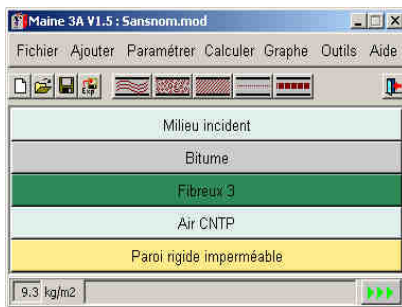
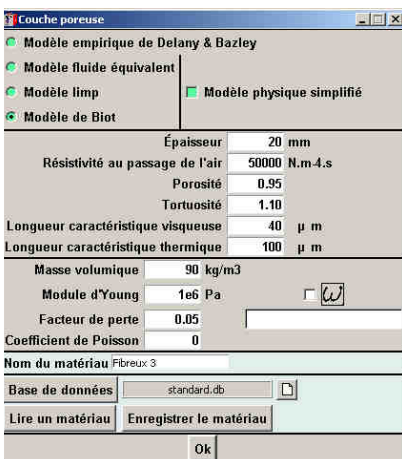


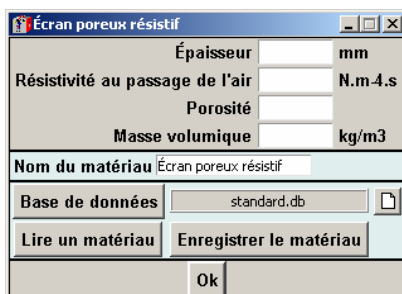
MAINE 3A



Multi layers



Poroelastic layer



Porous resistive screen

MAINE 3A is a simulation software product for predicting the acoustic properties of layered structures containing absorbent materials. Featuring a user-friendly graphics interface MAINE 3A is a highly efficient tool for optimising the acoustic absorption or insulation properties of composite materials.

Modelling

- A multilayer material is modelled as a stack of plane propagation layers of infinite lateral dimension.
- MAINE 3A works by modelling individual layer properties using a transfer matrix for high performance calculation times.
- Supported propagation media are fluid, poroelastic, viscoelastic, perforated plate, thin resistive layer.
- Several models are available for the modelling of poroelastic materials: (Delany-Bazley, equivalent fluid, Biot-Allard, Limp).

Computing

- MAINE 3A computes the transmission loss, absorption, impedance, and reflection coefficient. MAINE 3A also features global indicators (R_w , α_w , DLR, $DL\alpha$).
- Acoustic excitation can be diffuse field or plane wave of given incidence.
- Results can be a function of the frequency or incidence angle.
- MAINE 3A includes a built-in database with the intrinsic parameters of common materials. Users can document the database according to their needs. CTTM can perform the characterisation of poroelastic materials.
- A special application simulates the influence of 1D compression on the intrinsic parameters of a fibrous material.
- MAINE 3A can take into account the effects of a sample's finite dimensions over the transmission loss (space windowing).

Configurations

Computer operated by Windows 95/98/2000/NT, Linux.