

27th June 2019

Reference: 2019195 L01B Lotus Tower, 36-48 Lambert Street, Kangaroo Point FIT

National Flooring Distributors
11 Josephine Street
Loganholme QLD 4129

RE: Lotus Tower, 36 – 48 Lambert Street, Kangaroo Point – Acoustic floor testing

We present the results of the acoustic testing conducted at the Lotus Tower 36 – 47 Lambert Street, Kangaroo Point on Friday the 14th of June 2019. The aim of the test was to determine the acoustic impact rating of the floor samples when measured in bedroom below.

Floor Construction

The nominal construction for the tested floor systems was as follows:

Sample A:

- Generic Vinyl (4.5mm thick)
- Concrete slab (210mm thick)
- Suspended 13mm plasterboard ceiling (150mm deep cavity)

Sample B:

- Soundless Vinyl (4.7mm thick)
- Concrete slab (210mm thick)
- Suspended 13mm plasterboard ceiling (150mm deep cavity)

Sample C:

- Revolution Vinyl (3mm thick)
- Concrete slab (210mm thick)
- Suspended 13mm plasterboard ceiling (150mm deep cavity)

Test Results

The measurement results are as follows:

Table 1: Floor impact test results

Test No.	Floor	Description of floor system	Source room (upstairs)	Receive room (downstairs)	$L_{nT,w}$
1	6	Generic Vinyl (4.5mm thick) on a Concrete slab (thickness 210mm) with a cavity (150mm) And a suspended 13mm plasterboard ceiling	63 Kitchen/living/dining	53 Kitchen/living/dining	53
2	6	Soundless Vinyl (4.7mm thick) on a Concrete slab (thickness 210mm) with a cavity (150mm) And a suspended 13mm plasterboard ceiling	63 Kitchen/living/dining	53 Kitchen/living/dining	46

Test No.	Floor	Description of floor system	Source room (upstairs)	Receive room (downstairs)	$L_{nT,w}$
3	6	Revolution Vinyl (3mm thick) on a Concrete slab (thickness 210mm) with a cavity (150mm) And a suspended 13mm plasterboard ceiling	63 Kitchen/living/dining	53 Kitchen/living/dining	57

Equipment

The equipment used comprised the following: -

- ISO tapping machine, Norsonic Type NOR-277.
- Norsonic Nor-140 Sound Level Meter.

Methods

The testing and analysis procedure has been carried out in general accordance with the following Standards:

- AS ISO 140 – 7: 2006 - "Acoustics – measurement of sound insulation in buildings and of building elements – Part 7: Field measurement of impact sound insulation of floors."
- AS ISO 717 – 2: 2004 – "Acoustics – rating of sound insulation in buildings and of building elements – Part 2 Impact sound insulation"
- ASTM 1007-16 "Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission through Floor-Ceiling Assemblies and Associate Support Structures."

Criteria

The specific acoustic requirements are contained within the National Construction Code (NCC) 2016 are as follows:

"b) Impact: a weighted standardised impact sound pressure level with ($L_{nT,w}$) not more than 62 when determined under AS ISO 717.2."

It should be noted that for $L_{nT,w}$ rating system, lower values are better than higher values.

Discussion

All three floor samples tested in Unit 63 to unit 53 at the Lotus Tower satisfy the National Construction Code (NCC) 2016 requirement of $L_{nT,w} \leq 62$.

Note that performance may vary once the samples are glued down, compliance is still predicted with the NCC 2016.

Should you have any queries please do not hesitate to contact AcousticWorks.

Report Prepared By

A handwritten signature in black ink, appearing to read 'Owen Busaidi', written in a cursive style.

Owen Busaidi B.Eng.

Acoustic Consultant

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APPENDIX

Description of Terms

dB: Decibel

IIC: Impact Isolation Class (measured in the laboratory)

FIIC: Field Impact Isolation Class (measured on-site)

$L_{n,w}$: Weighted normalized impact sound pressure level (measured in the laboratory)

$L'_{nT,w}$: Weighted standardized impact sound pressure level (measured on-site)

AS: Australian Standard

ISO: International Standards Organization

C_i : Spectrum Adaptation Term for Impact Sound