



**// ΔCOUS SCIFF®**  
***THE TOOL OF ACOUSTIC ENGINEERING***

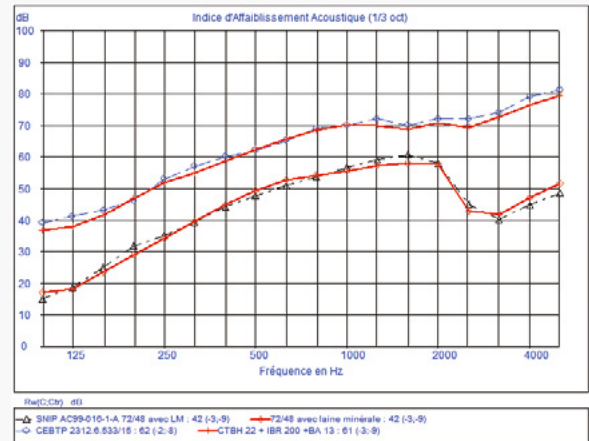
SOFTWARE OF THE FORECAST OF INDICATION OF ACOUSTIC DECLINE

# SOFTWARE OF THE FORECAST OF INDICATION OF ACOUSTIC DECLINE



The software AcouS STIFF® is a simple and adaptable tool. It's applications allow you :

- To determine the indication of acoustic decline of a simple or complex wall,
- To help in the development of new products,
- To optimize campaigns of measures in laboratory,
- To estimate the performance of doubling according to its support,
- To extrapolate the performances of conventional work,
- To forecast non conventional works and their optimization,
- To understand the acoustic behavior of a wall.



## A few of the main features and public concerned

### Robust models of calculations :

The basic theoretical models have been developed either within the framework of internal research or within the framework of research under contract. The results of these model calculations have been validated through hundreds of comparison tests with laboratory measurements. These models are in constant development.

### Compliance with standards :

Calculations of indications corresponding to the standards (ISO 717-1, NFS 31-051, ASTM E413,...)

### Publics concerned:

The training is aimed at all the engineers who have to conceive or to prescribe walls, in particular :

- the engineers in charge of studies who have to recommend constructive systems,
- technical salesmen in charge of the prescription of work derived from a system catalogue,
- the research and development engineers of a department in charge of the development of a wall, or a system of assembly or technology for manufacturing.

AcouS STIFF® is shared  
by hundreds of  
users worldwide



## Accessibility of the entry parameters

### The AcouS STIFF® software

has been developed thanks to the experience acquired during the course of twenty years of daily confrontation with concrete problems of aerial noise insulation. This development has provided us with the possibility of isolating the essential and relevant features, requiring only the entry parameters accessible to an acoustic engineer on the ground : dimensions, module of Young, density, factor of loss and resistivity to the air flow.

AcouS STIFF & STRIKE - [Cloisons 72-48pour plaquette.sia]

Fichier Go Fenêtre ?

Affichage N° 1

Filtre: SNIP AC99-01G-1-A 72/40 avec LM

Catologue de sons :

