

INSUL Sound Insulation Prediction (v9.0.19)

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Authorised INSUL user: Roldan

Notes:

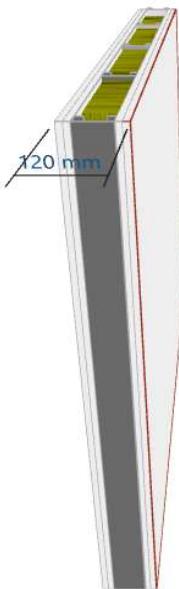
- Key No.

Job Name:

Job No.:

Date: 13/12/2019

File Name:



Acoustic prediction

R_w 51 dB

C -5 dB; Ctr -12 dB

$R_w + C$ 46 dB

$R_w + Ctr$ 39 dB

System description (from left to right side of graphic)

Panel 1 : 1 x 12.5 mm Knauf FireShield™ 12.5mm
+ 1 x 12.5 mm Knauf FireShield™ 12.5mm

Frame Steel Stud (25g) (70 mm x 38 mm)

Stud spacing 400 mm

Cavity Width 70 mm

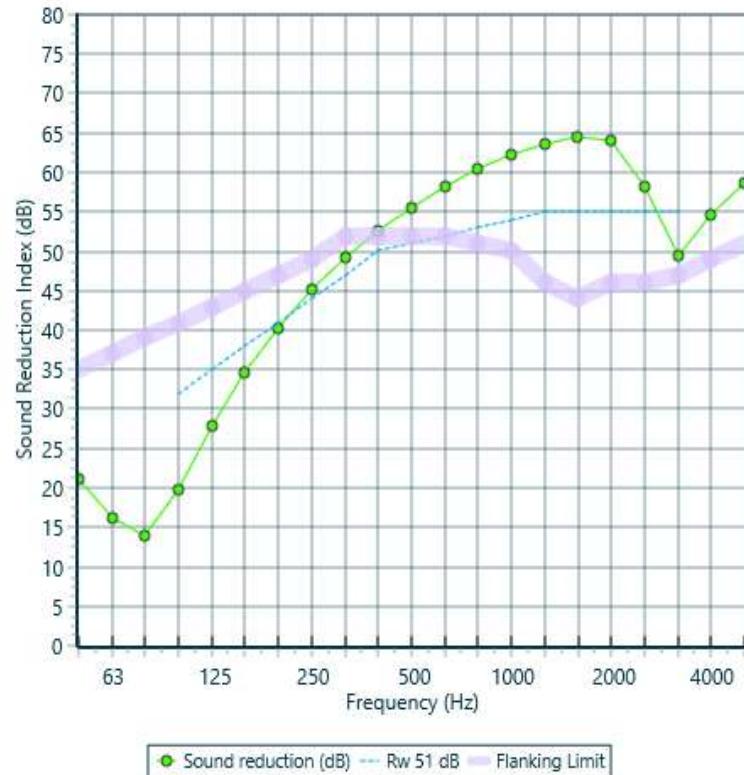
Infill 1 x Fibreglass (10kg/m³) Thickness 70 mm

Panel 2 : 1 x 12.5 mm Knauf FireShield™ 12.5mm
+ 1 x 12.5 mm Knauf FireShield™ 12.5mm

Partition surface mass = 40.7 kg/m²

Partition width = 120 mm

freq.(Hz)	R(dB)	Deviations
50	21	
63	16	
80	14	
100	20	-12
125	28	-7
160	35	-3
200	40	-1
250	45	0
315	49	0
400	53	0
500	55	0
630	58	0
800	60	0
1000	62	0
1250	64	0
1600	64	0
2000	64	0
2500	58	0
3150	50	-5
4000	55	
5000	59	
Sum		-28
Panel Size : 2,7 m x 4,0 m		
Mass-air-mass resonant frequency = : 63 Hz		



Disclaimer: This is an acoustic prediction and not a laboratory test result. Comparisons with test data show that INSUL predictions are generally within +/- 3 dB for simple constructions, however can be as high as +/- 5 dB for hybrid systems or triple panel constructions. Like any prediction tool, INSUL should not be regarded as a substitute for test data or an acoustic estimate from a suitably qualified Acoustic Engineer who may have a contrary opinion to the prediction shown. For this reason, the prediction stated in this letter should be used as a guide only and not form part of a Project specification or used for certification purposes.

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Glossary

dB	Decibel. The unit of sound level.
Frequency	The number of pressure fluctuation cycles per second of a sound wave. Measured in units of Hertz (Hz).
Octave band	Sound, which can occur over a range of frequencies, may be divided into octave bands for analysis. The audible frequency range is generally divided into 7 octave bands. The octave band frequencies are 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz and 4kHz.
Sound reduction (R)	The attenuation of sound pressure brought about by a building construction. Sound reduction is specified at each octave or one third octave frequency band.
Rw	Weighted Sound Reduction Index A single number rating of the sound insulation performance of a specific building element. Rw is measured in a laboratory. Rw is commonly used by manufacturers to describe the sound insulation performance of building elements such as plasterboard and concrete. (refer to ISO 717-1 Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation or regional equivalent)
C	C is a sound insulation adjustment, commonly used with Rw and DnT,w. C adjusts for sources of mid-high frequency noise sources generated by typical living activities such as talking, music, radio, TV and children playing.
Ctr	Ctr is a sound insulation adjustment, commonly used with Rw and DnT,w. Ctr adjusts for low frequency noise, like noise from trucks and subwoofers. Ctr values typically range from about -4 to about -12.