

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



Date of Test : Friday, 9 November 2018
Project No. : 2754
Testing Company : Koikas Acoustics
Checked by : Nick Koikas
Place of Test: Residential flat building in Hurstville NSW
Client Wonderwood Floors
Client Address -

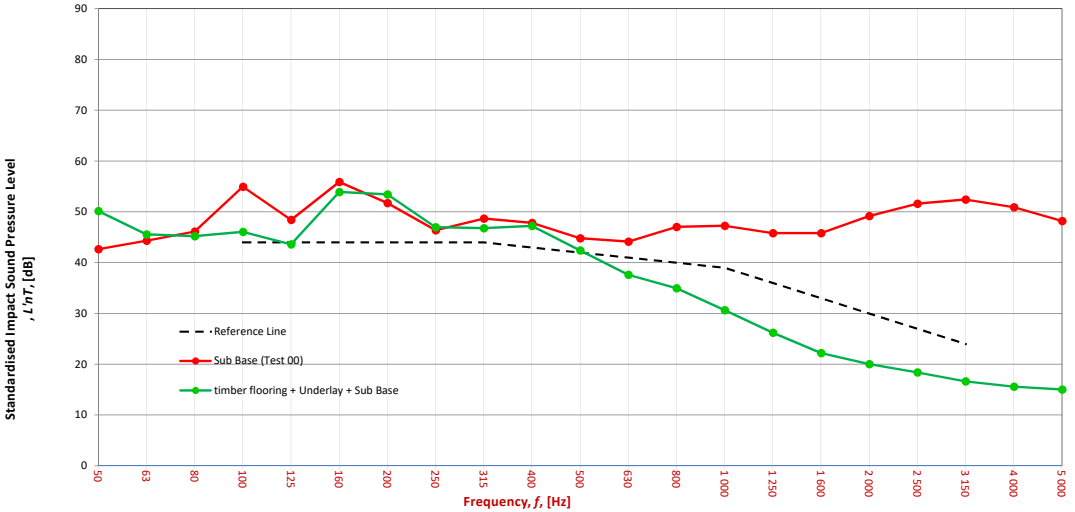
Description of Floor System	Name	Thickness (mm)	Density (SI)
	Wonderwood 15 mm Engineered Flooring	15	--
	Wonderwood Pro-Insul 2 mm Foam Underlay	2	--
	200 mm reinforced concrete slab	200	--
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling	80~120 + 13	--

Room Floor Dimensions	Width :	6	m
	Length :	4	m
	Area :	24	m²
Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m²

Receiver Rm	Location	Width	Length	Area	Height	Volume
	Unit 301 living	6	4	24	2.4	57.6

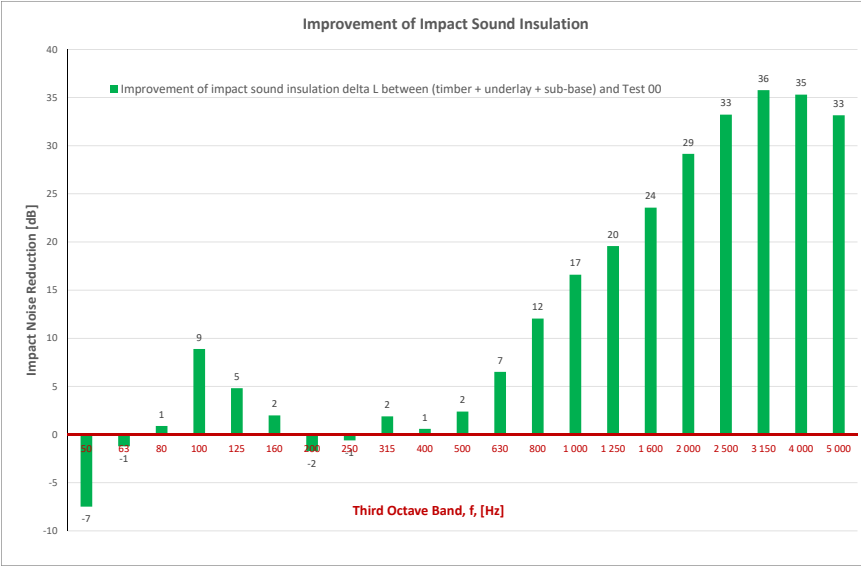
Room Surfaces		
Walls	Floor	Ceiling
Concrete/plasterboard	Carpet (covered with plastic sheets)	Plasterboard

Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	42.7		50.1
63	44.3		45.6
80	46.1		45.2
100	55.0		46.1
125	48.4		43.6
160	55.9		53.9
200	51.7		53.4
250	46.4		47.0
315	48.7		46.8
400	47.8		47.2
500	44.8		42.4
630	44.1		37.6
800	47.0		35.0
1 000	47.3		30.6
1 250	45.8		26.2
1 600	45.8		22.2
2 000	49.2		20.0
2 500	51.6		18.4
3 150	52.4		16.6
4 000	50.9		15.6
5 000	48.2		15.0



Sub Base (Test 00)			
L'nT,w	56	AS ISO 717.2 - 2004	
Ci	-9	AS ISO 717.2 - 2004	
Ci(50-2500)	-9	AS ISO 717.2 - 2004	
Ci(63-2000)	-9	AS ISO 717.2 - 2004	
AAAC ★	2 Star	AAAC Guideline	
FIC	44	ASTM E1007-14	

timber flooring + underlay + Sub Base (TEST 05)			
L'nT,w	42	AS ISO 717.2 - 2004	
Ci	2	AS ISO 717.2 - 2004	
Ci(50-2500)	2	AS ISO 717.2 - 2004	
Ci(63-2000)	2	AS ISO 717.2 - 2004	
AAAC ★	5 Star	AAAC Guideline	
FIC	63	ASTM E1007-14	



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 m² 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