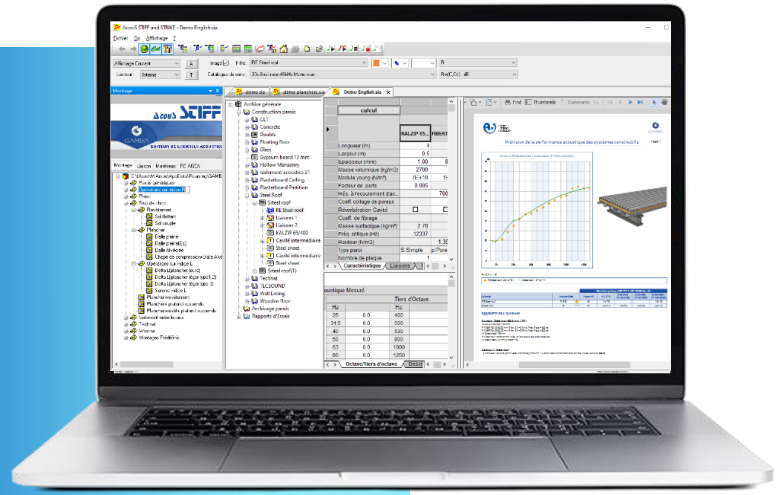
AcouS **STIFF** ®
AcouS **STING** ®

Software for predicting sound insulation index and impact noise level

SOFTWARE FOR PREDICTING SOUND INSULATION INDEX AND IMPACT NOISE LEVEL

The AcouS STIFF® and AcouS STING® software are simple and adapted tools that allow:

- **AcouS STIFF®**: To determine the sound insulation index of a simple or complex partition.
- **AcouS STING®**: To determine the impact noise level of a simple or complex floor.
- Assisting in the development of new products.
- Optimizing laboratory measurement campaigns.
- Evaluating the performance of a lining based on its support or floor covering.
- Extrapolating the performance of conventional structures.
- Predicting and optimizing non-conventional structures.
- Understanding the acoustic behavior of a partition or a floor.



MAIN FEATURES AND TARGET AUDIENCE

Robust calculation models :

The basic theoretical models have been developed either through internal research or contract-based research. The results of these models have been validated through hundreds of tests comparing them with laboratory measurements. These models are continuously evolving.

Compliance with standards :

Index calculations comply with standards (ISO 717-1, ISO 717-2, NFS 31-051, ASTM E413, ...).

Target audience :

This software is designed for all engineers who need to design or specify partitions, including:

- Study engineers who need to recommend construction systems, design, or specify complex floor systems.
- Technical sales representatives responsible for prescribing a structure derived from a catalog system.
- Engineers in a research and development department responsible for developing a partition, a floor, an assembly system, or a manufacturing technology.

ASSEMBLY DATABASE: DIFFERENT TYPES OF SIMULATED PARTITIONS AND FLOORS

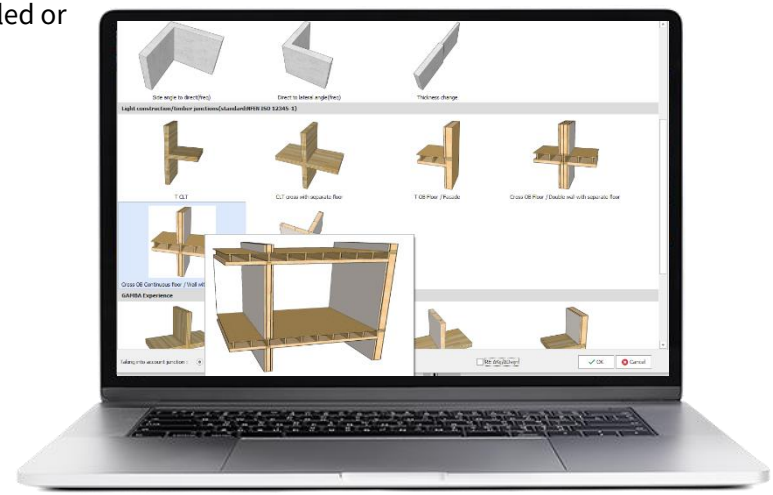
AcouS STIFF® :

