



## TOPDECK ACOUSTIC CERTIFICATE

FLOOR IMPACT INSULATION MEASUREMENT  
Conducted by Koikas Acoustics P/L

### Avala Hybrid Plank with 1.5mm IEXP Underlay

Koikas Acoustics was engaged by Topdeck International to carry out floor impact insulation measurements on 6.5 mm Avala Hybrid Planks with 1.5mm IEXP underlay attached.

The measurements were carried out on top of a base floor system which consisted of:

- 200 mm thick concrete slab
- Approximately 80~120 mm thick suspended ceiling cavity
- 13 mm thick plasterboard ceiling

**The 1.5mm IEXP underlay attach with Avala Hybrid Planks have met both the BCA 2019 criterion ( $L'nTw \leq 62$ ) and the AAAC Star rating of 5 for impact noise insulation.**

#### Measured Floor Impact Insulation

Floor System	Measured Ln,Tw	NCC/BCA Requirement	AAAC Star Rating
Base Floor	58	62	
6.5 mm Avala Luxury Hybrid*	43	62	5 Star

Acoustic rating will vary depending on the testing environment/conditions including, materials/structures of the existing ceiling/floor system, room volume, internal layout and workmanship. Even with the same testing environmental, acoustic ratings can vary from room to room and so building to building as no two buildings are identical.

\*\* This document is to be read in conjunction with testing report prepared by Koikas Acoustics ( Ref :3618C20190725 and Dated 25 July 2019)

FIELD MEASUREMENTS OF IMPACT SOUND INSULATION OF FLOORS



Date of Test :	Thursday, 31 January 2019
Project No. :	3618
Testing Company :	Koikas Acoustics
Checked by :	Nick Koikas
Place of Test:	Residential units in Hurstville
Client	Topdeck Flooring Pty Ltd
Client Address	-

Description of Floor System	Name	Thickness (mm)	Density (SI)
	6.5mm Avala Hybrid Planks	--	--
	-	--	--
	200 mm reinforced concrete slab	200	--
	80~120 mm suspended ceiling cavity + 13 mm plasterboard ceiling	80~120 + 13	--

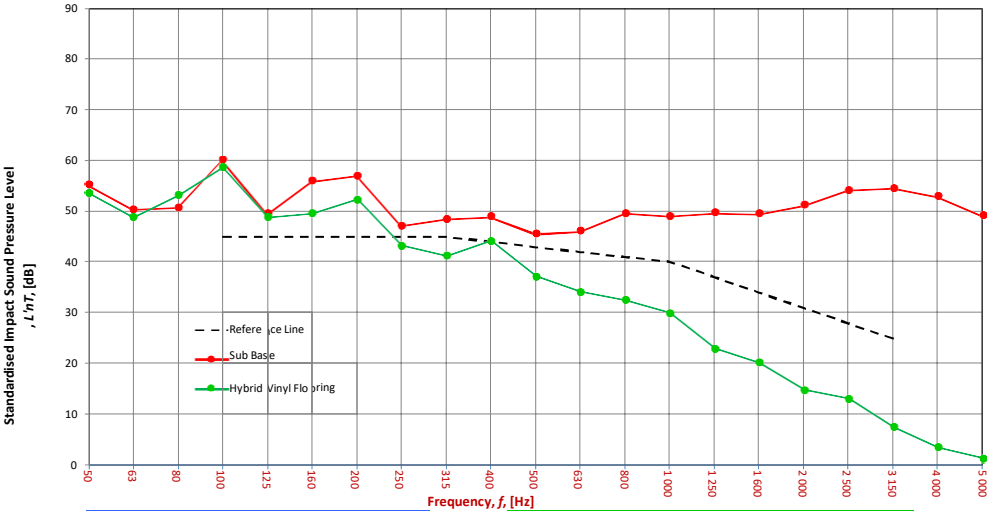
Room Floor Dimensions	Width :	6	m
	Length :	4	m
	Area :	24	m²

Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m²

Receiver Rm	Unit 201 living area	6	4	24	2.4	57.6
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Plasterboard	Concrete	plasterboard	

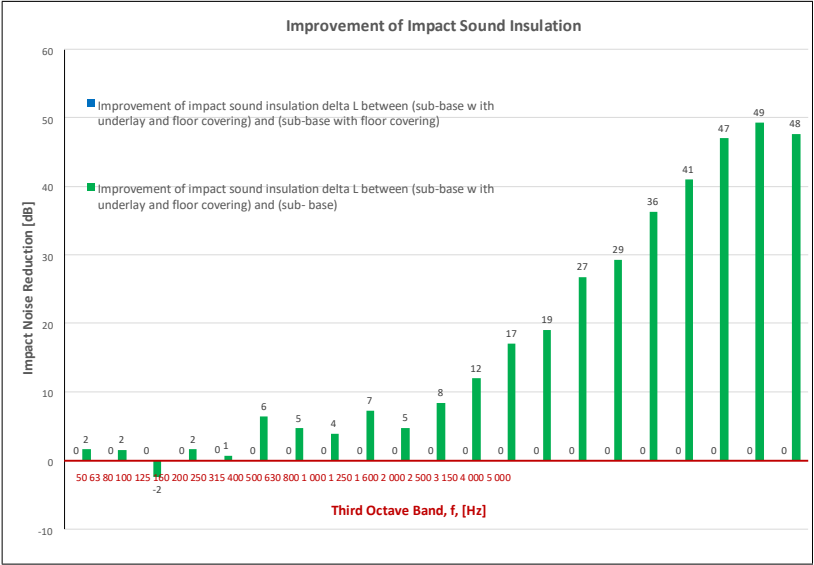
Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Hybrid Vinyl Flooring
50	55.1	#NUM!	53.4
63	50.2	#NUM!	48.6
80	50.6	#NUM!	53.0
100	60.0	#NUM!	58.4
125	49.4	#NUM!	48.6
160	55.8	#NUM!	49.4
200	56.9	#NUM!	52.1
250	47.0	#NUM!	43.1
315	48.4	#NUM!	41.1
400	48.8	#NUM!	44.0
500	45.5	#NUM!	37.0
630	46.0	#NUM!	34.0
800	49.5	#NUM!	32.3
1000	48.9	#NUM!	29.8
1250	49.6	#NUM!	22.8
1600	49.4	#NUM!	20.0
2000	51.1	#NUM!	14.7
2500	54.0	#NUM!	13.0
3150	54.5	#NUM!	7.4
4000	52.8	#NUM!	3.5
5000	49.0	#NUM!	1.3



Sub Base	
L'nT,w	58
Ci	-8
Ci(50-2500)	-8
Ci(63-2000)	-8
AAAC	2 Star AAAC Guideline
FIC	42
	ASTM E1007-14

Sub Base & Floor	
L'nT,w	#NUM!
Ci	#NUM!
Ci(50-2500)	#NUM!
Ci(63-2000)	#NUM!
AAAC	#NUM!
FIC	#NUM!
	ASTM E1007-14

Hybrid Vinyl Flooring	
L'nT,w	43
Ci	2
Ci(50-2500)	4
Ci(63-2000)	3
AAAC	5 Star
FIC	58
	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

**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):**

**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	Not mally Inaudible