



"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 :

- **easy & 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/>

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KEY FEATURES



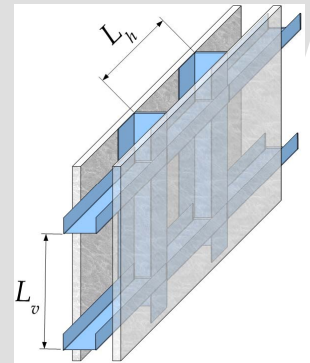
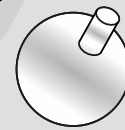
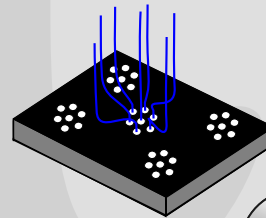
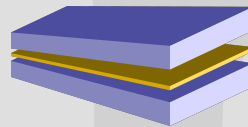
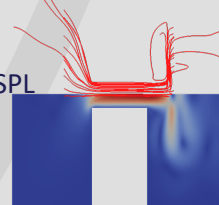
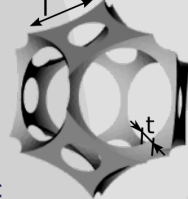
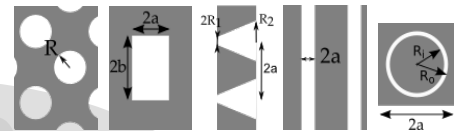
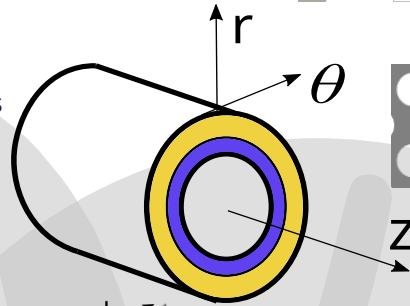
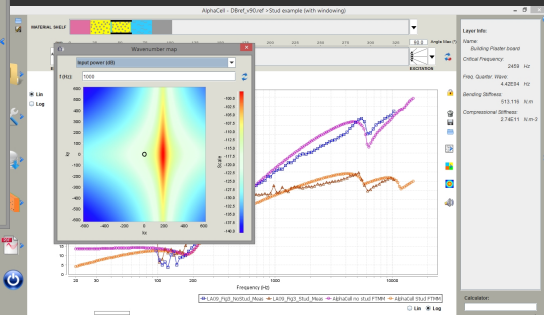
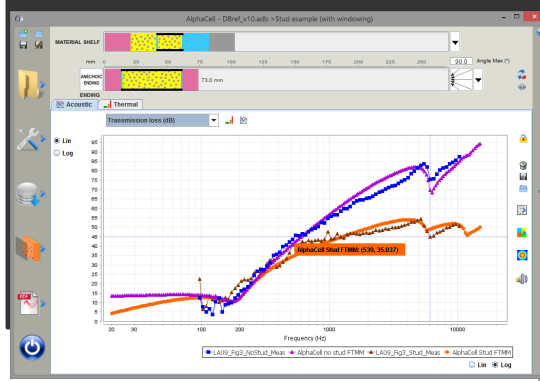
- intuitive interface
- listening of solution efficiency
- plane and curved geometries
- thermal properties including bridges
- multiple studs in series
- generalised equivalent plate & porous models
- imperfect interfaces
- corrugated & ribbed plates
- multiple fluids including water
- compressed fibrous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

MATERIAL 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



Assembly Panel (Alpha and TL)

Global Indicators				
	Gen_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...	Cl	33.0 (-4.0;-9.0)	-4.0	81.0
FMM		32.0 (-3.0;-8.0)	-3.0	82.0
	ΔLw			
	ClΔ			
	ΔLin			
	LiA			
	STC			

frequency options

Spatial windowing:

- None
- P. Bonfiglio - (α and TL - all exc.)
- Abacus - (α and TL - airborne exc.)
- D. Rhazi - (α and TLL - all exc.)
- T.E. Vigran - (TL - all exc.)

Atmospheric conditions:

Reverberation Time (s)

Sound absorption coefficient (-)

Transmission loss (dB)

Reverberation Time (s)

Equivalent Absorption Area (m²)

revRoom1_3mics_2

revRoom1_3mics_2

revRoom2_3mics_2

diningRoom1_3mics_2

Volume : 39

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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