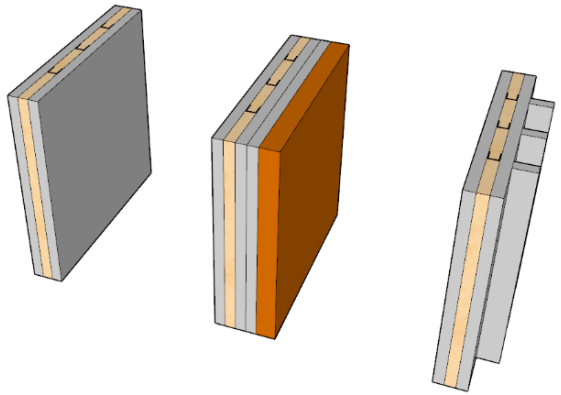
- Simple partitions.
- Laminated or multi-layered partitions.
- Orthotropic partitions (optional).
- Partitions made of porous material with open pores.
- Partitions lined with porous material with open pores.
- Double partitions, decoupled or not (mass-spring-mass systems).
- Triple partitions, decoupled or not (mass-spring-mass-spring-mass systems).
- Quadruple partitions, decoupled or not.
- Heterogeneous partitions.

AcouS STING® :

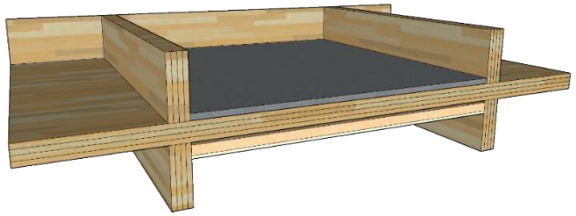
- Solid homogeneous floor slabs.
- Hollow-core slabs.
- Hard floor coverings:
  - Floating screeds,
  - Heated floors,
  - Floating parquet,
  - Tiles on mini screeds.
- Soft floor coverings:
  - Homogeneous,
  - With underlayer.
- Suspended ceilings:
  - Suspended plasterboard,
  - Ceiling panels,
  - False ceilings.

