



"AlphaCell is probably the most advanced TMM/FTMM suite for NVH simulations"



AlphaCell predicts the **vibro-acoustic** response of **multi-layer systems** to various sound excitations :

- **super easy & super fast** simulations
- **listen** to sound package efficiency
- broad application material **library**
- **complete set** of material models
- various **imports / exports**
- **reactive** and **skilled support**

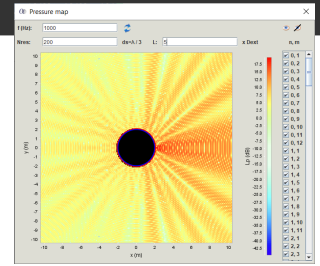
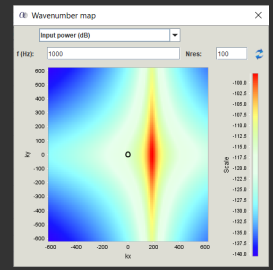
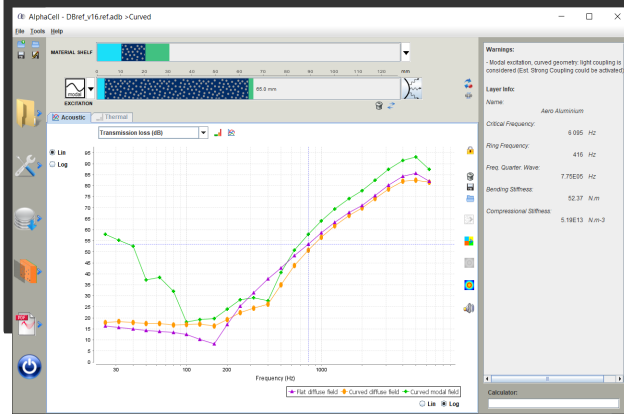
Save your time and energy to focus on your **core activities** !

AlphaCell is a software product by MATELYS-Research Lab > <https://alphacell.matelys.com/>

Available in Germany via :
Gesellschaft für Akustikforschung Dresden mbH
Blumenstraße 80
01307 Dresden
Germany

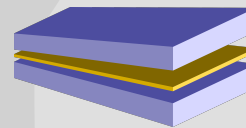
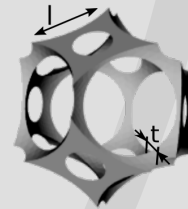
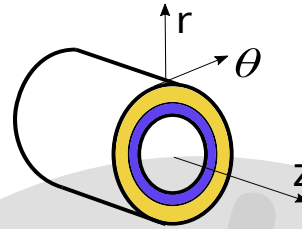
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KEY FEATURES

- intuitive interface
- listening of solution efficiency
- plane and curved geometries
- thermal properties including bridges
- multiple studs in series
- generalised equivalent plate & porous loss models
- imperfect interfaces
- corrugated & ribbed plates
- multiple fluids including water
- compressed fibrous model
- extended material library
- fully scriptable
- export of material cards and FE model

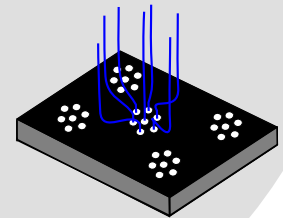


Material Model Configuration Panel:

- Layer name: Building Plaster board
- Thickness (mm): 12.5
- Acoustic model: None
- Elastic model: Elastic (orthotropic)
- Heterogeneous model: None
- Type: Full Orthotropic
- Properties: $\rho = 700.0$ (kg/m³), $\mu = 8.75$ (kg/m²), $E1, E2, E3, G12, G23, G31, \nu12, \nu23, \nu31, \eta$

MATERIAL MODELS

- ↳ porous materials
fibrous, foams, granulars, compressed, orthotropic
- ↳ perforated plates
circ., square, conical, slit perf., non-woven, annular pores, high SPL
- ↳ solid materials
isotropic, visco-elastic, orthotropic
- ↳ orthotropic solid materials
3D, thin plate, transverse isotropic
- ↳ equivalent plate models
condensed, corrugated, stiffened/ribbed plates
- ↳ heterogeneous materials
elastic / solid / porous inclusions, resonators, sorption



VIBRO-ACOUSTIC EXCITATIONS

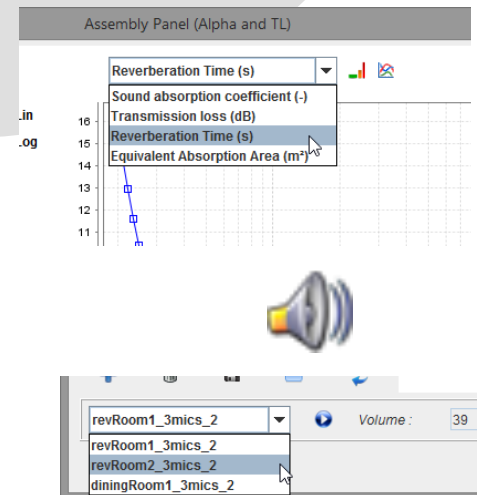
- ↳ air borne sounds
plane waves, diffuse field, modal sound field
- ↳ structure borne excitations
dynamic force, moving wall, tapping/rolling machine, rain fall
- ↳ turbulent boundary layer

Global Indicators			
Cen_nnnn	Rw (C. Ctr)	C50-3150	Lnw
ud... Ctr100-5000	31.0 (-3.0;-9.0)		
M... Lnw	34.0 (-3.0;-8.0)		
fF... C1	33.0 (-4.0;-9.0)	-4.0	81.0
fMM	32.0 (-3.0;-8.0)	-3.0	82.0

Assembly Panel (Alpha and TL)

Spatial windowing:

- None
- Lx (m): P. Bonfiglio - (α and TL - all exc.)
- Ly (m): Abacus - (α and TL - airborne exc.)
- S (m²): D. Rhazi - (α and TL - all exc.)
- T.E. Vigran - (TL - all exc.)
- Y. Yu - (α and TL - all exc.)



AlphaCell runs under MS-Windows 7,8,10,11 ; Linux ; Unix ; Mac



AlphaCell is a software product designed, developed, distributed and supported by MATELYS-Research Lab
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