware for materials testing and characterization have been validated against other standard methods and analytical software modeling.

The porosity meter has been a proven value to the world's leading materials suppliers to both the automotive and aircraft industry. It is used for quality control in the manufacturing process of materials, research, development and innovation.

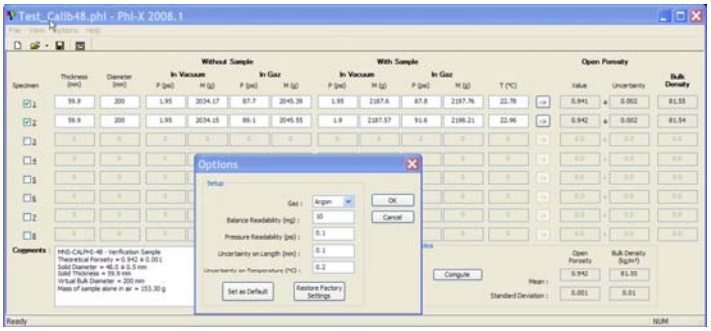
The open porosity measured with the system is compatible with the well known Biot's poroelasticity equations and main acoustical prediction software.

The system includes one 112-mm x 120-mm (diameter x height) test chamber, a verification sample, and the Phi-X™ software.

The Phi-X™ software assists the experimenter during the measurement and calculate the statistics on the open porosity and true bulk density.

The PHI system works with disc shaped samples as those used for Mecanum's or B&K impedance tubes, resistivity meter and quasi-static mechanical analyzer. Other shapes are also possible.

Optional calibrated samples and container are available.



Phi-X™ software

100 to 240 VAC nominal, 50/60 Hz

Compressed gas (typically argon) cylinder.

Input pressure: 100 psi.

Hardware: 61 x 50 x 20 cm³, 30 kg.

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