NEW + Rain noise level

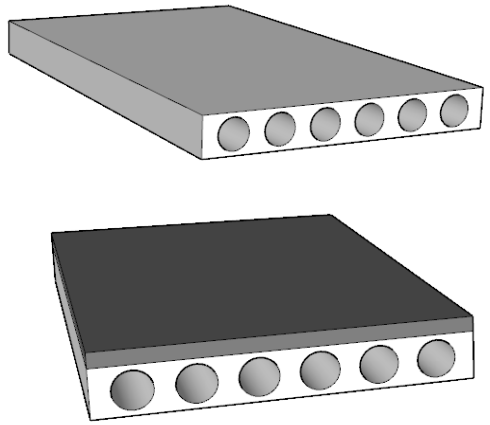




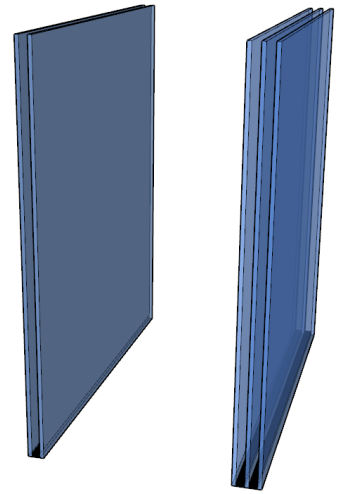
Double partitions decoupled



Floor slab CLT + Screed



Hollow-core slabs



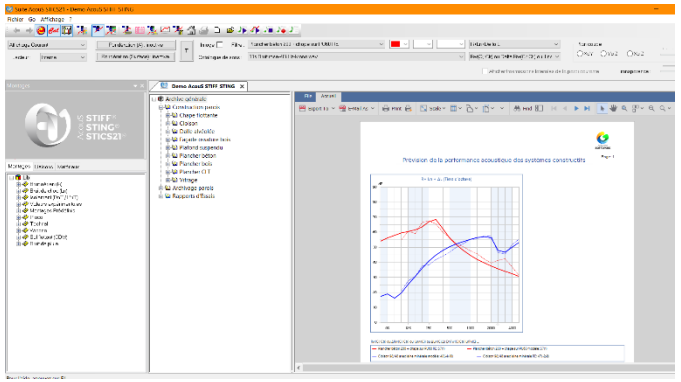
Glazing

AN OPTIMIZED INTERFACE

calcul	Caractéristiques physiques et dimensionnelles							
	BA13	BA13	Air	LV Roul...	BA13	BA13		
Longueur (m)	4	4	4	4	4	4		
Largeur (m)	2.5	2.5	2.5	2.5	2.5	2.5		
Epaisseur (mm)	12.50	12.50	3.00	45.00	12.50	12.50		
Masse volumique (kg/m3)	720	720		15	720	720		
Module young (N/m²)	2.2E+09	2.2E+09	1.44E+05	1E+05	2.2E+09	2.2E+09		
Facteur de perte	0.003	0.003			0.003	0.003		
Rés. à l'ecoulement d'air (Pa. s/m²)				5000.00				
Coeff. collage de poreux				1				
Réverbération Cavité	☐	☐	☒	☐	☐	☐	☐	☐
Coeff. de fibrage				1.94				
Masse surfacique (kg/m²)	9.00	9.00		0.68	9.00	9.00		
Fréq. critique (Hz)	2875	2875			2875	2875		
Raideur (N/m3)			4.8E+07	2.2E+06				
Type paroi	S:Simple	S:Simple	A:Lame d...	p:Poreux	S:Simple	S:Simple		
Nombre de plaque	1	1	1	1	1	1		

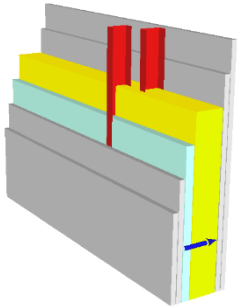
ACCESSIBILITY OF INPUT PARAMETERS

The software has been developed based on more than 20 years of experience and daily confrontation with real-world problems related to airborne noise and impact noise insulation.
This has made it possible to determine the essential and relevant characteristics, requiring only input parameters accessible to an acoustician in the field: dimensions, Young's modulus, density, loss factor, and airflow resistivity.



USER-FRIENDLY INTERFACE

The customizable interface, both on-screen and in print, makes adaptation easier according to user needs.
A database containing the most common materials, combined with a variety of basic assemblies, allows for the simulation of very simple to highly complex partitions.
The ability to create new materials and reuse previously created assemblies provides unmatched comfort and flexibility in usage.
Automated calculations and a focus on execution speed ensure high interactivity between characteristic modifications and the obtained results.



THE RESULTS

The results are presented in the form of customizable graphs and/or tables, displaying global values in Rw (C, C_tr), dB(A)/pink noise, dB(A)/road noise, and STC according to national and international standards (ISO 717-1, NFS 31-051, ASTM E413, ...), as well as by third-octave or octave bands.

		Résultats globaux ISO 717-1 - ISO 10140-5 en dB	
Intitulé	Indice/Style	Valeur W	(C ; CTr)
Cloison 98/48 avec laine minérale modèle	R	48	(-4; -10)
Cloison 98/48 avec laine minérale RE	R [RE]	47	(2; 8)

		Résultats globaux ISO 717-2 - ISO 10140-5 en dB		
Intitulé	Indice/Style	Valeur W	Ci / Ci,Δ	Ci / Ci,Δ 50-2500
Plancher béton 200 + chape sur PU60 RE	Ln [RE]	57	1	0
Plancher béton 200 + chape sur PU60 modèle	Ln	57	1	1

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