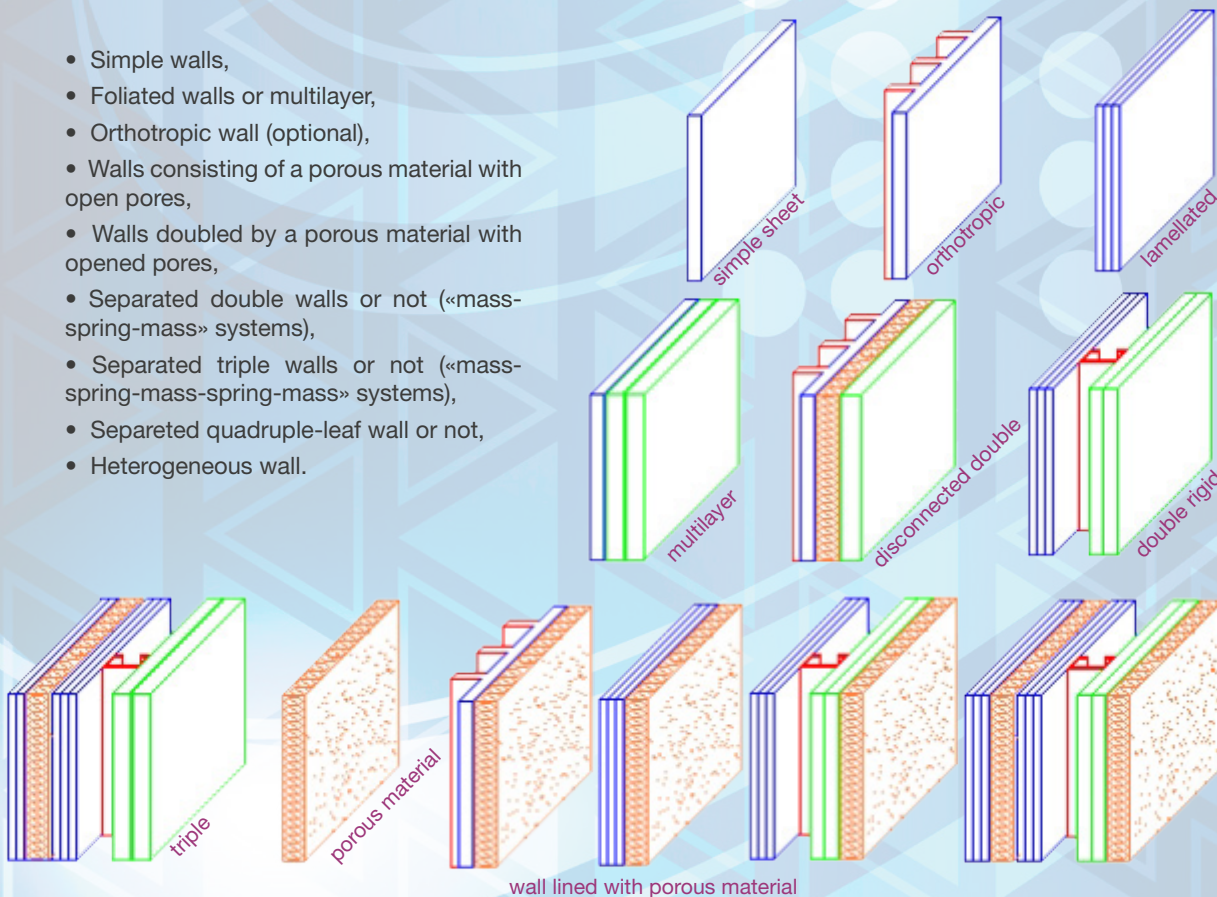
calcul		Caractéristiques physiq			
Simple Ossature@72/48 avec laine minérale@72/48 av					
	Placo BA13	Air compl...	LV Rouleau	Placo BA13	
Longueur (m)	4	4	4	46	
Largeur (m)	2.5	2.5	2.5	2.5	
Fpaisseur (mm)	12 50	3 00	45 00	12 50	
Masse volumique (kg/m3)	720		15	720	
Module young flexion (N/m²)	2E+009	1 44E+005	1E+005	2E+009	
Facteur de perte	0.003			0.003	
Rés. à l'écoulement d'air (Pa s/m²)			5000 00		
Coef. collage de poreux			1		
Réverbération Cavité	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coef. de fibrage			1.94		
Masse surfacique (kg/m²)	9 00		0 68	9 00	
Fréq. critique (Hz)	3015			3015	
Raideur (N/m3)		4.8E+007	2.2E+006		
Type paroi	S:Simple	A:Lame d...	p:Poreux	S:Simple	
Nombre de plaque	1	1	1	1	

