FIELD MEASUREMENTS OF IMPACT SOUND INSULATION OF FLOORS (TEST 05)

koikas acoustics PTY LTD
CONSULTANTS IN NOISE & VIBRATION

Date of Test :	Wednesday, 17 December 2025
Project No. :	2754
Testing Company :	Koikas Acoustics
Checked by :	Nick Koikas
Place of Test:	Residential apartement building in Wolli Creek NSW

	Name	Thickness (mm)	Density (Sl)
Description of Floor System	12 mm Hybrid Flooring	12	--
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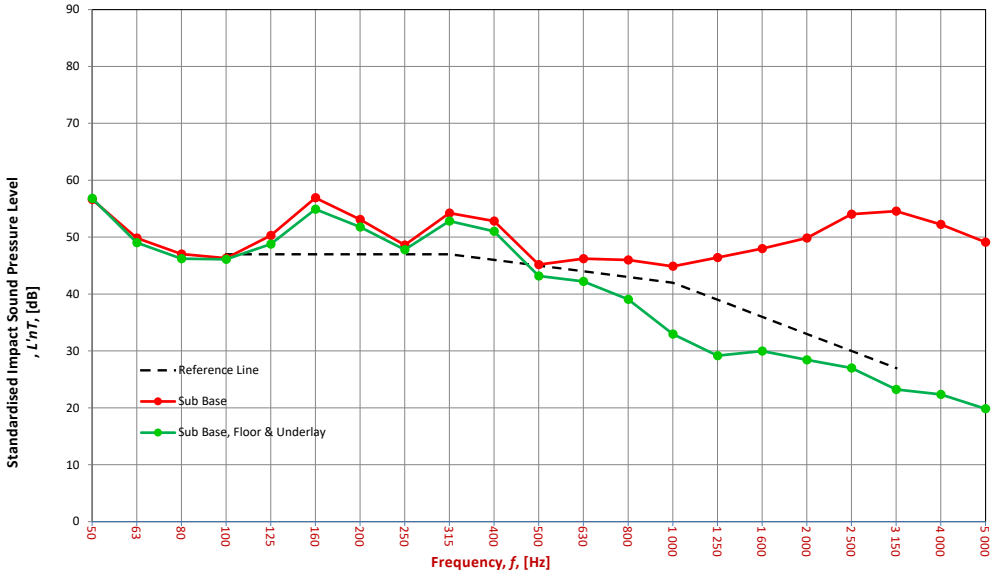
	200~220 mm reinforced concrete slab	200`220	--

Room Floor Dimensions	Width :	5	m
	Length :	6.7	m
	Area :	33.50	m^2
Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m^2

	Location	Width	Length	Area	Height	Volume
Receiver Rm	lower floor level bedroom	3	4	33.50	2.7	32.40

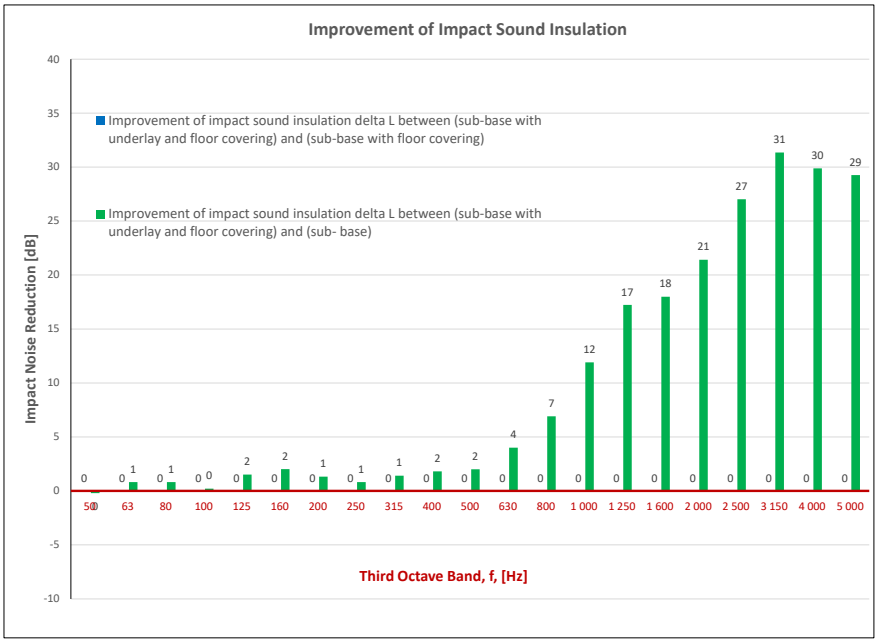
Room Surfaces		
Walls	Floor	Ceiling
Plasterboard	Carpet	Plasterboard

Frequency f Hz	L'nT (one-third octave) dB Sub Base		Sub Base Floor Underlay
50	56.6		56.8
63	49.8		49.0
80	47.0		46.2
100	46.3		46.1
125	50.3		48.8
160	56.9		54.9
200	53.1		51.8
250	48.6		47.8
315	54.2		52.8
400	52.8		51.0
500	45.2		43.2
630	46.2		42.2
800	46.0		39.1
1 000	44.9		33.0
1 250	46.4		29.2
1 600	48.0		30.0
2 000	49.8		28.4
2 500	54.0		27.0
3 150	54.6		23.2
4 000	52.2		22.4
5 000	49.1		19.8



Sub Base		
L'nT,w	58	AS ISO 717.2 - 2004
Ci	-10	AS ISO 717.2 - 2004
Ci(50-2500)	-9	AS ISO 717.2 - 2004
Ci(63-2000)	-10	AS ISO 717.2 - 2004
AAAC★	2 Star	AAAC Guidleline
FIIC	45	ASTM E1007-14

Sub Base, Floor & Underlay		
L'nT,w	45	AS ISO 717.2 - 2004
Ci	0	AS ISO 717.2 - 2004
Ci(50-2500)	2	AS ISO 717.2 - 2004
Ci(63-2000)	1	AS ISO 717.2 - 2004
AAAC★	5 Star	AAAC Guidleline
FIIC	64	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