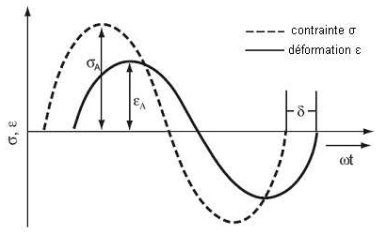
CTTM
CENTRE DE TRANSFERT
DE TECHNOLOGIE DU MANS

Young modulus and loss factor measurements



The complex Young modulus (E'+jE'') is an essential parameter for the characterization and simulation of the acoustic behaviour of viscoelastic and porous materials.

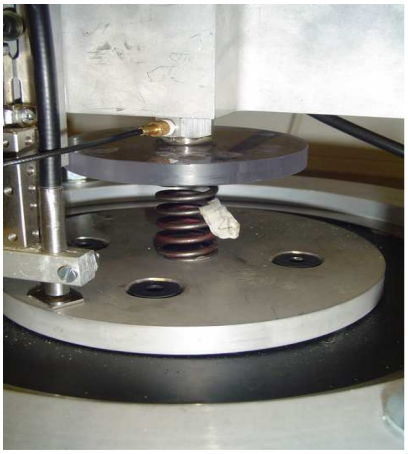
In association with LAUM (Laboratoire d'Acoustique de l'Université du Maine), CTTM has developed a setup dedicated to the measurement of Young modulus and loss factor of acoustic materials. The variation of these quantities is evaluated versus frequency and static compression rate.

Principle

The sample to characterise is compressed between two plates by a shaker. Young's modulus and loss factor are calculated from the measurement of both the force and the forced displacement. The shaker also forces a static strain on the sample and stresses the material at various frequencies.

Technical specifications

- Frequency range : 10 Hz - 100 Hz.
- Sample thickness : 1mm to 65mm.
- Static strain : 0% to 10%
- Range : 2kPa to 2000kPa.



Features

- Automatic setting of the static strain and of the magnitude of the sinusoid excitation
- Contact detection (zero strain) through force signal analysis
- Automatic stabilisation of the system by a timer after applying a new strain
- Calibration by calibrated springs

Les projets de ressourcement des compétences du CTTM sont réalisés avec le soutien financier de :
Avec le FEDER

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