



"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
- ↳ broad application material **library**
- ↳ **complete set** of material models
- ↳ various **imports / exports**
- ↳ **reactive** and **skilled support**

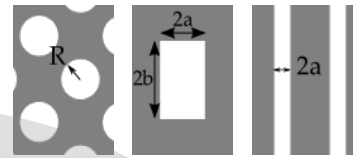
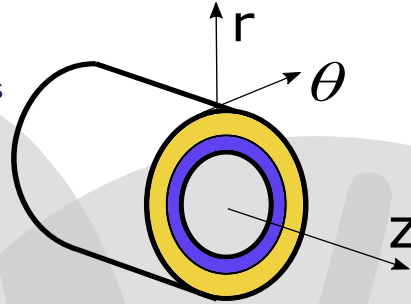
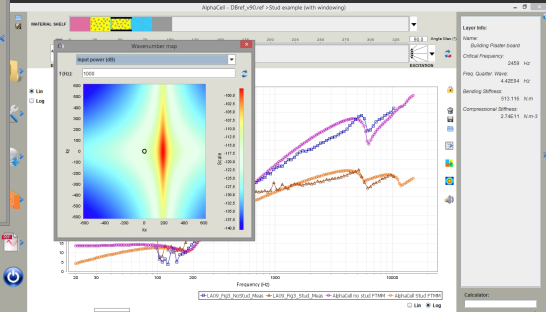
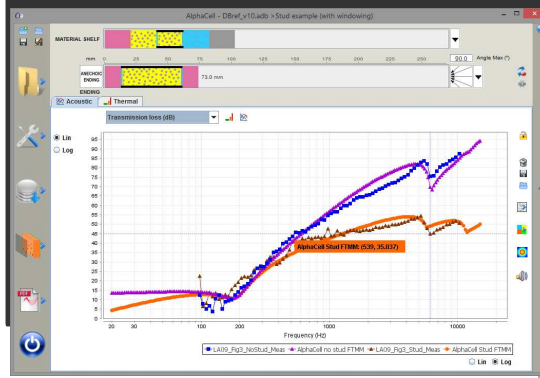
Save your time and energy to focus on your **core activities** !

Prepare to be MATELYS approved !



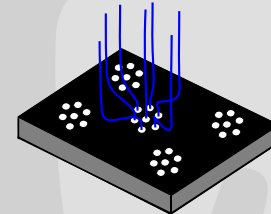
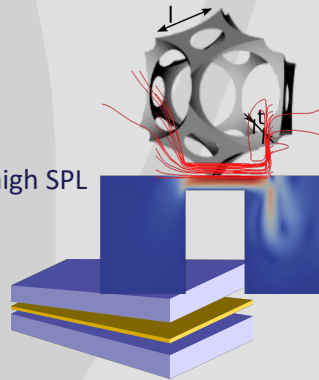
KEY FEATURES

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



MATERIAL MODELS

- ↳ porous materials
fibrous, foams, granulars, compressed, orthotropic
- ↳ perforated plates
circular, square, 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 plates
- ↳ heterogeneous materials
elastic / solid / porous inclusions, resonators, studs

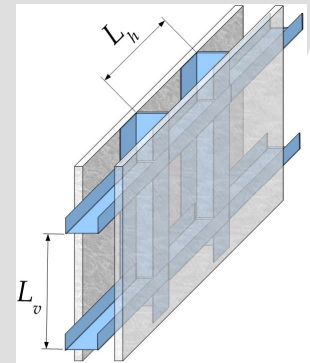
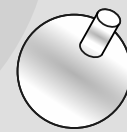


Layer name: Building Plaster board
 Thickness (mm): 12.5
 Acoustic model: None
 Elastic model: Elastic (orthotropic)
 Heterogeneous model: None

Properties:
 ρ : 700.0 (kg m⁻³)
 μ : 8.75 (kg m⁻²)
 Type: Full Orthotropic
 E_1 , E_2 , E_3
 G_{12} , G_{23} , G_{31}
 ν_{12} , ν_{23} , ν_{31}
 ν_{11} , ν_{22} , ν_{33}
 η : 0.08 [0.08]

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				
	Gen_ennn	R_w (C, Ctr)	C50-3150	L_nw
ud...	Ctr100-5000	31.0 (-3.0;-9.0)		
M...	Lnw	34.0 (-3.0;-8.0)		
I F...	Cl	33.0 (-4.0;-9.0)	-4.0	81.0
FMM		32.0 (-3.0;-8.0)	-3.0	82.0
	ΔL_w			
	C_{1d}			
	ΔL_{lin}			
	LiA			
	STC			

Spatial windowing:
 None
 Lx (m): None
 Ly (m): None

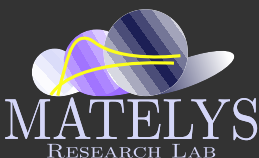
Atmospheric conditions:

Reverberation Time (s): 16.0
 Sound absorption coefficient (-): 0.16
 Transmission loss (dB): 16.0
 Reverberation Time (s): 16.0
 Equivalent Absorption Area (m²): 16.0

revRoom1_3mics_2
 revRoom1_3mics_2
 revRoom2_3mics_2
 diningRoom1_3mics_2

Volume: 39

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



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

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