Caractéristique Liaisons Rés. Octave Rés. 1/3 d'octave

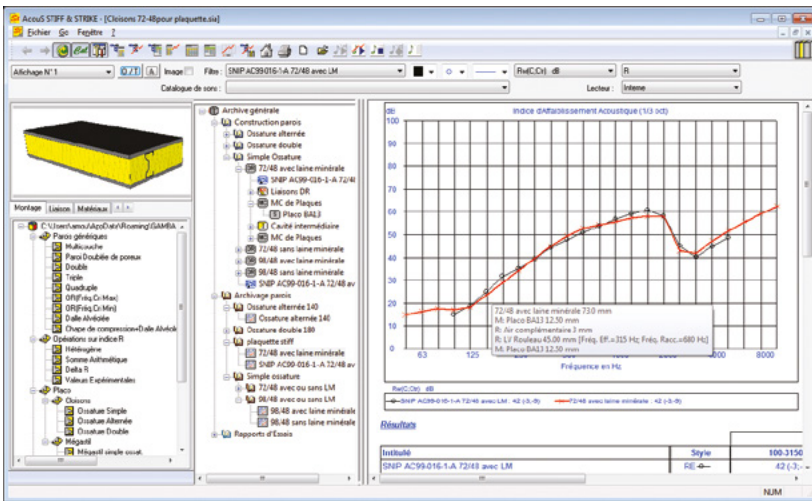
Pour l'aide, appuyez sur F1

## The assembly bench : the various types of simulated walls

- Simple walls,
- Foliated walls or multilayer,
- Orthotropic wall (optional),
- Walls consisting of a porous material with open pores,
- Walls doubled by a porous material with opened pores,
- Separated double walls or not («mass-spring-mass» systems),
- Separated triple walls or not («mass-spring-mass-spring-mass» systems),
- Separated quadruple-leaf wall or not,
- Heterogeneous wall.



## The user friendly interface



## THE USER FRIENDLY INTERFACE

is customizable on the screen and in printing which facilitates its adaptation according to your needs.

A database containing the most common materials coupled with a variety of basic assemblies allowing simulation from very simple walls to very complex walls.

The possibility of creating new materials and the re-use of the existing assemblies brings a comfort and a matchless flexibility of use.

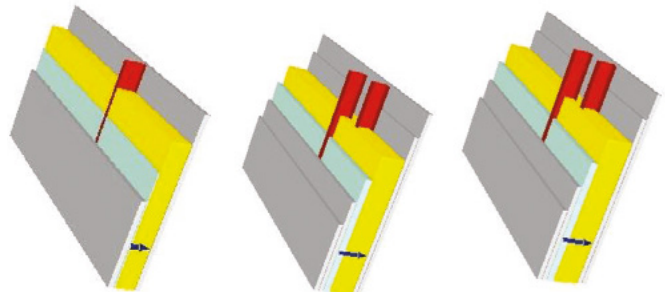
The automation of the calculations and their speed of execution allows major interactivity between the modifications of the features and the results obtained.

The assistance in the creation of walls allows for very fast handling.

## The results

### THE RESULTS

are presented in the form of graphs and/or customizable tables presenting the global values in  $R_w$  (C, Ctr), dB(A)/pink, dB(A)/STC according to national and international standards (ISO 717-1, NFS 31-051, ASTM E413, ...) as well as by thirds of an octave or by an octave...



Intitulé	Style	ISO 717 : $R_w$ (C;Ctr;C50-3150;Ctr50-3150;...) dB								
		100-3150 Hz	50-3150 Hz	50-5000 Hz	100-5000 Hz					
SNP AC99-016-1-A 72/48 avec LM	RE ←	42 (-3,-5)	42 (-4,-11)	42 (-3,-11)	42 (-2,-9)					
72/48 avec laine minérale	R →	42 (-3,-5)	42 (-4,-11)	42 (-3,-11)	42 (-2,-9)					
Résultats par bande d'octave (Fréquence centrale en Hz)										
Intitulé	Style	31.5	63	125	250	500	1000	2000	4000	8000
SNP AC99-016-1-A 72/48 avec LM	RE ←			17.80	34.28	46.74	55.80	49.26	43.06	
72/48 avec laine minérale	R →	12.51	15.00	18.67	32.15	47.70	55.45	47.24	45.02	58.07

#### Ouvrage : 72/48 avec laine minérale 73.0 mm [ DR ]

M: Placo BA13 12.50 mm  
R: Air complémentaire 3 mm  
R: L.V. Rouleau 45.00 mm [Fréq. Eff.=315 Hz; Fréq. Racc.=680 Hz]  
M: Placo BA13 12.50 mm

#### Liaisons DR : 72/48 avec laine minérale [ Simple Ossature ] 48.0 mm

Simple Ossature : Liaisons linéiques rigides (Entraxe : 0.60 m, Fact. désol.=20.00, %Solidar.=0.61%, Niveau désolid.=22 dB)

#### Fréquences significatives : 72/48 avec laine minérale

Fréquence de résonance : 109 Hz  
Fréquence de changement de pente : 813 Hz  
Fréquence critique : 3015 Hz



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