HERRING STORER ACOUSTICS

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14 November 2019

Woodpecker Flooring
25 Sundercombe Street
Osborne Park WA 6017

Attention: Jie Shi
Address: jie@woodpeckerflooring.com.au

Dear Jie,

KASTLE APARTMENTS – 37 SAYER STREET, MIDLAND
IMPACT ISOLATION SAMPLE TESTING

As requested, the Kastle Apartments development located at 37 Sayer Street, Midland were attended on 13th November 2019.

The purpose of the visit was to measure the level of impact isolation provided by a sample of the Woodpecker Flooring Vtech Hybrid flooring.

CRITERIA

Satisfactory levels of impact sound isolation in accordance with various documents are referenced below:

BCA

Part F5 of the BCA lists the following verification for impact sound levels generated through floors:

> *"b) Impact: a weighted standardised impact sound pressure level with spectrum adaption term ($L_{nT,w}$) not more than 62 when determined under AS/ISO 717-2".*

Additional to the above, the Australian Acoustical Society (AAS) and Association of Australian Acoustical Consultants (AAAC), of which Herring Storer Acoustics is a member firm, recommend that a $L_{nT,w}$ of 55 provides a satisfactory level of amenity.

Association of Australian Acoustical Consultants – Acoustical Star Ratings for Apartments & Townhouses

This document was developed to rank the acoustical quality of apartments.

The star rating system rates apartments on a scale from 2 – 6, 2 being below average, 6 being extremely good performance.

The AAAC Star Rating system lists the following levels for impact isolation of floors.

TABLE 1 – AAAC STAR RATING FLOOR IMPACT ISOLATION CRITERIA

		2 Star	3 Star	4 Star	5 Star	6 Star
Between Tenancies	$L_{nT,w} \leq$	65	55	50	45	40

MEASUREMENT METHOD

Impact isolation testing was carried out generally in accordance with ISO 717.2-2004 *"Acoustics – Rating of Sound Insulation in Buildings and of Building Elements, Part 2: Impact Sound Insulation"*.

In general terms, the test involves placing a tapping machine on the floor sample to be tested and measure the resultant sound pressure level in the apartment directly below.

The measured noise level is adjusted for background noise levels and standardised to a reverberation time of 0.5 seconds with a single figure resultant reported.

The tapping machine used is a Norsonic NOR277 tapping machine with noise levels and reverberation time measured with a Larson Davis 831 Sound Level Meter.

All instruments used are NATA calibrated and a calibration certificate is available upon request.

The floor sample was laid in the living room of Apartment 15 and noise levels measured in the living room of Apartment 5 below.

A single flooring type was tested during the visit, being the Woodpecker Flooring Vtech-Hybrid, which includes underlay, applied directly to bare concrete.

IMPACT ISOLATION RESULTS

The measured levels of impact sound isolation is summarised in Table 2 below.

The impact isolation of the bare concrete was measured for information purposes, with the resultant $L_{nT,w}$ rating measured at 64 dB.

TABLE 2 – IMPACT ISOLATION RESULTS

Impact Isolation Build Up	$L_{nT,w}$, dB
Woodpecker Flooring Vtech-Hybrid	45

ASSESSMENT

An assessment of the measured level of impact isolation provided by the sample is presented in Table 3 below.

TABLE 3 – IMPACT ISOLATION RESULTS ASSESSMENT

Flooring Type	$L_{nT,w}$, dB	Meets BCA Requirements (<= 62 dB)	Meets Recommended AAAC Rating of (<= 55 dB)	AAAC Star Rating (1 – 5)
Woodpecker Flooring Vtech-Hybrid	45	✓	✓	5

CONCLUSION

The measured impact isolation provided by the measured flooring sample is sufficient to meet the BCA requirements and the recommended level of impact isolation of not more than 55 dB.

The level of isolation was measured at a 5 star rating in accordance with the AAAC star rating guide.

We trust the above meets your requirements on this matter. Should you have any queries, please do not hesitate to contact this office.

Yours faithfully,
For **HERRING STORER ACOUSTICS**

Geoffrey Harris