FIELD MEASUREMENTS OF IMPACT SOUND INSULATION OF FLOORS

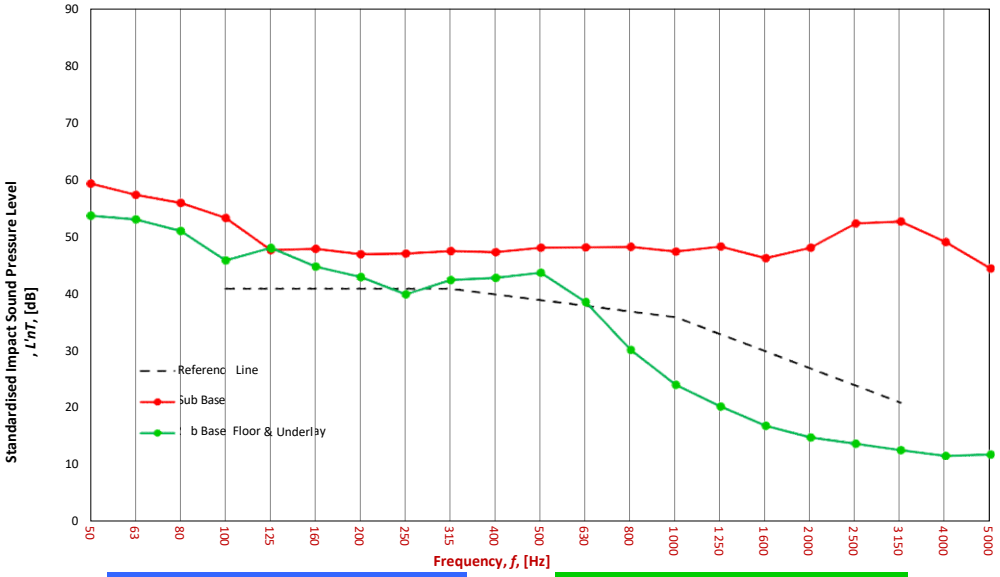
Date of Test :	Tuesday, 22 September 2020
Project No. :	4225
Testing Company :	Koikas Acoustics
Checked by :	Nick Koikas
Place of Test:	Residential building in Macquarie Park
Client	Paxwood Pty Ltd (Clever Choice Design Floors)
Client Address	-

	Name	Thickness (mm	Density (Sl)
Description of Floor System	Engineered Timber 14mm	14	--
	Clever Comfort 2mm underlay	2	--
	Concrete	200	--

Room Floor Dimensions	Width :	3.6	m
	Length :	3.6	m
	Area :	13	m^2
Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m^2

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

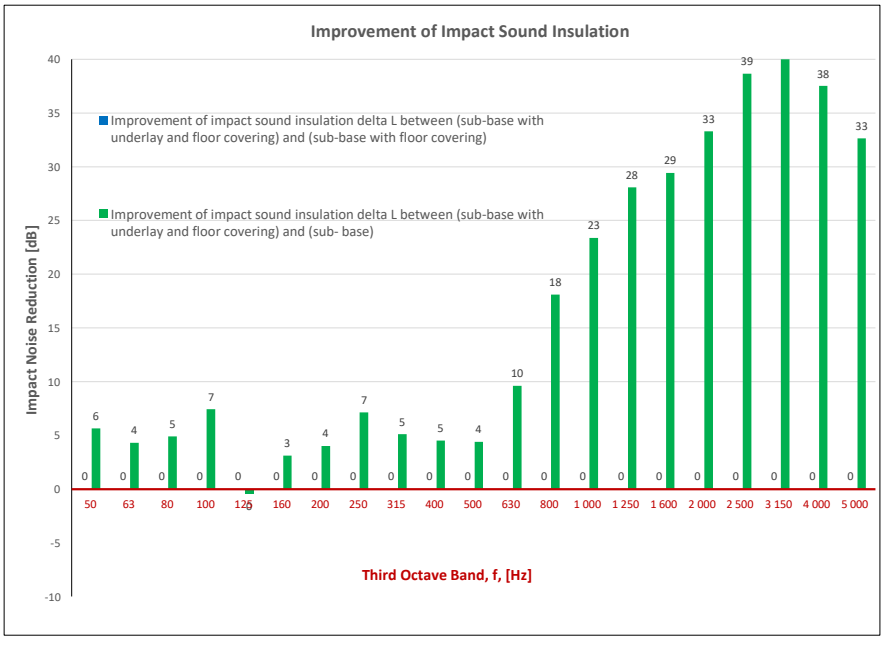
Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	59.4	N/A	53.8
63	57.5	N/A	53.1
80	56.0	N/A	51.1
100	53.4	N/A	46.0
125	47.8	N/A	48.2
160	48.0	N/A	44.9
200	47.0	N/A	43.0
250	47.1	N/A	40.0
315	47.6	N/A	42.5
400	47.4	N/A	42.9
500	48.2	N/A	43.8
630	48.3	N/A	38.6
800	48.3	N/A	30.3
1 000	47.5	N/A	24.1
1 250	48.4	N/A	20.3
1 600	46.3	N/A	16.9
2 000	48.2	N/A	14.9
2 500	52.5	N/A	13.8
3 150	52.8	N/A	12.7
4 000	49.2	N/A	11.7
5 000	44.5	N/A	11.9



Sub Base		
L'nT,w	56	AS ISO 717.2 - 2004
Ci	-10	AS ISO 717.2 - 2004
Ci(50-2500)	-6	AS ISO 717.2 - 2004
Ci(63-2000)	-8	AS ISO 717.2 - 2004
AAAC	2 Star	AAAC Guidleline
FIIC	46	ASTM E1007-14

Sub Base & Floor		
L'nT,w	N/A	AS ISO 717.2 - 2004
Ci	N/A	AS ISO 717.2 - 2004
Ci(50-2500)	N/A	AS ISO 717.2 - 2004
Ci(63-2000)	N/A	AS ISO 717.2 - 2004
AAAC	N/A	AAAC Guidleline
FIIC	N/A	ASTM E1007-14

Sub Base, Floor & Underlay		
L'nT,w	39	AS ISO 717.2 - 2004
Ci	0	AS ISO 717.2 - 2004
Ci(50-2500)	5	AS ISO 717.2 - 2004
Ci(63-2000)	4	AS ISO 717.2 - 2004
AAAC	6 Star	AAAC Guidleline
FIIC	70	ASTM E1007-14



Definitions of Noise Metrics

FIIC:
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^2 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
FIIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible