

# FIELD MEASUREMENTS OF IMPACT SOUND INSULATION OF FLOORS

Date of Test : Tuesday, 22 September 2020  
 Project No. : 4225  
 Testing Company : Koikas Acoustics  
 Checked by : Nick Koikas  
 Place of Test: Residential building in Macquarie Park  
 Client : Paxwood Pty Ltd (Clever Choice Design Floors)  
 Client Address : -

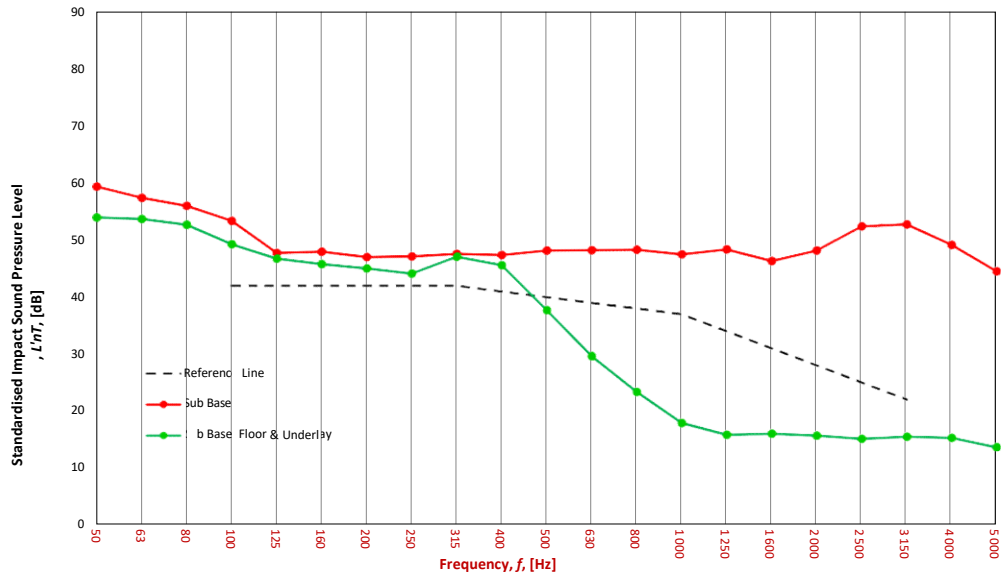
Description of Floor System	Name	Thickness (mm)	Density (SI)
Description of Floor System	Engineered Timber 14mm	14	--
	Clever Cork 3mm underlay	3	--
	Concrete	200	--

Room Dimensions  
 Width : 3.6 m  
 Length : 3.6 m  
 Area : 13 m<sup>2</sup>

Sample Dimensions  
 Width : 1 m  
 Length : 1 m  
 Area : 1 m<sup>2</sup>

Receiver Rm	Location	Width	Length	Area	Height	Volume	Room Surfaces		
							Walls	Floor	Ceiling
Unit directly below - living area	3.6	3.6	13	2.7	35	Plasterboard	Carpet	Plasterboard	

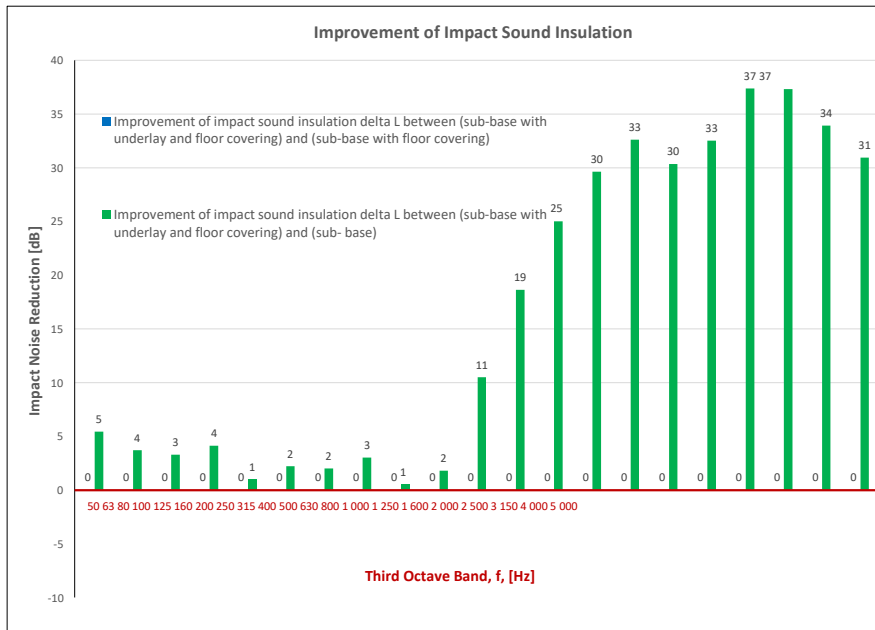
Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	59.4	N/A	54.0
63	57.5	N/A	53.7
80	56.0	N/A	52.7
100	53.4	N/A	49.3
125	47.8	N/A	46.8
160	48.0	N/A	45.8
200	47.0	N/A	45.0
250	47.1	N/A	44.1
315	47.6	N/A	47.1
400	47.4	N/A	45.6
500	48.2	N/A	37.7
630	48.3	N/A	29.6
800	48.3	N/A	23.3
1000	47.5	N/A	17.9
1250	48.4	N/A	15.8
1600	46.3	N/A	16.0
2000	48.2	N/A	15.7
2500	52.5	N/A	15.1
3150	52.8	N/A	15.5
4000	49.2	N/A	15.3
5000	44.5	N/A	13.6



Sub Base	
L'nT,w	56
Ci	-10
Ci(50-2500)	-6
Ci(63-2000)	-8
AAAC	2 Star
FIC	46

Sub Base & Floor	
L'nT,w	N/A
Ci	N/A
Ci(50-2500)	N/A
Ci(63-2000)	N/A
AAAC	N/A
FIC	N/A

Sub Base, Floor & Underlay	
L'nT,w	40
Ci	0
Ci(50-2500)	5
Ci(63-2000)	4
AAAC	6 Star
FIC	69



## Definitions of Noise Metrics

**FIC:**  
 Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m<sup>2</sup> as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

**L'nT,w:**  
 The Weighted Standardised Impact Sound Pressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAAC to determine their respective Star Rating.

**Ci:**  
 Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors Ci is positive because of the low resonant frequencies. Considers frequency range between 100 -and 2500 Hz.

**Ci(50-2500):**  
 Same as above, but for the frequency range 50 -2500 Hz.

**Ci(125-2000):**  
 Same as above, but for the frequency range 125 -2000 Hz.

AAAC Star R.	2	3	4	5	6
L'nT,w	65	55	50	45	40
FIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible