Floor Impact Sound Transmission Assessment

Acoustic Assessment & Advice for By-Laws

51-53 The Crescent, Manly, NSW

Client:

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3 June 2022

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GLOSSARY

NOISE

Noise is produced through rapid variations in air pressure at audible frequencies (20 Hz – 20 kHz). Most noise sources vary with time. The measurement of a variable noise source requires the ability to describe the sound over a particular duration of time. A series of industry standard statistical descriptors have been developed to describe variable noise, as outlined in **Section 2** below.

NOISE DESCRIPTORS

L_{eq} – The sound pressure level averaged over the measurement period. It can be considered as the equivalent continuous steady-state sound pressure level, which would have the same total acoustic energy as the real fluctuating noise over the same time period.

dB – Decibels. The fundamental unit of sound, a Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. Probably the most common usage of the Decibel in reference to sound loudness is dB sound pressure level (SPL), referenced to the nominal threshold of human hearing. For sound in air and other gases, dB(SPL) is relative to 20 micropascals (μPa) = 2×10^{-5} Pa, the quietest sound a human can hear.

L_{nTw} – Weighted standardised impact sound pressure level. A single number measure of impact sound performance of a building element. The lower the number, the better the impact isolation performance.

A-WEIGHTING

"A-weighting" refers to a prescribed amplitude versus frequency curve used to "weight" noise measurements in order to represent the frequency response of the human ear. Simply, the human ear is less sensitive to noise at some frequencies and more sensitive to noise at other frequencies. A-weighting is a method to present a measurement or calculation result with a number representing how humans subjectively hear different frequencies at different levels.

1 INTRODUCTION

1.1 SUMMARY

Acoustic Dynamics is engaged by the **Owners Corporation** (SP3840) to conduct representative floor impact sound transmission tests to determine the acoustic performance of various partition floor/ceiling systems within the residential building located at 51-53 The Crescent, Manly, NSW, and to provide recommendations for development of a new building standard relating to the installation of hard floor coverings within the building.

Note should be made that amendments to floor coverings within the subject residential building are unlikely to affect the airborne sound transmission performance of the relevant floor/ceiling partition. Accordingly, this report does not include an assessment of airborne sound transmission performance of any proposed new floor coverings, as this is not considered necessary.

Further to our site visit, inspection and sound transmission measurements, we provide the following information, assessment and advice regarding floor sound transmission performance.

2 RELEVANT ACOUSTIC CRITERIA AND STANDARDS

Acoustic Dynamics has conducted a review of the local council, state government and federal legislation that is applicable to noise emission assessment from the subject site. The relevant sections of the legislation are presented below. The most stringent criteria which have been used in this assessment of the subject development are summarised below.

2.1 COUNCIL CRITERIA

Acoustic Dynamics has conducted a review of the Northern Beaches Council planning and development control instruments including the following documents:

- *Manly Local Environmental Plan (LEP) 2013*; and
- *Manly Development Control Plan (DCP) 2013*.

Acoustic Dynamics' review of the *Manly LEP 2013* did not yield specific acoustic criteria or information relating to the installation of hard floors within residential buildings.

Acoustic Dynamics' review of the *Manly DCP 2013* did not yield specific acoustic criteria or information relating to the installation of hard floors within residential buildings.

2.2 STRATA SCHEMES MANAGEMENT ACT (SSMA) 1996

The *Strata Schemes Management Act 1996* provides a legal framework for regulating noise between apartments within a strata scheme. Within *"Schedule 1 – By-laws"*, the following provisions relating to noise are made:

"1 Noise

An owner or occupier of a lot must not create any noise on the parcel likely to interfere with the peaceful enjoyment of the owner or occupier of another lot or of any person lawfully using common property.

Note: This by-law was previously by-law 12 in Schedule 1 to the Strata Schemes (Freehold Development) Act 1973 and by-law 13 in Schedule 3 to the Strata Schemes (Leasehold Development) Act 1986."

And

*"**14 Floor coverings***

(1) An owner of a lot must ensure that all floor space within the lot is covered or otherwise treated to an extent sufficient to prevent the transmission from the floor space of noise likely to disturb the peaceful enjoyment of the owner or occupier of another lot.

(2) This by-law does not apply to floor space comprising a kitchen, laundry, lavatory or bathroom.

***Note**: This by-law was previously by-law 25 in Schedule 1 to the Strata Schemes (Freehold Development) Act 1973 and by-law 26 in Schedule 3 to the Strata Schemes (Leasehold Development) Act 1986."*

In consideration of requirements of *The Strata Schemes Management Act 1996*, Acoustic Dynamics advises that the 3 star AAAC rating of $\boldsymbol{L_{nT,w} \leq 55}$ for floor sound transmission performance requirements is generally considered to be representative of a minimum acceptable standard, and is likely to prevent the transmission of *"**noise likely to disturb the peaceful enjoyment of the owner or occupier of another lot**"*. As such the following criterion is adopted for the purpose of assessment of *"Peaceful Enjoyment"*:

Impact Isolation Performance of Installed Floor: $\boldsymbol{L_{nT,w} \leq 55}$

Note should be made Acoustic Dynamics' opinion regarding an adequate impact sound transmission performance is consistent with other AAAC member firms as agreed and documented within the minutes of the AAAC mid-year meeting of 2005.

2.3 STRATA SCHEMES MANAGEMENT ACT (SSMA) 2015

The *Strata Schemes Management Act 2015* provides a legal framework for regulating noise between apartments within a strata scheme. Within *"Section 134, 152 & 153"*, the following provisions relating to noise are made:

"By-laws that apply to strata schemes

134 By-laws that apply to strata schemes

(1) New strata schemes The by-laws in force for a strata scheme that came into existence after the commencement of this section are the by-laws adopted by or lodged with the strata plan registered by the Registrar-General for the strata scheme, as changed in accordance with this Act.

(2) Strata schemes 1997 to commencement of section The by-laws in force for a strata scheme that came into existence after the commencement of the Strata Schemes Management Act 1996 and before the commencement of this section are the by-laws adopted by or lodged with the strata plan registered by the Registrar-General for the strata scheme, including any changes to the by-laws made in accordance with that Act or in accordance with this Act.

***Note:** The Strata Schemes Management Act 1996 commenced on 1 July 1997.*

(3) Strata schemes before 1996 The by-laws in force for a strata scheme that was in existence before the commencement of the Strata Schemes Management Act 1996 are the by-laws set out in the regulations for the purposes of this section, including any changes to the by-laws made in accordance with a previous law or in accordance with this Act."

"Owner must notify owners corporation of alteration to lot structure

152 Owner must notify owners corporation of alteration to lot structure

The owner of a lot in a strata scheme must not alter the structure of a lot without giving to the owners corporation, not later than 14 days before commencement of the alteration, a written notice describing the proposed alteration.

Note : The right of an owner to alter the structure of a lot is also subject to other provisions of this Act relating to approvals that are required to carry out work affecting the common property."

"Owners, occupiers and other persons not to create nuisance

153 Owners, occupiers and other persons not to create nuisance

(1) An owner, mortgagee or covenant chargee in possession, tenant or occupier of a lot in a strata scheme must not:

(a) use or enjoy the lot, or permit the lot to be used or enjoyed, in a manner or for a purpose that causes a nuisance or hazard to the occupier of any other lot (whether that person is an owner or not), or

(b) use or enjoy the common property in a manner or for a purpose that interferes unreasonably with the use or enjoyment of the common property by the occupier of any other lot (whether that person is an owner or not) or by any other person entitled to the use and enjoyment of the common property, or

(c) use or enjoy the common property in a manner or for a purpose that interferes unreasonably with the use or enjoyment of any other lot by the occupier of the lot (whether that person is an owner or not) or by any other person entitled to the use and enjoyment of the lot.

Note : *Depending on the circumstances in which it occurs, the penetration of smoke from smoking into a lot or common property may cause a nuisance or hazard and may interfere unreasonably with the use or enjoyment of the common property or another lot.*

(2) This section does not operate to prevent the due exercise of rights conferred on a developer by the operation of section 82 of the Strata Schemes Development Act 2015.

Note: *Division 1 of Part 6 contains provisions about the circumstances in which owners of lots may carry out work that affects common property."*

In consideration of requirements of the *Strata Schemes Management Act (SSMA) 2015*, Acoustic Dynamics advises that the 3 star AAAC rating of $\boldsymbol{L_{nT,w} \leq 55}$ for floor sound transmission performance requirements is generally considered to be representative of a minimum acceptable standard to prevent the transmission of noise, which ***"interferes unreasonably with the use or enjoyment of any other lot "***. As such the following criterion is adopted for the purpose of assessment of acoustic impact against the requirements of the SSMA 2015:

Impact Isolation Performance of Installed Floor: $\boldsymbol{L_{nT,w} \leq 55}$

Note should be made Acoustic Dynamics' opinion regarding an adequate impact sound transmission performance is consistent with other AAAC member firms as agreed and documented within the minutes of the AAAC mid-year meeting of 2005.

2.4 THE AAAC STAR RATINGS FOR APARTMENTS AND TOWNHOUSES

Members of the Association of Australian Acoustical Consultants (AAAC) developed the Star Rating system to rank the acoustical quality of multi-unit residential developments and to quantify and communicate the opinions of AAAC members on the design of residential buildings.

The relevant information relating to inter-tenancy sound transmission performance of partition floors and star ratings for floors is reproduced below:

Table 2.1 AAAC Star Ratings for Acoustical Performance for Inter-tenancy Activities

3. Inter-tenancy Activities	***2 Star***	***3 Star***	***4 Star***	***5 Star***	***6 Star***
(a) Airborne Sound Insulation for walls and floors between separate tenancies $D_{nT,w} + C_{tr} \geq$	*35*	*40*	*45*	*50*	*55*
(c) Impact Isolation of Floors between tenancies $L_{nT,w} \leq$	*65*	*55*	*50*	*45*	*40*

*"**Intertenancy Activities** generate a wide range of different noises, which can be broadly classified into airborne and structure borne noise.*

***Floor in sound transmission is measured in accordance with ISO 140-7 and rated in accordance with ISO 717.2**"*

Based on our experience with floor sound transmission issues within residential apartment buildings, Acoustic Dynamics advises that:

1. The 2 star AAAC rating for floors is generally considered to be below an acceptable standard of sound transmission performance, and may not be sufficient to prevent the transmission of "*noise likely to disturb the **peaceful enjoyment** of the owner or occupier of another lot*";

NB: The minimum impact sound transmission performance requirements of the Building Code of Australia are set to a standard that would only achieve a 2 Star AAAC rating;

2. The 3 star AAAC rating for floors sound transmission performance requirements are generally considered to be representative of a minimum acceptable standard, and is likely to prevent the transmission of "*noise likely to disturb the **peaceful enjoyment** of the owner or occupier of another lot*";

3. The 4 star AAAC rating for floors is generally considered to be a "reasonable" or "good" standard of sound transmission performance, and is likely to be considered acceptable by the majority of occupants;

4. The 5 star AAAC rating for floors is generally considered to be a "very good" standard of sound transmission performance; and

5. The 6 star AAAC rating for floors is generally considered to provide an "excellent" standard of sound transmission performance, which is likely to be sufficient to prevent the transmission of general residential noise at audible levels into an apartment below.

2.5 BUILDING CODE OF AUSTRALIA

Further to the requirements of the *Strata Schemes Management Act 2015* and the Strata By-laws, the installed floor covering must comply with the **minimum** acoustic requirements of the *Building Code of Australia (BCA) 2019*. We provide the following information, addressing the acoustic requirements of the BCA. The relevant acoustic provisions of the current BCA are summarised below:

"F5.4 Sound insulation rating of floors

(a) A floor in a Class 2 or 3 building must have an $R_w + C_{tr}$ (airborne) not less than 50 and an $L_{n,w}$ (impact) not more than 62 if it separates –

(i) sole-occupancy units; or

(ii) a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification."

"VERIFICATION METHODS

FV5.1

*Compliance with **FP5.1** and **FP5.3** to avoid the transmission of airborne and impact generated sound through floors is verified when it is measured in-situ that the separating floor has-*

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

3 MEASUREMENT STANDARDS

All measurements were conducted in general accordance with Australian Standard 1055.1-1997, *"Acoustics - Description and Measurement of Environmental Noise Part 1: General Procedures"*. Acoustic Dynamics' sound measurements were carried out using precision sound level meters conforming to the requirements of IEC 61672-2002 *"Electroacoustics: Sound Level Meters – Part 1: Specifications"*. The survey instrumentation used during the survey is set out in **Table 3.1**.

Table 3.1 Noise Survey Instrumentation

Type	Serial Number	Instrument Description
2260	2413547	Brüel & Kjaer Modular Precision Sound Level Meter
4189	2607949	Brüel & Kjaer 12.5 mm Prepolarised Condenser Microphone
4231	1730737	Brüel & Kjaer Acoustic Calibrator
EM50	TM.14174	Sources Line EM50 Tapping Machine

The reference sound pressure level was checked prior to and after the measurements using the acoustic calibrator and remained within acceptable limits.

Measurements and assessments of sound transmission through the floor/ceiling systems were carried out in accordance with the following standards:

- *AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation*"; and
- *AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors*".

Acoustic Dynamics advises that Part 2 of Australian Standard AS/ISO 717 and Part 7 of Australian Standard AS/ISO 140 prescribe a methodology for the determination of sound insulation (airborne and impact), for various descriptors, but do not recommend values for building elements.

4 SOUND TRANSMISSION MEASUREMENT RESULTS AND ASSESSMENT

Impact sound transmission tests were conducted with the listed equipment, and in accordance with the relevant measurement standards summarised in **Section 3**.

Acoustic Dynamics conducted representative floor/ceiling impact sound transmission tests on Thursday 12 May 2022 through the following floor/ceiling partitions:

- The living room of Unit 24 above the living room of Unit 21;
- The living room of Unit 23 above the living room of Unit 20; and
- The living room of Unit 14a above the living room of Unit 10.

Acoustic Dynamics advises that the floor/ceiling partition construction systems tested were as follows:

Floor System 1

- Bare Slab; to
- Ceiling Below

Sample Floor System 2

Flooring

- 14mm Engineered Timber; on
- 4mm Acoustica Angelstep 630; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 3

Flooring

- 14mm Engineered Timber; adhered to
- 12mm Plywood; on
- 8mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 4

Flooring

- 14mm Engineered Timber; adhered to
- 12mm Plywood; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 5

Flooring

- 14mm Engineered Timber; adhered to
- 12mm Plywood; on
- 8mm Regupol Sonus Curve; on
- 19mm Yellowtongue; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 6

Flooring

- 8mm Laminated Boards; adhered to
- 12mm Plywood; on
- 4mm Acoustica Angelstep 630; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 7

Flooring

- 8mm Laminated Boards; adhered to
- 12mm Plywood; on
- 8mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 8

Flooring

- 8mm Laminated Boards; adhered to
- 12mm Plywood; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 9

Flooring

- 8mm Laminated Boards; adhered to
- 12mm Plywood; on
- 8mm Regupol Sonus Curve; on
- 19mm Yellowtongue; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 10

Flooring

- 7.5mm Iconic Hybrid Plank; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 11

Flooring

- 7.5mm Iconic Hybrid Plank; on
- 19mm Yellowtongue; on
- 4mm Acoustica Angelstep 630; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 12

Flooring

- 7.5mm Iconic Hybrid Plank; on
- 19mm Yellowtongue; on
- 8mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 13

Flooring

- 7.5mm Iconic Hybrid Plank; on
- 19mm Yellowtongue; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 14

Flooring

- 8mm Ceramic Tiles; adhered to
- 2x6mm FC; on
- 8mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 15

Flooring

- 8mm Ceramic Tiles; adhered to
- 2x6mm FC; on
- 4mm Acoustica Angelstep 630; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 16

Flooring

- 8mm Ceramic Tiles; adhered to
- 2x6mm FC; on
- 4.5mm Regupol Sonus Multi; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 17

Flooring

- 8mm Ceramic Tiles; adhered to
- 2x6mm FC; on
- 9mm Regupol Sonus Multi; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Sample Floor System 18

Flooring

- 8mm Ceramic Tiles; adhered to
- 2x6mm FC; on
- 8mm Regupol Sonus Curve; on
- 19mm Yellowtongue; on
- 17mm Regupol Sonus Curve; loose-laid on

Substratum and Ceiling Below

- As per Floor System 1

Table 4.1 Sample Floor/Ceiling Sound Transmission Test Results & Comparison

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
S: Unit 24 Living Room R: Unit 21 Living Room				
T001	Bare Slab	63	N/A	N/A
T002	14mm Engineered Timber; on 4mm Acoustica Angelstep 630	53	3-Star	Yes
T003	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	52	3-Star	Yes
T004	14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	50	4-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T005	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	47	4-Star	Yes
T006	8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630	53	3-Star	Yes
T007	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	52	3-Star	Yes
T008	8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	50	4-Star	Yes
T009	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	47	4-Star	Yes
T010	7.5mm Iconic Hybrid Plank	49	4-Star	Yes
T011	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630	50	4-Star	Yes
T012	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve	49	4-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T013	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	46	4-Star	Yes
T014	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve	48	4-Star	Yes
T015	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630	50	4-Star	Yes
T016	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi	53	3-Star	Yes
T017	8mm Ceramic Tiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve	45	5-Star	Yes
T018	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	42	5-Star	Yes
S: Unit 23 Living Room R: Unit 20 Living Room				
T001	Bare Slab	65	N/A	N/A
T002	14mm Engineered Timber; on 4mm Acoustica Angelstep 630	54	3-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T003	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	53	3-Star	Yes
T004	14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	52	3-Star	Yes
T005	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	48	4-Star	Yes
T006	8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630	54	3-Star	Yes
T007	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	54	3-Star	Yes
T008	8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	52	3-Star	Yes
T009	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	48	4-Star	Yes
T010	7.5mm Iconic Hybrid Plank	51	3-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T011	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630	53	3-Star	Yes
T012	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve	52	3-Star	Yes
T013	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	49	4-Star	Yes
T014	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve	50	4-Star	Yes
T015	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630	52	3-Star	Yes
T016	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi	54	3-Star	Yes
T017	8mm Ceramic Tiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve	47	4-Star	Yes
T018	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	44	5-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
S: Unit 14a Living Room R: Unit 10 Living Room				
T001	Bare Slab	63	N/A	N/A
T002	14mm Engineered Timber; on 4mm Acoustica Angelstep 630	52	3-Star	Yes
T003	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	52	3-Star	Yes
T004	14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	50	4-Star	Yes
T005	14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	47	4-Star	Yes
T006	8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630	52	3-Star	Yes
T007	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve	51	3-Star	Yes
T008	8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve	49	4-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T009	8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	46	4-Star	Yes
T010	7.5mm Iconic Hybrid Plank	47	4-Star	Yes
T011	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630	49	4-Star	Yes
T012	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve	48	4-Star	Yes
T013	7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	47	4-Star	Yes
T014	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve	48	4-Star	Yes
T015	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630	50	4-Star	Yes
T016	8mm Ceramic Tiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi	53	3-Star	Yes

Test No.	Floor System Tested	Measured Impact Sound Transmission $L'_{nT,w}$ [1]	AAAC Star Rating	Complies with BCA?
T017	8mm Ceramic Tiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve	46	4-Star	Yes
T018	8mm Ceramic Tiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve	44	5-Star	Yes

Note: 1) Note is made that lower numbers represent better performance for the impact sound transmission descriptor $L'_{nT,w}$.

5 DISCUSSION

Based on the test results presented within **Section 4** above, we advise of the following:

1. Acoustic Dynamics advises that the tested floor systems used in our assessment incorporate various high-quality impact isolation underlay products. Acoustic Dynamics advises the tested products are generally considered to be the best performing products available on the market;

2. The impact sound transmission performance of the various sample hard floor systems tested achieved compliance with the acoustic performance requirements of the BCA. Further, we advise that the **best impact sound transmission performance levels** achieved within the subject apartments were:

    a. Engineered Timber Floor System
        i. $L'_{nT,w}$ = 47 (4 Star AAAC Rating) – Sample Floor System T005 (Unit 24).
        ii. $L'_{nT,w}$ = 48 (4 Star AAAC Rating) – Sample Floor System T005 (Unit 23).
        iii. $L'_{nT,w}$ = 47 (4 Star AAAC Rating) – Sample Floor System T005 (Unit 14a).

    b. Laminate Floor System
        i. $L'_{nT,w}$ = 47 (4 Star AAAC Rating) – Sample Floor System T009 (Unit 24).
        ii. $L'_{nT,w}$ = 48 (4 Star AAAC Rating) – Sample Floor System T009 (Unit 23).
        iii. $L'_{nT,w}$ = 46 (4 Star AAAC Rating) – Sample Floor System T009 (Unit 14a).

    c. Hybrid Floor System
        i. $L'_{nT,w}$ = 46 (4 Star AAAC Rating) – Sample Floor System T013 (Unit 24).
        ii. $L'_{nT,w}$ = 49 (4 Star AAAC Rating) – Sample Floor System T013 (Unit 23).
        iii. $L'_{nT,w}$ = 47 (4 Star AAAC Rating) – Sample Floor System T013 (Unit 14a).

d. Tiled Floor System
   i. $L'_{nT,w}$ = 42 (5 Star AAAC Rating) – Sample Floor System T018 (Unit 24).
   ii. $L'_{nT,w}$ = 44 (5 Star AAAC Rating) – Sample Floor System T018 (Unit 23).
   iii. $L'_{nT,w}$ = 44 (5 Star AAAC Rating) – Sample Floor System T018 (Unit 14a).

NB: Note is made that the above performances are generally based on double-layered and glued insulation systems for hard floors that may not be economically or physically viable.

3. Acoustic Dynamics notes that a **3 to 6 point margin of safety** should be included as the tested systems were floating (loose laid) and typically glued and installed systems will achieve acoustic performances between 3 and 6 points less (inferior), however note should be made that some systems can be loose laid;

4. The installation of carpeted flooring in residential units within the building is likely to achieve a 6-Star AAAC Rating for impact sound transmission performance, however the variance throughout the building may lead to marginal differences in some apartments;

5. Note should be made that the best impact sound transmission performance levels achieved by the various hard floor system samples tested are significantly inferior to the performance achieved by carpet flooring. As such, should carpet flooring be replaced with hard floors in any areas of the subject building, a reduction in the impact sound transmission performance of a floor/ceiling partition will likely result;

6. The acoustic testing is generally indicative that the acoustic (impact) performance of the existing building (as constructed) is poor. There are many factors likely to contribute to this, including the age and construction of the building, the lack of suspended ceilings and ceiling cavity insulation and the floor/ceiling slab thickness; and

7. Accordingly, should the Owners Corporation wish to create a By-law enabling hard flooring to be installed, it follows that the resulting acoustic (impact) performance will be somewhat limited.

6 RECOMMENDATIONS

Further to above, Acoustic Dynamics provides the following recommendations for the consideration of the Owners Corporation.

6.1 HARD FLOOR BUILDING STANDARD RECOMMENDATIONS

Acoustic Dynamics understands that the Owners Corporation is seeking to develop a new building standard (By-law) relating to the minimum impact sound transmission performance required for the installation of any new hard floors.

Note should be made that the appropriate selection of the By-law in relation to the installation of hard flooring will likely reduce issues for both owners and the Owners Corporation into the future, and hence also reduce potential litigation and ongoing costs.

Note should be made that the most appropriate impact sound transmission performance descriptor to be used for rating the impact sound transmission performance of installed floors within a residential apartment building is the "Weighted Standardised Impact Sound Pressure Level" or $L'_{nT,w}$.

Based on the results of our acoustic testing, and given the variations in the acoustic performance within the building, the best impact sound transmission performance which is likely to be both economically or practically feasible for the installation of hard floors is **$L'_{nT,w} \leq 53$**.

Option 1 – Readily Achievable (Recommended)

Should the Owners Corporation seek to create a building standard relating to the installation of hard floor coverings that will ensure a **reasonable** impact sound transmission performance for the installation of hard floors, and enable owners to install reasonably economic and physically feasible hard floors within their apartment, we recommend wording of the building standard as follows:

"Hard Surface Floor Coverings

1) *Where an owner of a lot proposes to install hard surface floor coverings, the owner must ensure that all hard surface floor coverings are designed and installed to satisfy a minimum impact sound insulation performance of a Weighted Standardised Impact Sound Pressure Level of not more than 53 (i.e. $L'_{nT,w} \leq 53$) (plus an allowance of 2 points tolerance at the testing stage).*

***NB**: It is recommended that an acoustic consultant be engaged prior to the installation of any hard flooring to avoid risk of non-compliance.*

2) *After completion of the installation, the Owner must provide certification by a suitably qualified Acoustical Consultant that, the installation has achieved a minimum impact sound insulation performance of a Weighted Standardised Impact Sound Pressure Level of not more than 53 (i.e. $L'_{nT,w} \leq 53$) (plus an allowance of 2 points tolerance at the testing stage).*

***Definitions**:*

In this building standard:

1) *"Hard surface floor coverings" means any flooring material that is not carpet."*

Option 2 - Stringent & More Difficult to Achieve (Not recommended)

Should the Owners Corporation seek to create a building standard relating to the installation of hard floor coverings that will ensure the **best feasible** impact sound transmission performance for the installation of hard floors, and enable owners to install hard floors within their apartment without significantly altering the acoustic amenity for adjacent receivers, we recommend wording of the building standard as follows:

"Hard Surface Floor Coverings

1) *Where an owner of a lot proposes to install hard surface floor coverings, the owner must ensure that all hard surface floor coverings are designed and installed to satisfy a minimum impact sound insulation performance of a Weighted Standardised Impact Sound Pressure Level of not more than 50 (i.e. $L'_{nT,w} \leq 50$) (plus an allowance of 2 points tolerance at the testing stage).*

***NB**: It is recommended that an acoustic consultant be engaged prior to the installation of any hard flooring to avoid risk of non-compliance.*

2) *After completion of the installation, the Owner must provide certification by a suitably qualified Acoustical Consultant that, the installation has achieved a minimum impact sound insulation performance of a Weighted Standardised Impact Sound Pressure Level of not more than 50 (i.e. $L'_{nT,w} \leq 50$) (plus an allowance of 2 points tolerance at the testing stage).*

***Definitions**:*

In this building standard:

1) *"Hard surface floor coverings" means any flooring material that is not carpet."*

6.2 CARPETED FLOORS

Acoustic Dynamics understands where carpet floors are proposed to be replaced with new carpet floors, we advise significant or discernible variations in the impact sound transmission performance of the subject floor/ceiling partitions will be unlikely, if the new carpet floors are installed in accordance with the following recommendations:

Recommended Carpeted Floor System

Flooring

- Selected Carpeting; to
- Minimum "Gold" Quality Carpet Underlay; to

Substratum and Ceiling Below

7 CONCLUSION

Acoustic Dynamics has conducted representative floor/ceiling impact sound transmission tests to determine the acoustic performance of various hard floor systems, within the residential building located at 51-53 The Crescent, Manly, NSW.

Test results are presented within **Section 4** of this document, with test certificates attached as **Appendix A**. A discussion of the measurement results is also presented within **Section 5**. Recommendations for the development of a new building standard relating to the installation of hard floor coverings within the subject building are provided in **Section 6**.

We trust the above information meets with your immediate requirements and expectations. Please do not hesitate to contact us (02 9908 1270) if you require more information or clarification.

Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

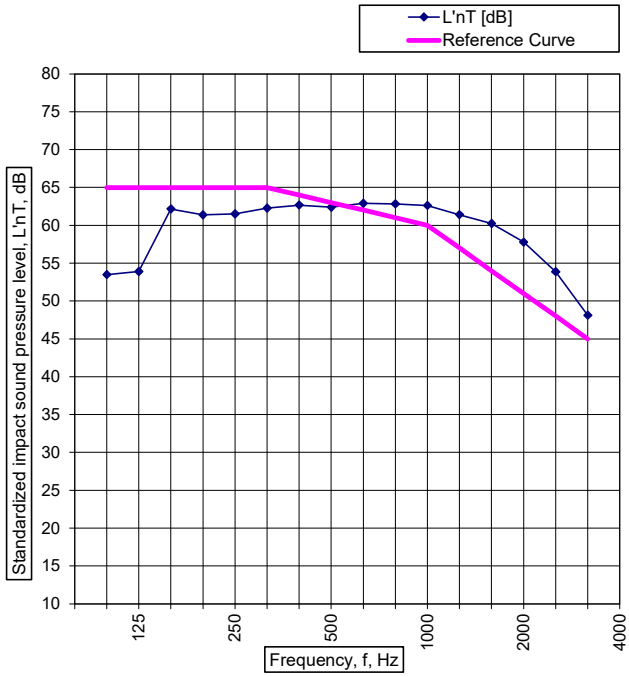
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
Bare Slab; to Ceiling Below

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.7	31.3	1.1	48.5
63	49.0	46.4	0.6	46.8
80	56.4	35.8	0.7	55.2
100	55.2	30.2	0.7	53.5
125	55.6	28.4	0.7	53.9
160	63.5	25.4	0.7	62.2
200	63.3	25.0	0.8	61.4
250	62.9	26.9	0.7	61.5
315	63.6	22.0	0.7	62.3
400	64.2	22.9	0.7	62.7
500	63.9	20.3	0.7	62.4
630	64.3	22.3	0.7	62.9
800	63.9	20.8	0.6	62.8
1000	63.9	18.0	0.7	62.6
1250	62.8	18.5	0.7	61.4
1600	61.7	18.7	0.7	60.2
2000	59.3	22.4	0.7	57.8
2500	55.2	19.9	0.7	53.9
3150	49.5	17.1	0.7	48.1
4000	46.4	17.2	0.7	45.0
5000	45.1	13.6	0.7	43.9



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **63** **(-5) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T001** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

Signed: Signed:

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

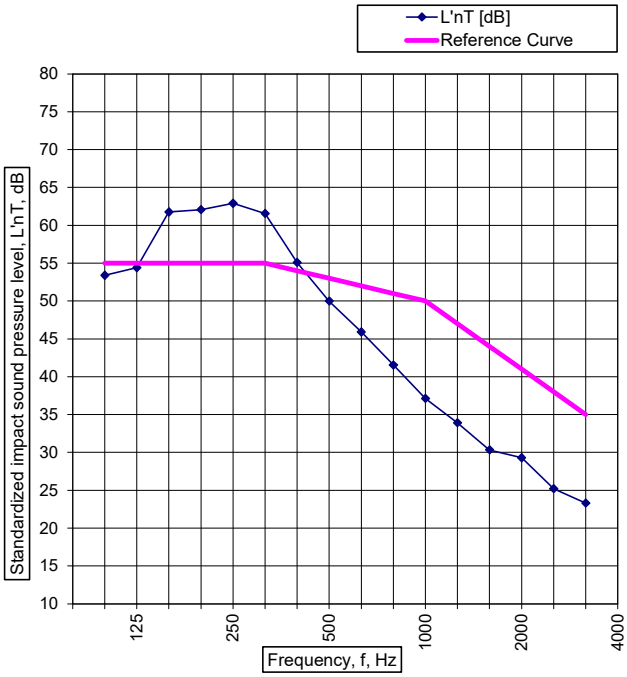
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
14mm Engineered Timber; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	52.1	31.3	1.1	48.9
63	49.7	46.4	0.6	47.5
80	55.0	35.8	0.7	53.8
100	55.1	30.2	0.7	53.4
125	56.1	28.4	0.7	54.4
160	63.1	25.4	0.7	61.8
200	64.0	25.0	0.8	62.1
250	64.3	26.9	0.7	62.9
315	62.9	22.0	0.7	61.6
400	56.6	22.9	0.7	55.1
500	51.5	20.3	0.7	50.0
630	47.3	22.3	0.7	45.9
800	42.6	20.8	0.6	41.5
1000	38.4	18.0	0.7	37.1
1250	35.3	18.5	0.7	33.9
1600	31.8	18.7	0.7	30.3
2000	31.4	22.4	0.7	29.3
2500	27.4	19.9	0.7	25.2
3150	25.4	17.1	0.7	23.3
4000	25.0	17.2	0.7	22.8
5000	23.1	13.6	0.7	21.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T002** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

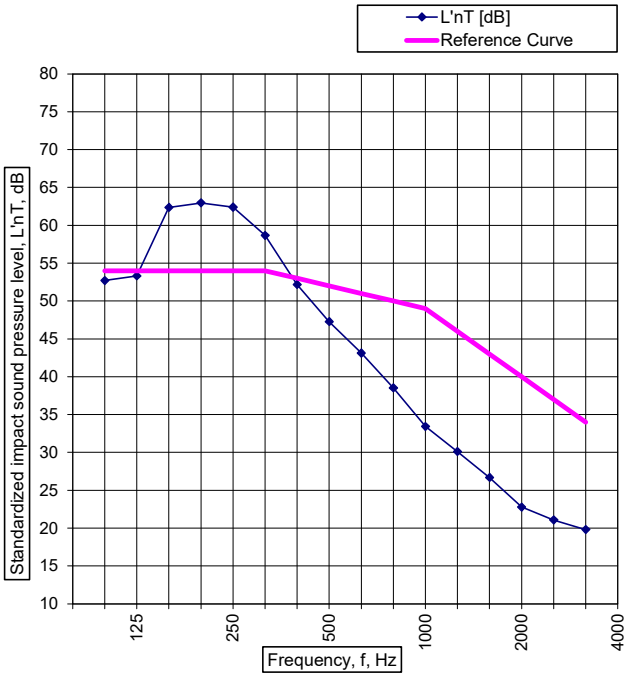
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	47.3	31.3	1.1	44.1
63	48.5	46.4	0.6	46.3
80	53.5	35.8	0.7	52.3
100	54.4	30.2	0.7	52.7
125	55.0	28.4	0.7	53.3
160	63.7	25.4	0.7	62.4
200	64.9	25.0	0.8	63.0
250	63.8	26.9	0.7	62.4
315	60.0	22.0	0.7	58.7
400	53.7	22.9	0.7	52.2
500	48.8	20.3	0.7	47.3
630	44.5	22.3	0.7	43.1
800	39.6	20.8	0.6	38.5
1000	34.7	18.0	0.7	33.4
1250	31.5	18.5	0.7	30.1
1600	28.6	18.7	0.7	26.7
2000	25.6	22.4	0.7	22.8
2500	23.7	19.9	0.7	21.1
3150	22.5	17.1	0.7	19.8
4000	23.3	17.2	0.7	20.7
5000	21.1	13.6	0.7	19.0



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T003** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

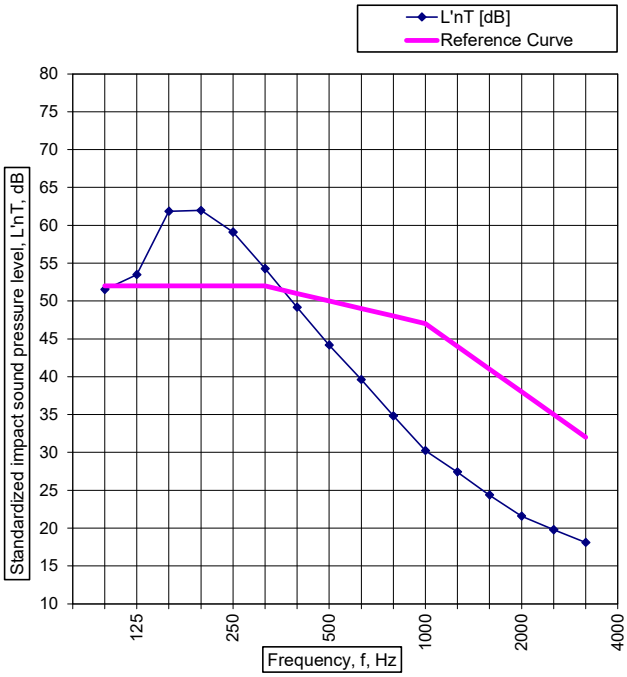
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	44.6	31.3	1.1	41.4
63	45.4	46.4	0.6	43.2
80	52.6	35.8	0.7	51.4
100	53.2	30.2	0.7	51.5
125	55.2	28.4	0.7	53.5
160	63.2	25.4	0.7	61.9
200	63.9	25.0	0.8	62.0
250	60.5	26.9	0.7	59.1
315	55.6	22.0	0.7	54.3
400	50.7	22.9	0.7	49.2
500	45.7	20.3	0.7	44.2
630	41.0	22.3	0.7	39.6
800	35.9	20.8	0.6	34.8
1000	31.5	18.0	0.7	30.2
1250	28.8	18.5	0.7	27.4
1600	26.6	18.7	0.7	24.4
2000	24.4	22.4	0.7	21.6
2500	22.4	19.9	0.7	19.8
3150	20.8	17.1	0.7	18.1
4000	19.9	17.2	0.7	17.2
5000	19.2	13.6	0.7	16.7



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50 (2) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T004** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

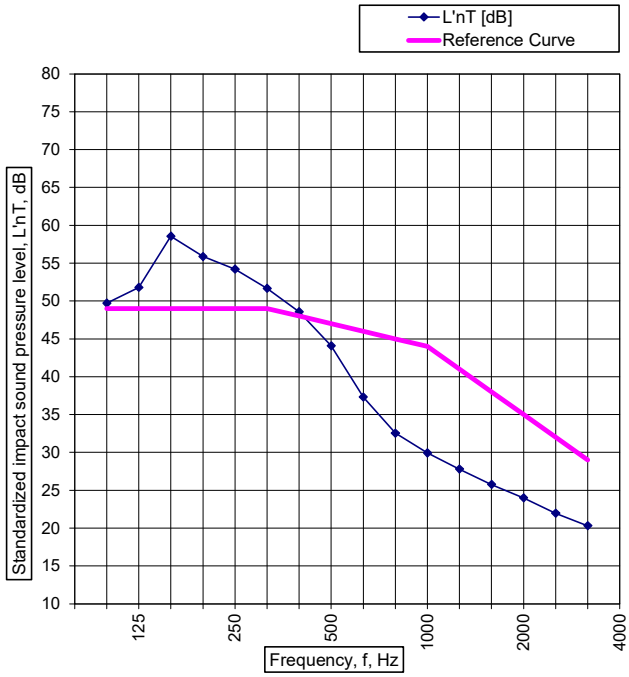
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	55.3	31.3	1.1	52.1
63	50.1	46.4	0.6	47.9
80	55.8	35.8	0.7	54.6
100	51.4	30.2	0.7	49.7
125	53.5	28.4	0.7	51.8
160	59.9	25.4	0.7	58.6
200	57.8	25.0	0.8	55.9
250	55.6	26.9	0.7	54.2
315	53.0	22.0	0.7	51.7
400	50.1	22.9	0.7	48.6
500	45.6	20.3	0.7	44.1
630	38.7	22.3	0.7	37.3
800	33.6	20.8	0.6	32.5
1000	31.2	18.0	0.7	29.9
1250	29.2	18.5	0.7	27.8
1600	27.8	18.7	0.7	25.8
2000	26.8	22.4	0.7	24.0
2500	24.6	19.9	0.7	22.0
3150	23.0	17.1	0.7	20.3
4000	22.3	17.2	0.7	19.6
5000	21.6	13.6	0.7	19.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T005** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

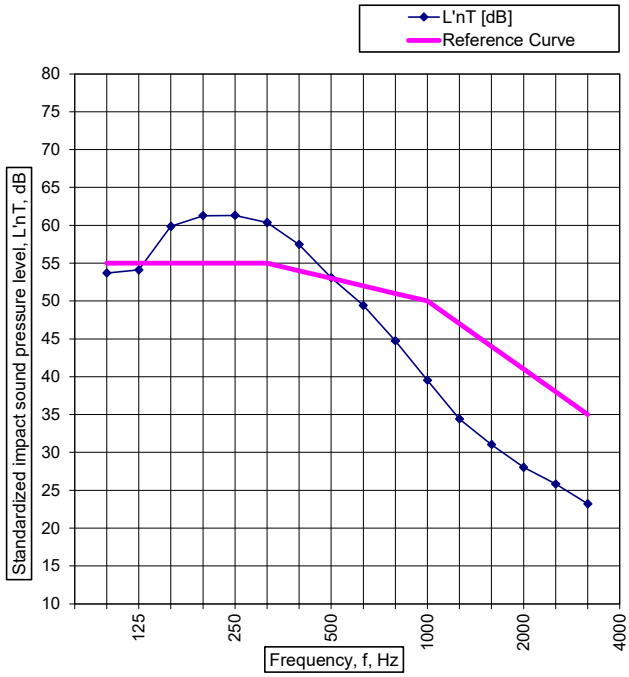
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.2	31.3	1.1	45.0
63	47.0	46.4	0.6	44.8
80	53.8	35.8	0.7	52.6
100	55.4	30.2	0.7	53.7
125	55.8	28.4	0.7	54.1
160	61.2	25.4	0.7	59.9
200	63.2	25.0	0.8	61.3
250	62.7	26.9	0.7	61.3
315	61.7	22.0	0.7	60.4
400	59.0	22.9	0.7	57.5
500	54.6	20.3	0.7	53.1
630	50.8	22.3	0.7	49.4
800	45.8	20.8	0.6	44.7
1000	40.8	18.0	0.7	39.5
1250	35.8	18.5	0.7	34.4
1600	32.5	18.7	0.7	31.0
2000	30.3	22.4	0.7	28.0
2500	27.9	19.9	0.7	25.8
3150	25.3	17.1	0.7	23.2
4000	23.9	17.2	0.7	21.5
5000	23.0	13.6	0.7	21.3



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T006** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

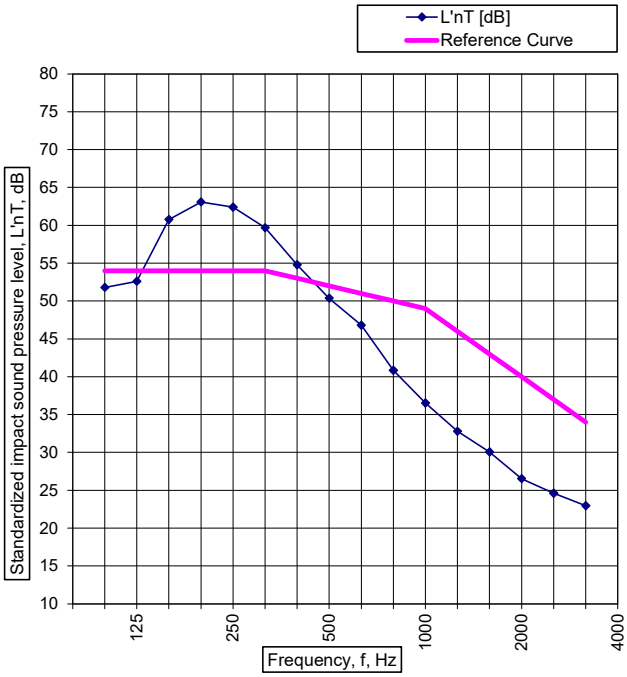
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	45.4	31.3	1.1	42.2
63	44.8	46.4	0.6	42.6
80	51.5	35.8	0.7	50.3
100	53.5	30.2	0.7	51.8
125	54.3	28.4	0.7	52.6
160	62.1	25.4	0.7	60.8
200	65.0	25.0	0.8	63.1
250	63.8	26.9	0.7	62.4
315	61.0	22.0	0.7	59.7
400	56.3	22.9	0.7	54.8
500	51.9	20.3	0.7	50.4
630	48.2	22.3	0.7	46.8
800	41.9	20.8	0.6	40.8
1000	37.8	18.0	0.7	36.5
1250	34.2	18.5	0.7	32.8
1600	31.5	18.7	0.7	30.0
2000	29.1	22.4	0.7	26.5
2500	26.9	19.9	0.7	24.6
3150	25.1	17.1	0.7	23.0
4000	23.4	17.2	0.7	20.8
5000	22.6	13.6	0.7	20.8



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T007** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

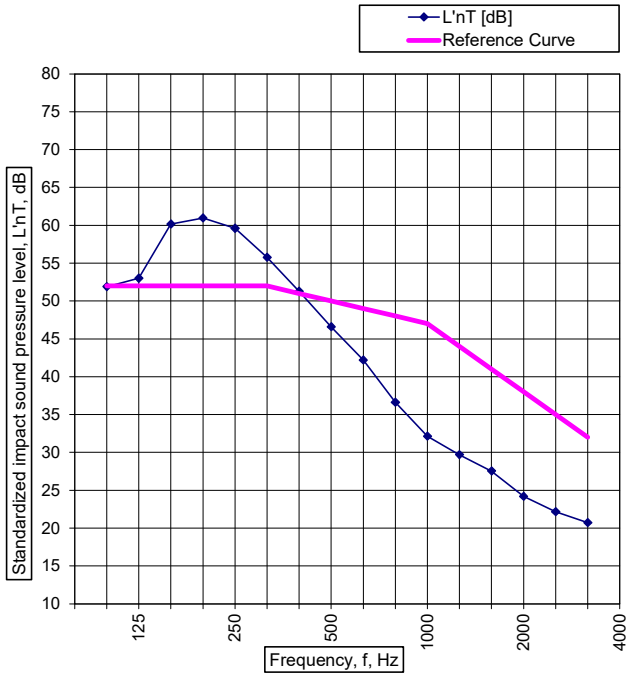
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	43.7	31.3	1.1	40.5
63	44.6	46.4	0.6	42.4
80	50.6	35.8	0.7	49.4
100	53.6	30.2	0.7	51.9
125	54.7	28.4	0.7	53.0
160	61.5	25.4	0.7	60.2
200	62.9	25.0	0.8	61.0
250	61.0	26.9	0.7	59.6
315	57.1	22.0	0.7	55.8
400	52.8	22.9	0.7	51.3
500	48.1	20.3	0.7	46.6
630	43.6	22.3	0.7	42.2
800	37.7	20.8	0.6	36.6
1000	33.4	18.0	0.7	32.1
1250	31.1	18.5	0.7	29.7
1600	29.0	18.7	0.7	27.5
2000	27.0	22.4	0.7	24.2
2500	24.8	19.9	0.7	22.2
3150	23.3	17.1	0.7	20.7
4000	21.9	17.2	0.7	19.2
5000	21.0	13.6	0.7	18.9



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T008** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

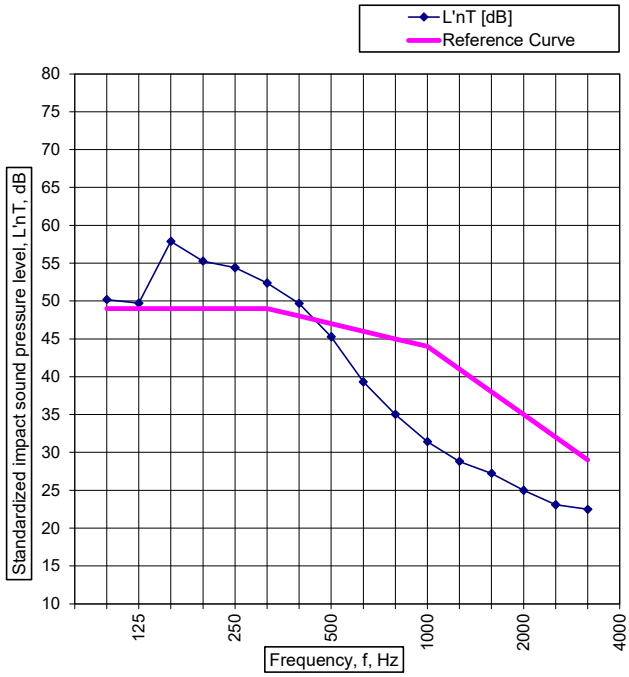
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	53.3	31.3	1.1	50.1
63	50.4	46.4	0.6	48.2
80	53.4	35.8	0.7	52.2
100	51.9	30.2	0.7	50.2
125	51.4	28.4	0.7	49.7
160	59.2	25.4	0.7	57.9
200	57.2	25.0	0.8	55.3
250	55.8	26.9	0.7	54.4
315	53.7	22.0	0.7	52.4
400	51.2	22.9	0.7	49.7
500	46.8	20.3	0.7	45.3
630	40.7	22.3	0.7	39.3
800	36.1	20.8	0.6	35.0
1000	32.7	18.0	0.7	31.4
1250	30.2	18.5	0.7	28.8
1600	28.7	18.7	0.7	27.2
2000	27.8	22.4	0.7	25.0
2500	25.7	19.9	0.7	23.1
3150	24.7	17.1	0.7	22.5
4000	24.8	17.2	0.7	22.6
5000	23.7	13.6	0.7	22.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T009** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

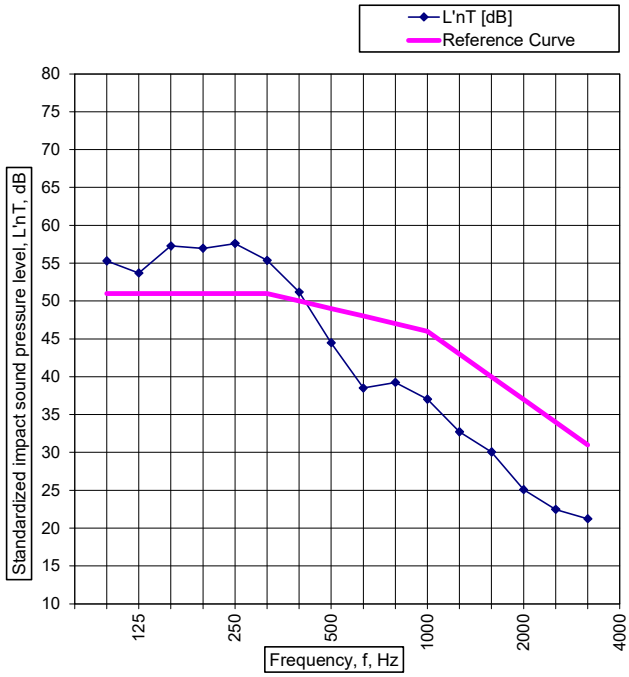
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
7.5mm Iconic Hybrid Plank

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.9	31.3	1.1	45.7
63	48.7	46.4	0.6	46.5
80	55.1	35.8	0.7	53.9
100	57.0	30.2	0.7	55.3
125	55.4	28.4	0.7	53.7
160	58.6	25.4	0.7	57.3
200	58.9	25.0	0.8	57.0
250	59.0	26.9	0.7	57.6
315	56.7	22.0	0.7	55.4
400	52.7	22.9	0.7	51.2
500	46.0	20.3	0.7	44.5
630	39.9	22.3	0.7	38.5
800	40.3	20.8	0.6	39.2
1000	38.3	18.0	0.7	37.0
1250	34.1	18.5	0.7	32.7
1600	31.5	18.7	0.7	30.0
2000	27.9	22.4	0.7	25.1
2500	25.1	19.9	0.7	22.5
3150	23.7	17.1	0.7	21.2
4000	23.0	17.2	0.7	20.3
5000	22.4	13.6	0.7	20.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **49** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T010** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

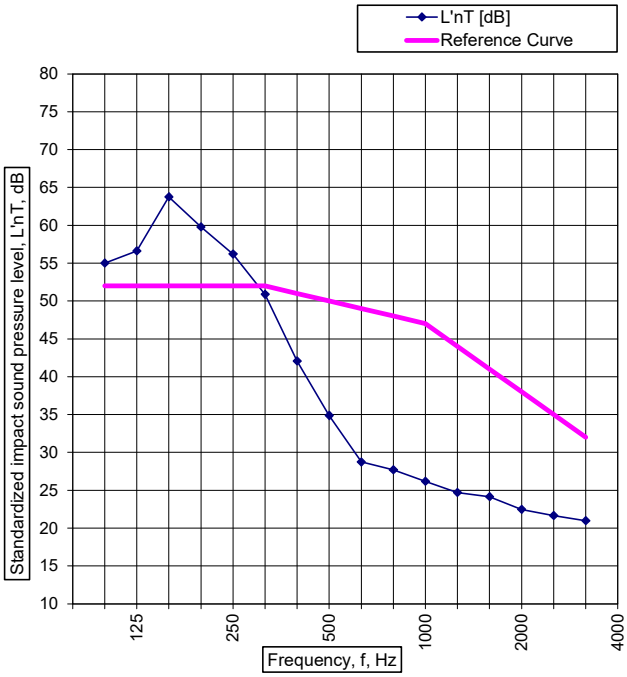
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.0	31.3	1.1	45.8
63	49.8	46.4	0.6	47.6
80	56.8	35.8	0.7	55.6
100	56.7	30.2	0.7	55.0
125	58.3	28.4	0.7	56.6
160	65.1	25.4	0.7	63.8
200	61.7	25.0	0.8	59.8
250	57.6	26.9	0.7	56.2
315	52.2	22.0	0.7	50.9
400	43.6	22.9	0.7	42.1
500	36.4	20.3	0.7	34.9
630	30.8	22.3	0.7	28.7
800	29.4	20.8	0.6	27.7
1000	27.9	18.0	0.7	26.2
1250	26.8	18.5	0.7	24.7
1600	26.4	18.7	0.7	24.1
2000	25.3	22.4	0.7	22.5
2500	24.3	19.9	0.7	21.7
3150	23.5	17.1	0.7	21.0
4000	23.4	17.2	0.7	20.8
5000	22.4	13.6	0.7	20.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50 (2) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T011** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

Signed: Signed:

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

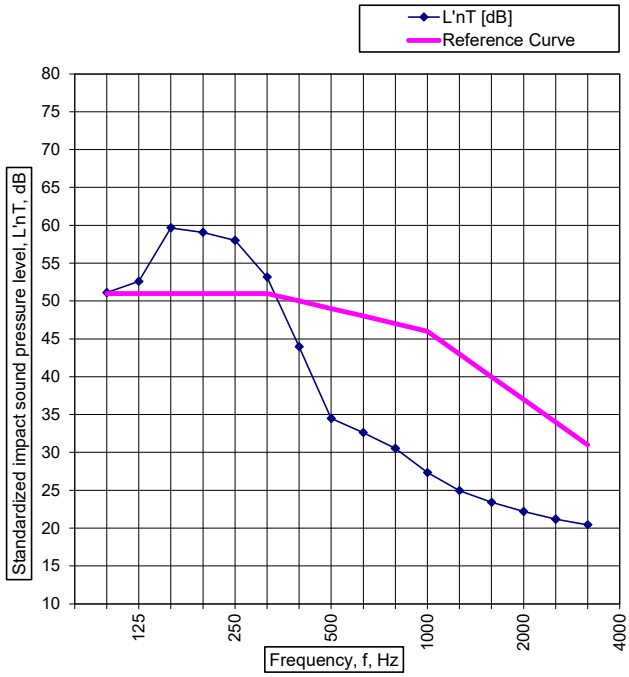
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	45.8	31.3	1.1	42.6
63	46.3	46.4	0.6	44.1
80	52.8	35.8	0.7	51.6
100	52.8	30.2	0.7	51.1
125	54.3	28.4	0.7	52.6
160	61.0	25.4	0.7	59.7
200	61.0	25.0	0.8	59.1
250	59.4	26.9	0.7	58.0
315	54.5	22.0	0.7	53.2
400	45.5	22.9	0.7	44.0
500	36.0	20.3	0.7	34.5
630	34.0	22.3	0.7	32.6
800	31.6	20.8	0.6	30.5
1000	28.6	18.0	0.7	27.3
1250	27.0	18.5	0.7	24.9
1600	25.8	18.7	0.7	23.4
2000	25.0	22.4	0.7	22.2
2500	23.8	19.9	0.7	21.2
3150	23.1	17.1	0.7	20.4
4000	23.1	17.2	0.7	20.4
5000	21.5	13.6	0.7	19.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **49** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T012** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

Signed: Signed:

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

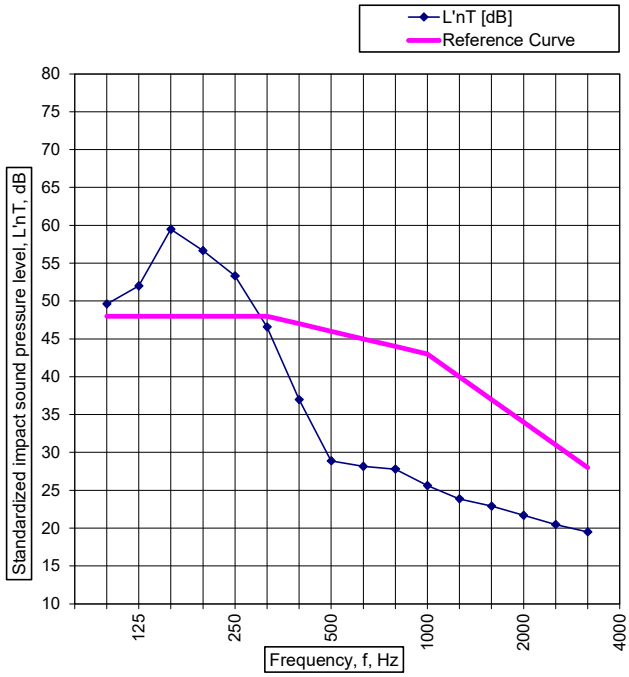
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.3	31.3	1.1	45.1
63	48.7	46.4	0.6	46.5
80	53.4	35.8	0.7	52.2
100	51.3	30.2	0.7	49.6
125	53.7	28.4	0.7	52.0
160	60.8	25.4	0.7	59.5
200	58.6	25.0	0.8	56.7
250	54.7	26.9	0.7	53.3
315	47.9	22.0	0.7	46.6
400	38.5	22.9	0.7	37.0
500	30.4	20.3	0.7	28.9
630	30.3	22.3	0.7	28.2
800	29.5	20.8	0.6	27.8
1000	27.4	18.0	0.7	25.6
1250	26.1	18.5	0.7	23.9
1600	25.4	18.7	0.7	22.9
2000	24.5	22.4	0.7	21.7
2500	23.1	19.9	0.7	20.5
3150	22.2	17.1	0.7	19.5
4000	21.8	17.2	0.7	19.1
5000	20.7	13.6	0.7	18.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **46 (2) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T013** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

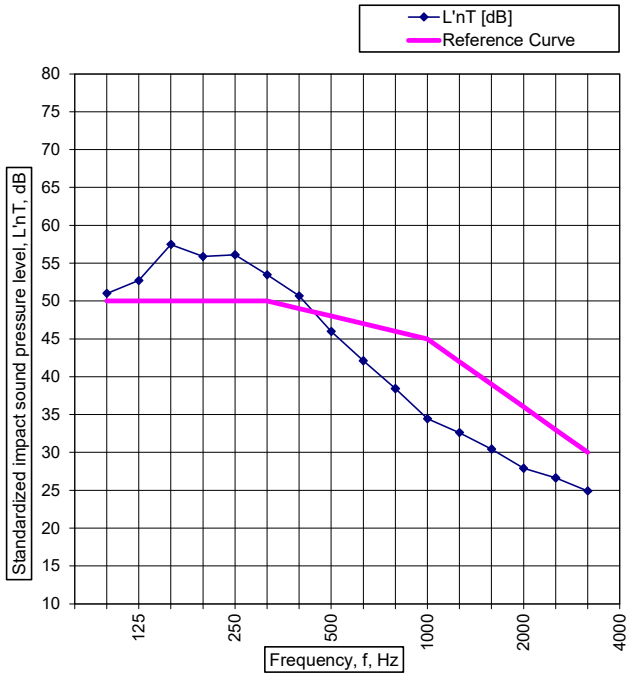
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	45.7	31.3	1.1	42.5
63	47.1	46.4	0.6	44.9
80	52.1	35.8	0.7	50.9
100	52.7	30.2	0.7	51.0
125	54.4	28.4	0.7	52.7
160	58.8	25.4	0.7	57.5
200	57.8	25.0	0.8	55.9
250	57.5	26.9	0.7	56.1
315	54.8	22.0	0.7	53.5
400	52.2	22.9	0.7	50.7
500	47.5	20.3	0.7	46.0
630	43.5	22.3	0.7	42.1
800	39.5	20.8	0.6	38.4
1000	35.7	18.0	0.7	34.4
1250	34.0	18.5	0.7	32.6
1600	31.9	18.7	0.7	30.4
2000	30.2	22.4	0.7	27.9
2500	28.6	19.9	0.7	26.6
3150	26.8	17.1	0.7	24.9
4000	25.4	17.2	0.7	23.3
5000	22.6	13.6	0.7	20.8



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **48 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T014** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

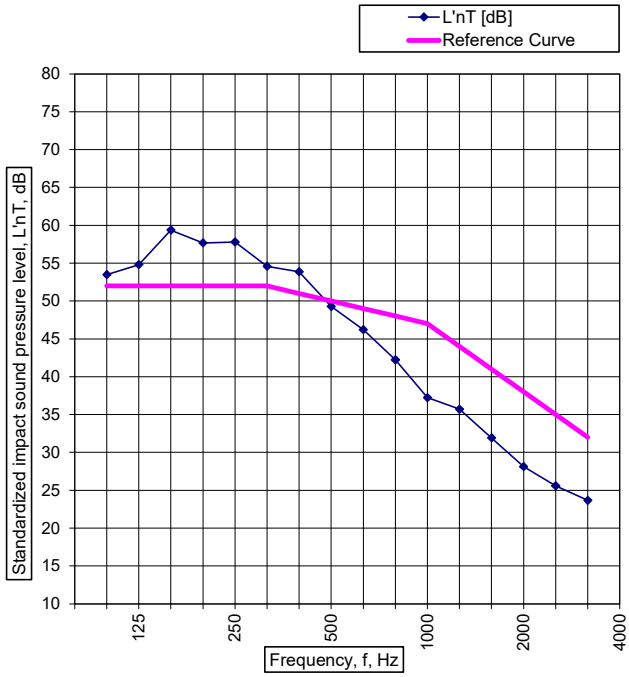
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	52.5	31.3	1.1	49.3
63	47.8	46.4	0.6	45.6
80	54.5	35.8	0.7	53.3
100	55.2	30.2	0.7	53.5
125	56.5	28.4	0.7	54.8
160	60.7	25.4	0.7	59.4
200	59.6	25.0	0.8	57.7
250	59.2	26.9	0.7	57.8
315	55.9	22.0	0.7	54.6
400	55.4	22.9	0.7	53.9
500	50.8	20.3	0.7	49.3
630	47.6	22.3	0.7	46.2
800	43.3	20.8	0.6	42.2
1000	38.5	18.0	0.7	37.2
1250	37.1	18.5	0.7	35.7
1600	33.4	18.7	0.7	31.9
2000	30.4	22.4	0.7	28.1
2500	27.7	19.9	0.7	25.6
3150	25.7	17.1	0.7	23.7
4000	24.8	17.2	0.7	22.6
5000	23.6	13.6	0.7	22.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T015** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

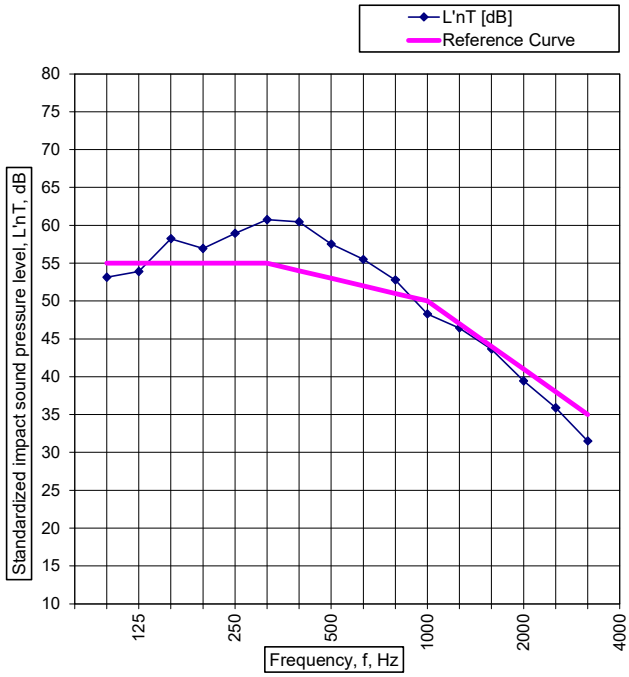
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	47.2	31.3	1.1	43.9
63	45.8	46.4	0.6	43.6
80	53.3	35.8	0.7	52.1
100	54.8	30.2	0.7	53.1
125	55.6	28.4	0.7	53.9
160	59.6	25.4	0.7	58.2
200	58.9	25.0	0.8	56.9
250	60.3	26.9	0.7	58.9
315	62.1	22.0	0.7	60.7
400	62.0	22.9	0.7	60.5
500	59.0	20.3	0.7	57.5
630	56.9	22.3	0.7	55.5
800	53.9	20.8	0.6	52.8
1000	49.6	18.0	0.7	48.3
1250	47.8	18.5	0.7	46.4
1600	45.1	18.7	0.7	43.6
2000	40.9	22.4	0.7	39.4
2500	37.2	19.9	0.7	35.9
3150	32.9	17.1	0.7	31.5
4000	29.0	17.2	0.7	27.6
5000	26.6	13.6	0.7	25.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T016** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

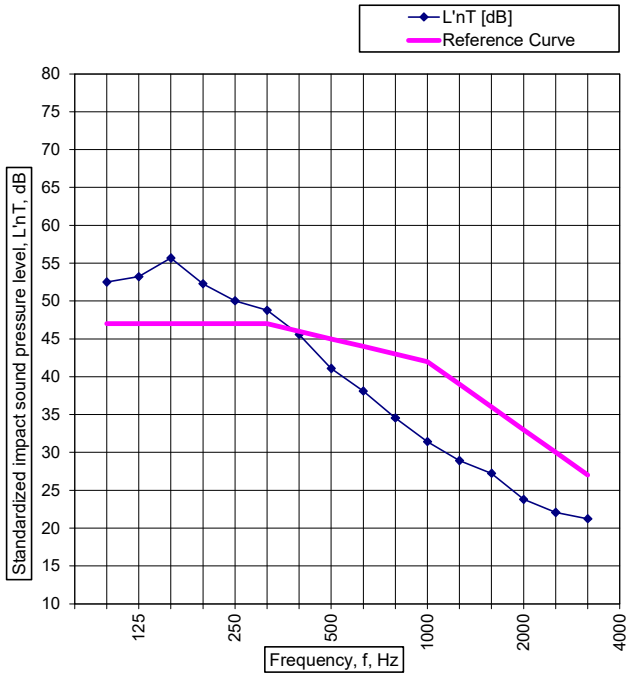
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	45.1	31.3	1.1	41.9
63	45.2	46.4	0.6	43.0
80	48.9	35.8	0.7	47.7
100	54.2	30.2	0.7	52.5
125	54.9	28.4	0.7	53.2
160	57.0	25.4	0.7	55.7
200	54.2	25.0	0.8	52.3
250	51.4	26.9	0.7	50.0
315	50.1	22.0	0.7	48.8
400	47.1	22.9	0.7	45.6
500	42.6	20.3	0.7	41.1
630	39.5	22.3	0.7	38.1
800	35.6	20.8	0.6	34.5
1000	32.7	18.0	0.7	31.4
1250	30.3	18.5	0.7	28.9
1600	28.7	18.7	0.7	27.2
2000	26.6	22.4	0.7	23.8
2500	24.7	19.9	0.7	22.1
3150	23.7	17.1	0.7	21.2
4000	23.2	17.2	0.7	20.5
5000	22.1	13.6	0.7	20.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **45** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T017** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

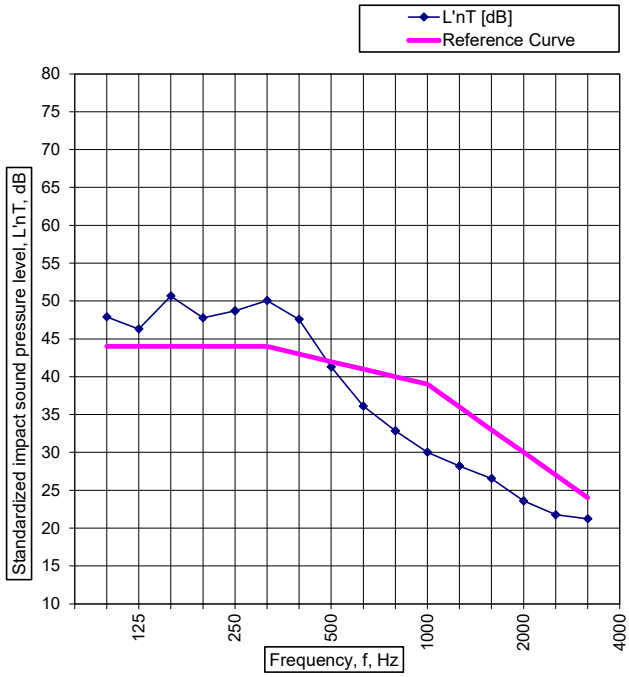
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 24 living/dining room to Unit 21 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.8	m^2
Room Volume:	69.1	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	46.1	31.3	1.1	42.9
63	45.4	46.4	0.6	43.2
80	50.2	35.8	0.7	49.0
100	49.6	30.2	0.7	47.9
125	48.0	28.4	0.7	46.3
160	52.0	25.4	0.7	50.7
200	49.7	25.0	0.8	47.8
250	50.1	26.9	0.7	48.7
315	51.4	22.0	0.7	50.1
400	49.1	22.9	0.7	47.6
500	42.8	20.3	0.7	41.3
630	37.5	22.3	0.7	36.1
800	33.9	20.8	0.6	32.8
1000	31.3	18.0	0.7	30.0
1250	29.6	18.5	0.7	28.2
1600	28.5	18.7	0.7	26.6
2000	26.4	22.4	0.7	23.6
2500	24.4	19.9	0.7	21.8
3150	23.7	17.1	0.7	21.2
4000	23.0	17.2	0.7	20.3
5000	21.8	13.6	0.7	19.9



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **42** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T018** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

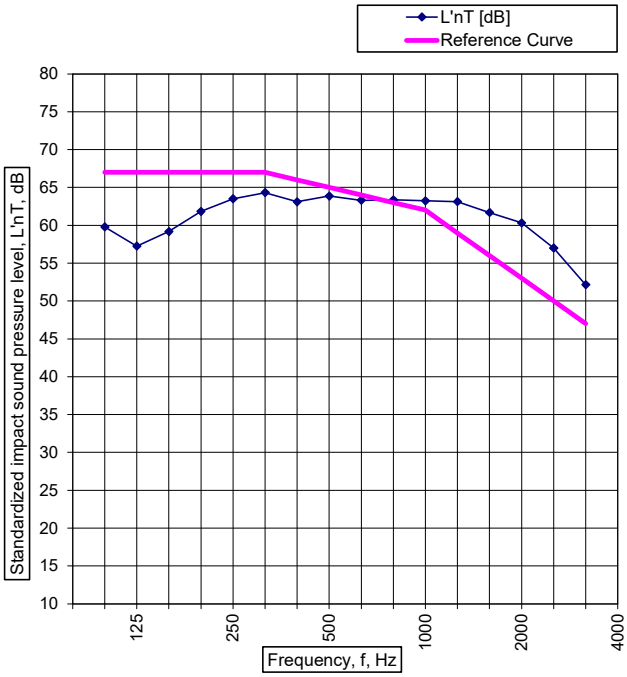
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
Bare Slab; to Ceiling Below

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	54.5	37.3	0.7	53.2
63	53.0	35.0	1.2	49.3
80	56.2	34.4	1.0	53.1
100	61.7	32.5	0.8	59.8
125	58.7	32.0	0.7	57.2
160	60.7	28.8	0.7	59.2
200	62.9	27.9	0.6	61.8
250	64.5	26.2	0.6	63.5
315	65.1	26.0	0.6	64.3
400	63.9	24.6	0.6	63.1
500	64.8	24.5	0.6	63.9
630	64.1	21.7	0.6	63.3
800	64.3	22.8	0.6	63.4
1000	64.3	23.6	0.6	63.2
1250	64.0	23.2	0.6	63.1
1600	62.4	22.2	0.6	61.7
2000	61.1	20.4	0.6	60.3
2500	57.7	16.9	0.6	57.0
3150	52.7	14.2	0.6	52.1
4000	47.0	12.7	0.6	46.4
5000	39.7	11.4	0.6	39.3



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **65** **(-6) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T001** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

Signed: Signed:

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

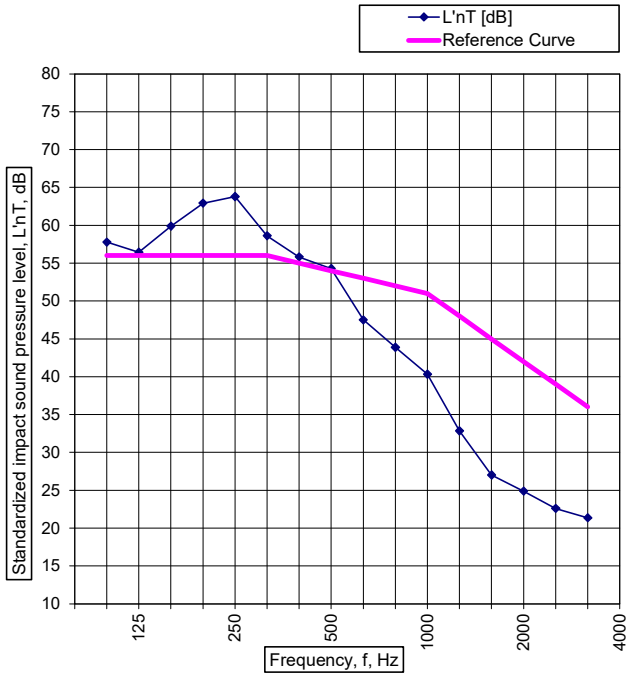
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
14mm Engineered Timber; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	50.8	37.3	0.7	49.5
63	51.8	35.0	1.2	48.1
80	54.2	34.4	1.0	51.1
100	59.7	32.5	0.8	57.8
125	57.9	32.0	0.7	56.4
160	61.4	28.8	0.7	59.9
200	64.0	27.9	0.6	62.9
250	64.8	26.2	0.6	63.8
315	59.4	26.0	0.6	58.6
400	56.6	24.6	0.6	55.8
500	55.2	24.5	0.6	54.3
630	48.3	21.7	0.6	47.5
800	44.8	22.8	0.6	43.9
1000	41.4	23.6	0.6	40.3
1250	33.7	23.2	0.6	32.8
1600	28.8	22.2	0.6	27.0
2000	26.8	20.4	0.6	24.9
2500	24.2	16.9	0.6	22.6
3150	22.6	14.2	0.6	21.4
4000	21.4	12.7	0.6	20.2
5000	20.8	11.4	0.6	19.9



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **54** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T002** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

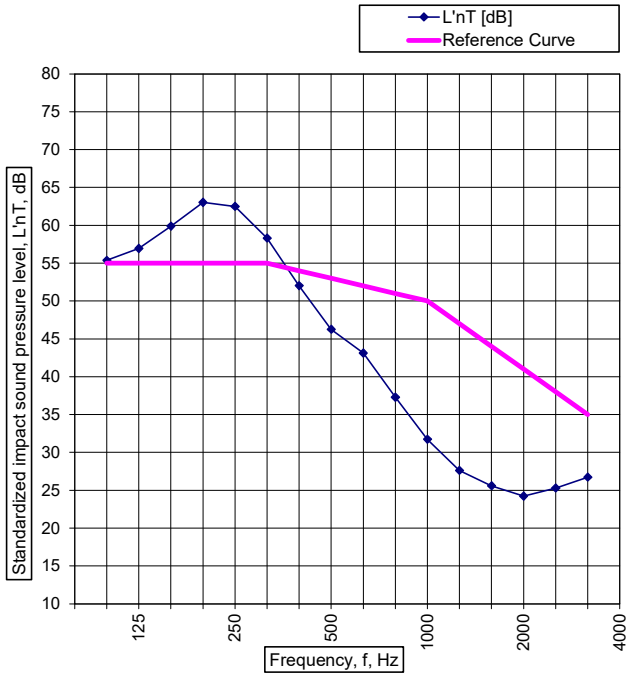
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.8	37.3	0.7	48.5
63	48.9	35.0	1.2	45.2
80	54.3	34.4	1.0	51.2
100	57.3	32.5	0.8	55.4
125	58.4	32.0	0.7	56.9
160	61.4	28.8	0.7	59.9
200	64.1	27.9	0.6	63.0
250	63.5	26.2	0.6	62.5
315	59.1	26.0	0.6	58.3
400	52.8	24.6	0.6	52.0
500	47.2	24.5	0.6	46.3
630	43.9	21.7	0.6	43.1
800	38.2	22.8	0.6	37.3
1000	33.3	23.6	0.6	31.7
1250	29.6	23.2	0.6	27.6
1600	27.6	22.2	0.6	25.6
2000	26.3	20.4	0.6	24.2
2500	26.5	16.9	0.6	25.3
3150	27.3	14.2	0.6	26.7
4000	23.6	12.7	0.6	23.0
5000	21.6	11.4	0.6	21.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T003** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

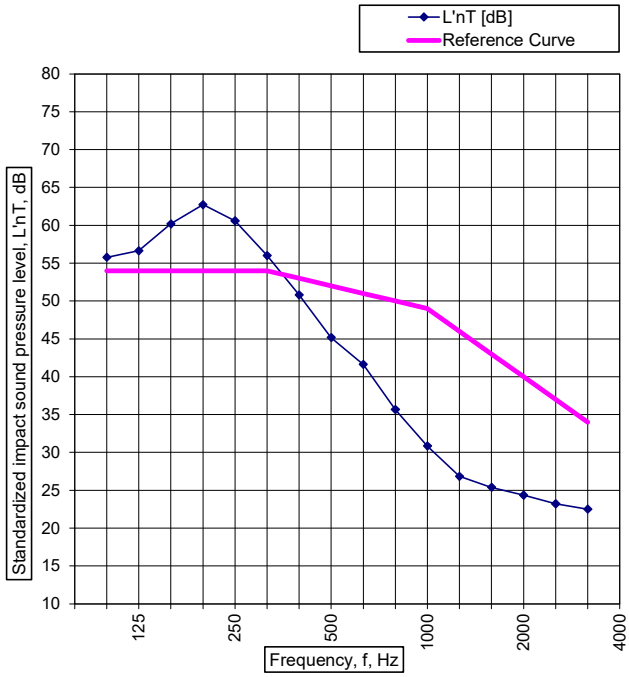
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.4	37.3	0.7	47.1
63	49.5	35.0	1.2	45.8
80	53.1	34.4	1.0	50.0
100	57.7	32.5	0.8	55.8
125	58.1	32.0	0.7	56.6
160	61.7	28.8	0.7	60.2
200	63.8	27.9	0.6	62.7
250	61.6	26.2	0.6	60.6
315	56.8	26.0	0.6	56.0
400	51.6	24.6	0.6	50.8
500	46.1	24.5	0.6	45.2
630	42.4	21.7	0.6	41.6
800	36.6	22.8	0.6	35.7
1000	32.5	23.6	0.6	30.8
1250	29.0	23.2	0.6	26.8
1600	27.4	22.2	0.6	25.4
2000	26.4	20.4	0.6	24.4
2500	24.7	16.9	0.6	23.2
3150	23.6	14.2	0.6	22.5
4000	21.9	12.7	0.6	20.8
5000	20.6	11.4	0.6	19.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T004** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

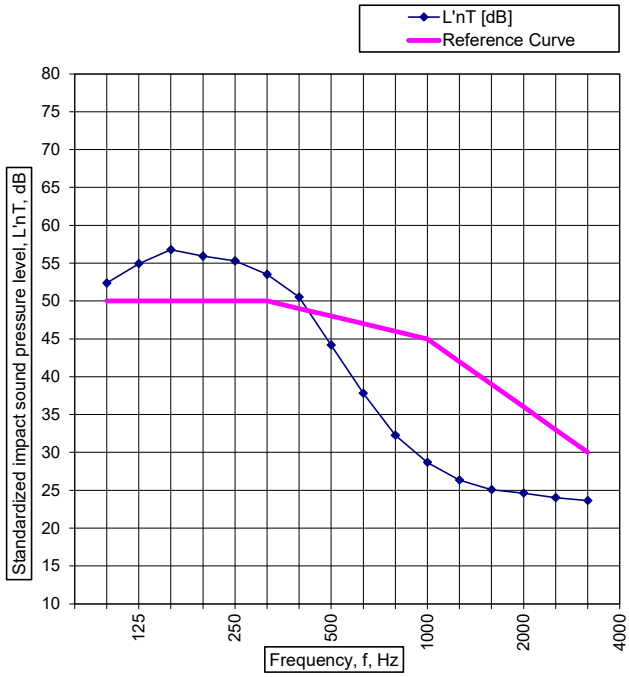
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.0	37.3	0.7	46.7
63	49.2	35.0	1.2	45.5
80	52.8	34.4	1.0	49.7
100	54.3	32.5	0.8	52.4
125	56.4	32.0	0.7	54.9
160	58.3	28.8	0.7	56.8
200	57.0	27.9	0.6	55.9
250	56.3	26.2	0.6	55.3
315	54.3	26.0	0.6	53.5
400	51.3	24.6	0.6	50.5
500	45.1	24.5	0.6	44.2
630	38.6	21.7	0.6	37.8
800	33.2	22.8	0.6	32.3
1000	30.7	23.6	0.6	28.7
1250	28.5	23.2	0.6	26.3
1600	27.1	22.2	0.6	25.1
2000	26.6	20.4	0.6	24.6
2500	25.4	16.9	0.6	24.0
3150	24.2	14.2	0.6	23.6
4000	23.3	12.7	0.6	22.7
5000	22.0	11.4	0.6	21.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **48 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T005** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

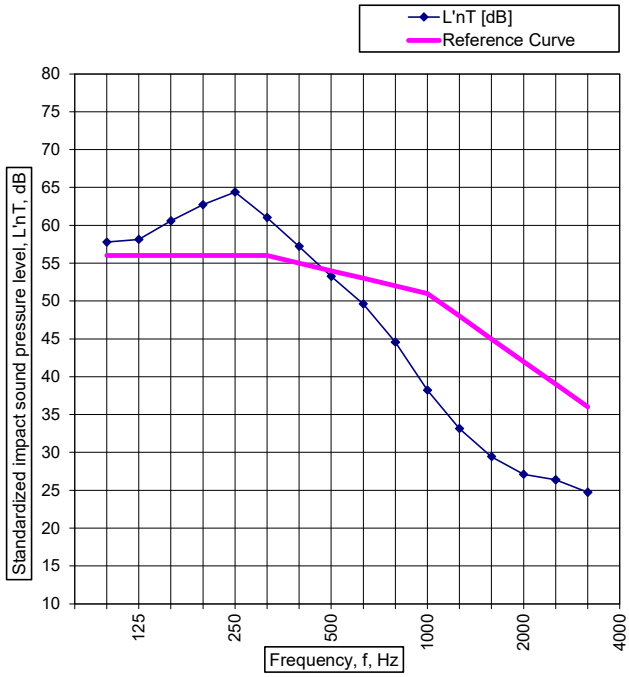
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.5	37.3	0.7	48.2
63	51.0	35.0	1.2	47.3
80	55.2	34.4	1.0	52.1
100	59.7	32.5	0.8	57.8
125	59.6	32.0	0.7	58.1
160	62.1	28.8	0.7	60.6
200	63.8	27.9	0.6	62.7
250	65.4	26.2	0.6	64.4
315	61.8	26.0	0.6	61.0
400	58.0	24.6	0.6	57.2
500	54.2	24.5	0.6	53.3
630	50.4	21.7	0.6	49.6
800	45.5	22.8	0.6	44.6
1000	39.3	23.6	0.6	38.2
1250	34.0	23.2	0.6	33.1
1600	30.8	22.2	0.6	29.4
2000	28.6	20.4	0.6	27.1
2500	27.1	16.9	0.6	26.4
3150	25.3	14.2	0.6	24.7
4000	23.6	12.7	0.6	23.0
5000	22.0	11.4	0.6	21.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **54** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T006** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

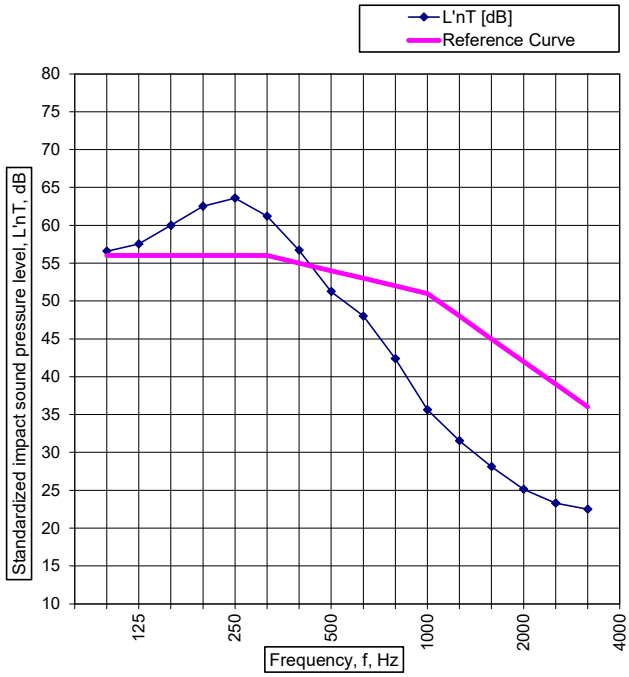
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.0	37.3	0.7	46.7
63	49.3	35.0	1.2	45.6
80	52.5	34.4	1.0	49.4
100	58.5	32.5	0.8	56.6
125	59.0	32.0	0.7	57.5
160	61.5	28.8	0.7	60.0
200	63.6	27.9	0.6	62.5
250	64.6	26.2	0.6	63.6
315	62.0	26.0	0.6	61.2
400	57.5	24.6	0.6	56.7
500	52.2	24.5	0.6	51.3
630	48.8	21.7	0.6	48.0
800	43.3	22.8	0.6	42.4
1000	36.7	23.6	0.6	35.6
1250	32.9	23.2	0.6	31.5
1600	29.7	22.2	0.6	28.1
2000	27.0	20.4	0.6	25.1
2500	24.8	16.9	0.6	23.3
3150	23.6	14.2	0.6	22.5
4000	21.9	12.7	0.6	20.8
5000	20.5	11.4	0.6	19.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **54** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T007** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

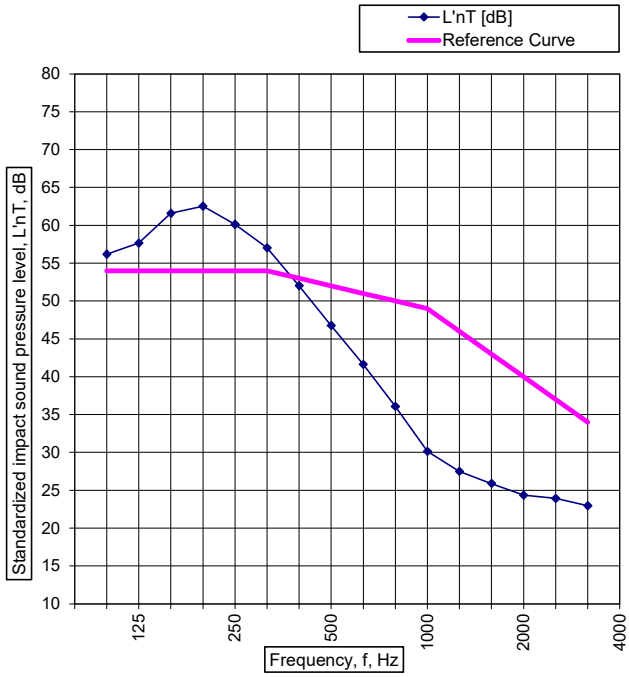
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.9	37.3	0.7	47.6
63	51.6	35.0	1.2	47.9
80	54.8	34.4	1.0	51.7
100	58.1	32.5	0.8	56.2
125	59.1	32.0	0.7	57.6
160	63.1	28.8	0.7	61.6
200	63.6	27.9	0.6	62.5
250	61.1	26.2	0.6	60.1
315	57.8	26.0	0.6	57.0
400	52.8	24.6	0.6	52.0
500	47.7	24.5	0.6	46.8
630	42.4	21.7	0.6	41.6
800	37.0	22.8	0.6	36.1
1000	31.9	23.6	0.6	30.1
1250	29.5	23.2	0.6	27.5
1600	27.9	22.2	0.6	25.9
2000	26.4	20.4	0.6	24.4
2500	25.3	16.9	0.6	23.9
3150	24.0	14.2	0.6	23.0
4000	23.1	12.7	0.6	22.5
5000	22.5	11.4	0.6	22.1



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T008** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

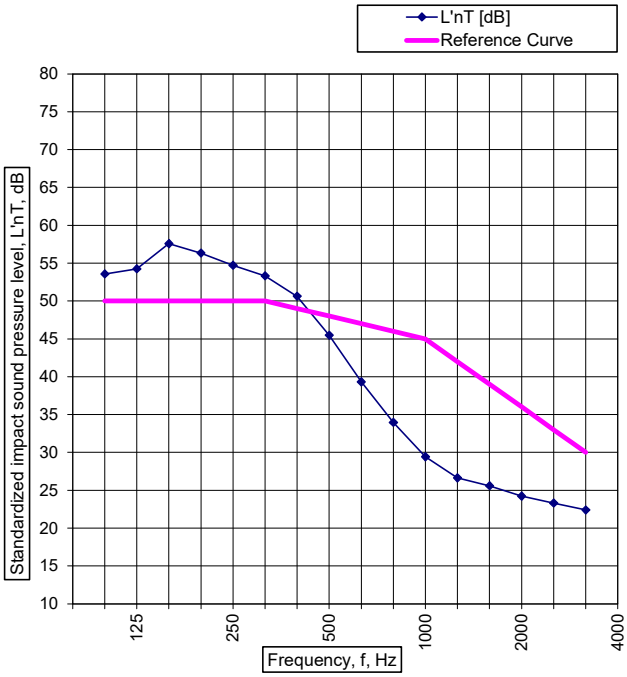
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.1	37.3	0.7	49.8
63	48.8	35.0	1.2	45.1
80	53.9	34.4	1.0	50.8
100	55.5	32.5	0.8	53.6
125	55.7	32.0	0.7	54.2
160	59.1	28.8	0.7	57.6
200	57.4	27.9	0.6	56.3
250	55.7	26.2	0.6	54.7
315	54.1	26.0	0.6	53.3
400	51.4	24.6	0.6	50.6
500	46.4	24.5	0.6	45.5
630	40.1	21.7	0.6	39.3
800	34.9	22.8	0.6	34.0
1000	31.3	23.6	0.6	29.4
1250	28.8	23.2	0.6	26.6
1600	27.6	22.2	0.6	25.6
2000	26.3	20.4	0.6	24.2
2500	24.8	16.9	0.6	23.3
3150	23.5	14.2	0.6	22.4
4000	22.1	12.7	0.6	21.0
5000	21.6	11.4	0.6	21.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **48 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T009** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

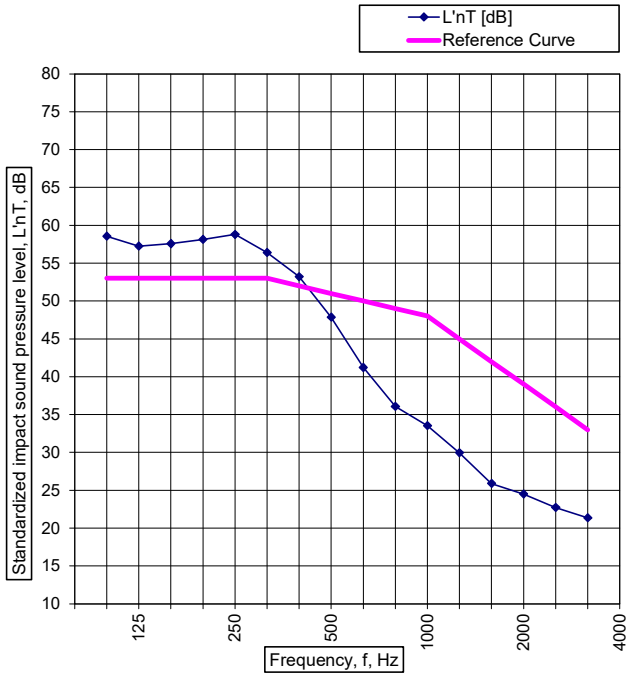
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
7.5mm Iconic Hybrid Plank

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	52.3	37.3	0.7	51.0
63	52.9	35.0	1.2	49.2
80	56.1	34.4	1.0	53.0
100	60.5	32.5	0.8	58.6
125	58.7	32.0	0.7	57.2
160	59.1	28.8	0.7	57.6
200	59.2	27.9	0.6	58.1
250	59.8	26.2	0.6	58.8
315	57.2	26.0	0.6	56.4
400	54.0	24.6	0.6	53.2
500	48.8	24.5	0.6	47.9
630	42.0	21.7	0.6	41.2
800	37.0	22.8	0.6	36.1
1000	34.6	23.6	0.6	33.5
1250	31.5	23.2	0.6	29.9
1600	27.9	22.2	0.6	25.9
2000	26.5	20.4	0.6	24.5
2500	24.3	16.9	0.6	22.7
3150	22.6	14.2	0.6	21.4
4000	21.3	12.7	0.6	20.1
5000	20.2	11.4	0.6	19.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **51** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T010** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

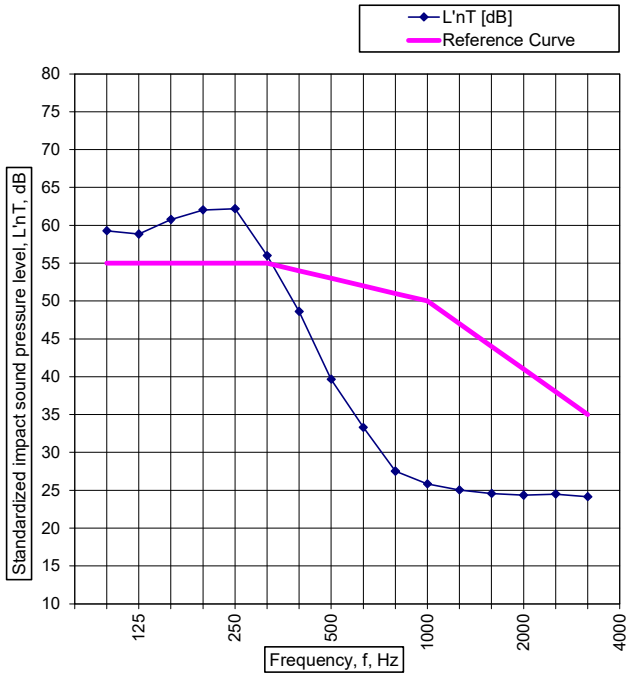
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.3	37.3	0.7	50.0
63	51.7	35.0	1.2	48.0
80	55.4	34.4	1.0	52.3
100	61.2	32.5	0.8	59.3
125	60.3	32.0	0.7	58.8
160	62.3	28.8	0.7	60.8
200	63.1	27.9	0.6	62.0
250	63.2	26.2	0.6	62.2
315	56.8	26.0	0.6	56.0
400	49.4	24.6	0.6	48.6
500	40.6	24.5	0.6	39.7
630	34.1	21.7	0.6	33.3
800	29.5	22.8	0.6	27.5
1000	28.2	23.6	0.6	25.8
1250	27.2	23.2	0.6	25.0
1600	26.6	22.2	0.6	24.6
2000	26.4	20.4	0.6	24.4
2500	25.8	16.9	0.6	24.5
3150	24.7	14.2	0.6	24.1
4000	23.0	12.7	0.6	22.4
5000	21.8	11.4	0.6	21.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T011** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

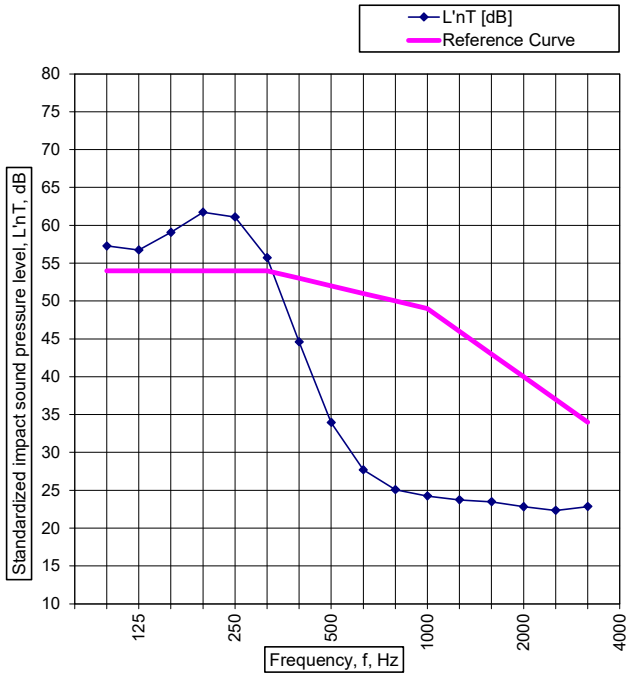
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	50.7	37.3	0.7	49.4
63	51.1	35.0	1.2	47.4
80	56.4	34.4	1.0	53.3
100	59.2	32.5	0.8	57.3
125	58.2	32.0	0.7	56.7
160	60.6	28.8	0.7	59.1
200	62.8	27.9	0.6	61.7
250	62.1	26.2	0.6	61.1
315	56.5	26.0	0.6	55.7
400	45.4	24.6	0.6	44.6
500	34.9	24.5	0.6	34.0
630	29.3	21.7	0.6	27.7
800	27.3	22.8	0.6	25.1
1000	26.6	23.6	0.6	24.2
1250	25.9	23.2	0.6	23.7
1600	25.5	22.2	0.6	23.5
2000	24.9	20.4	0.6	22.8
2500	24.0	16.9	0.6	22.3
3150	23.9	14.2	0.6	22.8
4000	22.8	12.7	0.6	22.2
5000	21.3	11.4	0.6	20.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T012** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

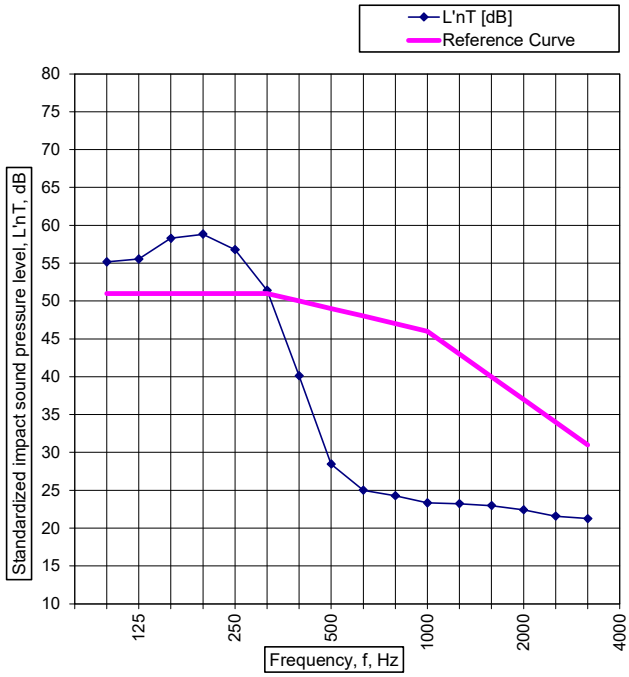
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.4	37.3	0.7	48.1
63	50.4	35.0	1.2	46.7
80	52.4	34.4	1.0	49.3
100	57.1	32.5	0.8	55.2
125	57.0	32.0	0.7	55.5
160	59.8	28.8	0.7	58.3
200	59.9	27.9	0.6	58.8
250	57.8	26.2	0.6	56.8
315	52.2	26.0	0.6	51.4
400	40.9	24.6	0.6	40.1
500	30.6	24.5	0.6	28.4
630	27.1	21.7	0.6	25.0
800	26.5	22.8	0.6	24.3
1000	25.7	23.6	0.6	23.3
1250	25.4	23.2	0.6	23.2
1600	25.0	22.2	0.6	23.0
2000	24.5	20.4	0.6	22.4
2500	23.4	16.9	0.6	21.6
3150	22.5	14.2	0.6	21.2
4000	21.0	12.7	0.6	19.7
5000	19.7	11.4	0.6	18.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **49** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T013** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

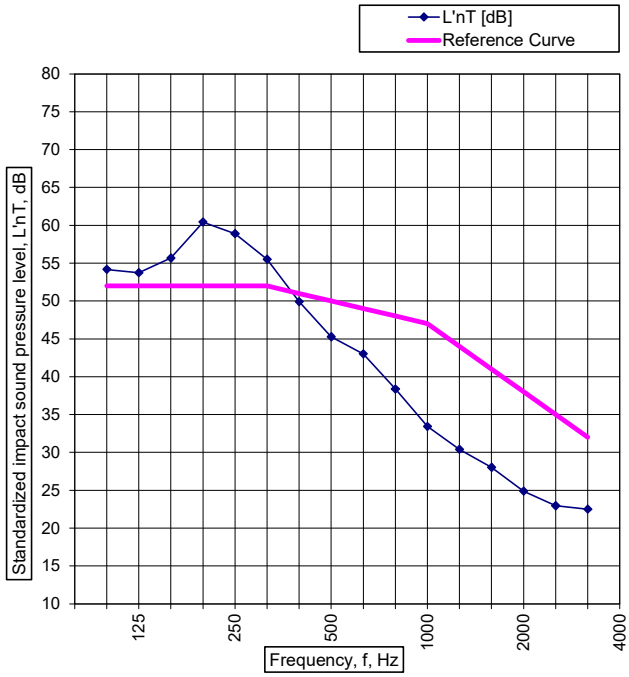
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	47.2	37.3	0.7	45.4
63	49.1	35.0	1.2	45.4
80	53.9	34.4	1.0	50.8
100	56.1	32.5	0.8	54.2
125	55.2	32.0	0.7	53.7
160	57.2	28.8	0.7	55.7
200	61.5	27.9	0.6	60.4
250	59.9	26.2	0.6	58.9
315	56.3	26.0	0.6	55.5
400	50.7	24.6	0.6	49.9
500	46.2	24.5	0.6	45.3
630	43.8	21.7	0.6	43.0
800	39.3	22.8	0.6	38.4
1000	34.5	23.6	0.6	33.4
1250	31.9	23.2	0.6	30.4
1600	29.6	22.2	0.6	28.0
2000	26.8	20.4	0.6	24.9
2500	24.5	16.9	0.6	23.0
3150	23.6	14.2	0.6	22.5
4000	22.8	12.7	0.6	22.2
5000	22.6	11.4	0.6	22.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T014** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

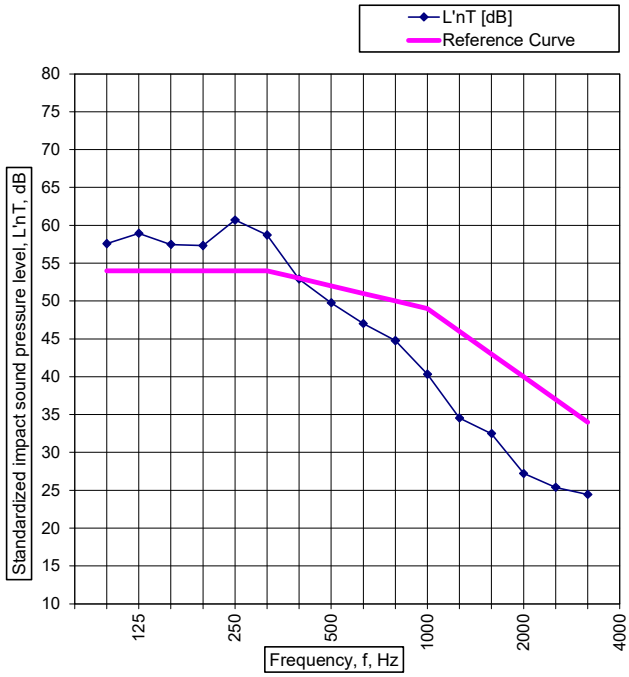
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.7	37.3	0.7	48.4
63	49.5	35.0	1.2	45.8
80	54.7	34.4	1.0	51.6
100	59.5	32.5	0.8	57.6
125	60.4	32.0	0.7	58.9
160	59.0	28.8	0.7	57.5
200	58.4	27.9	0.6	57.3
250	61.7	26.2	0.6	60.7
315	59.5	26.0	0.6	58.7
400	53.7	24.6	0.6	52.9
500	50.7	24.5	0.6	49.8
630	47.8	21.7	0.6	47.0
800	45.7	22.8	0.6	44.8
1000	41.4	23.6	0.6	40.3
1250	35.4	23.2	0.6	34.5
1600	33.2	22.2	0.6	32.5
2000	28.7	20.4	0.6	27.2
2500	26.6	16.9	0.6	25.4
3150	25.0	14.2	0.6	24.4
4000	23.9	12.7	0.6	23.3
5000	23.5	11.4	0.6	23.1



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T015** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

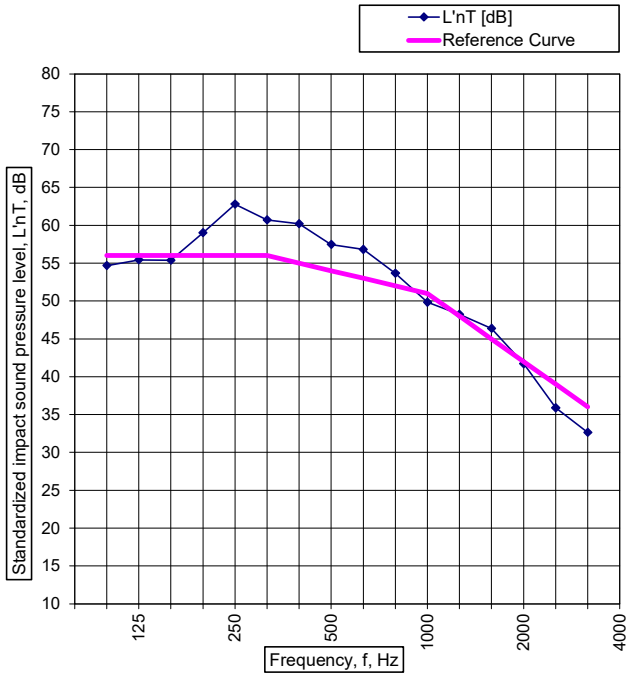
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.5	37.3	0.7	47.2
63	50.2	35.0	1.2	46.5
80	53.7	34.4	1.0	50.6
100	56.6	32.5	0.8	54.7
125	56.9	32.0	0.7	55.4
160	56.9	28.8	0.7	55.4
200	60.1	27.9	0.6	59.0
250	63.8	26.2	0.6	62.8
315	61.5	26.0	0.6	60.7
400	61.0	24.6	0.6	60.2
500	58.4	24.5	0.6	57.5
630	57.6	21.7	0.6	56.8
800	54.6	22.8	0.6	53.7
1000	50.9	23.6	0.6	49.8
1250	49.1	23.2	0.6	48.2
1600	47.1	22.2	0.6	46.4
2000	42.5	20.4	0.6	41.7
2500	36.6	16.9	0.6	35.9
3150	33.2	14.2	0.6	32.6
4000	31.7	12.7	0.6	31.1
5000	30.1	11.4	0.6	29.7



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **54** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T016** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

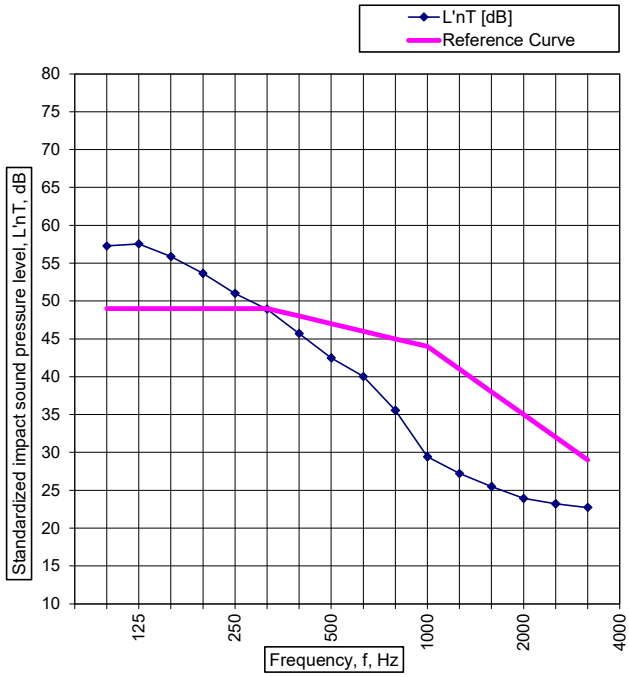
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	46.7	37.3	0.7	44.8
63	46.9	35.0	1.2	43.2
80	53.5	34.4	1.0	50.4
100	59.2	32.5	0.8	57.3
125	59.0	32.0	0.7	57.5
160	57.4	28.8	0.7	55.9
200	54.7	27.9	0.6	53.6
250	52.0	26.2	0.6	51.0
315	49.7	26.0	0.6	48.9
400	46.5	24.6	0.6	45.7
500	43.4	24.5	0.6	42.5
630	40.8	21.7	0.6	40.0
800	36.5	22.8	0.6	35.6
1000	31.3	23.6	0.6	29.4
1250	29.3	23.2	0.6	27.2
1600	27.5	22.2	0.6	25.5
2000	26.0	20.4	0.6	23.9
2500	24.7	16.9	0.6	23.2
3150	23.8	14.2	0.6	22.7
4000	22.8	12.7	0.6	22.2
5000	21.7	11.4	0.6	21.3



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T017** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

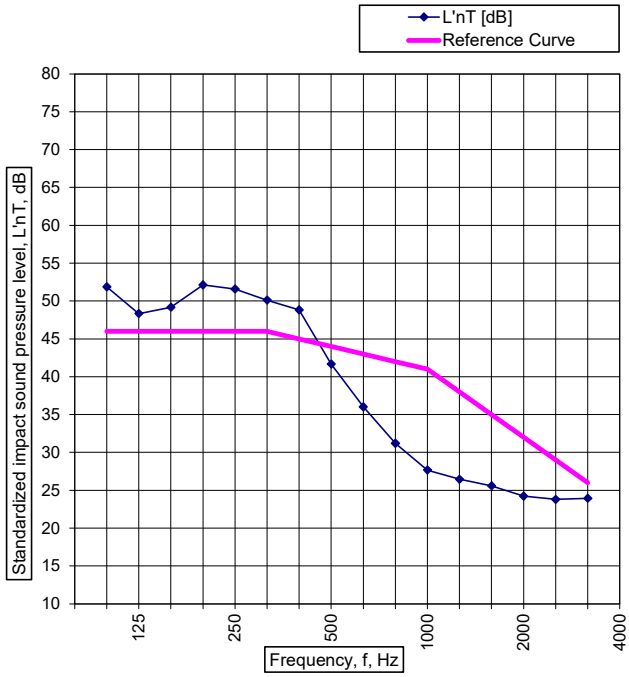
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 23 living/dining room to Unit 20 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	32.2	m^2
Room Volume:	77.2	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	46.2	37.3	0.7	44.3
63	50.6	35.0	1.2	46.9
80	50.1	34.4	1.0	47.0
100	53.8	32.5	0.8	51.9
125	49.8	32.0	0.7	48.3
160	50.7	28.8	0.7	49.2
200	53.2	27.9	0.6	52.1
250	52.6	26.2	0.6	51.6
315	50.9	26.0	0.6	50.1
400	49.6	24.6	0.6	48.8
500	42.6	24.5	0.6	41.7
630	36.8	21.7	0.6	36.0
800	32.6	22.8	0.6	31.2
1000	29.9	23.6	0.6	27.7
1250	28.6	23.2	0.6	26.4
1600	27.6	22.2	0.6	25.6
2000	26.3	20.4	0.6	24.2
2500	25.2	16.9	0.6	23.8
3150	24.5	14.2	0.6	23.9
4000	23.3	12.7	0.6	22.7
5000	21.6	11.4	0.6	21.2



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **44** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T018** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

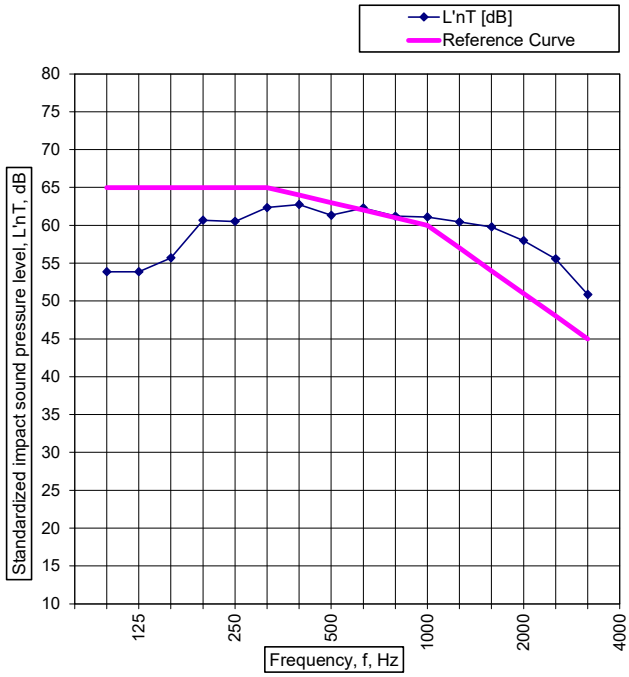
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
Bare Slab; to Ceiling Below

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	55.9	39.4	2.1	49.7
63	55.4	37.0	1.8	49.8
80	60.1	33.6	1.7	54.9
100	57.8	36.7	1.2	53.9
125	57.4	34.0	1.1	53.9
160	59.3	33.5	1.2	55.7
200	64.1	34.2	1.1	60.7
250	64.1	35.5	1.1	60.5
315	65.3	32.4	1.0	62.3
400	65.3	36.3	0.9	62.7
500	64.3	29.9	1.0	61.3
630	64.9	27.7	0.9	62.3
800	63.8	29.3	0.9	61.2
1000	63.3	29.2	0.8	61.1
1250	62.7	26.2	0.8	60.4
1600	61.7	24.7	0.8	59.8
2000	59.8	23.6	0.8	58.0
2500	57.2	24.6	0.7	55.6
3150	52.6	22.2	0.8	50.8
4000	47.0	18.0	0.7	45.3
5000	40.2	16.9	0.7	38.7



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **63** **(-6) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T001** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

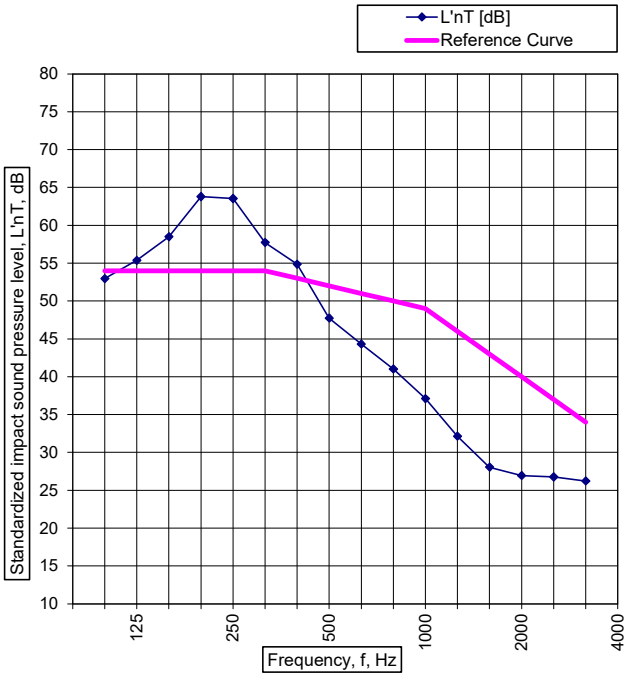
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
14mm Engineered Timber; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	52.8	39.4	2.1	46.6
63	53.3	37.0	1.8	47.7
80	57.3	33.6	1.7	52.1
100	56.9	36.7	1.2	53.0
125	58.9	34.0	1.1	55.4
160	62.1	33.5	1.2	58.5
200	67.2	34.2	1.1	63.8
250	67.1	35.5	1.1	63.5
315	60.7	32.4	1.0	57.7
400	57.4	36.3	0.9	54.8
500	50.7	29.9	1.0	47.7
630	46.9	27.7	0.9	44.3
800	43.6	29.3	0.9	41.0
1000	39.3	29.2	0.8	37.1
1250	35.0	26.2	0.8	32.1
1600	31.1	24.7	0.8	28.0
2000	29.9	23.6	0.8	26.9
2500	29.7	24.6	0.7	26.8
3150	29.0	22.2	0.8	26.2
4000	27.9	18.0	0.7	25.7
5000	27.0	16.9	0.7	25.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T002** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

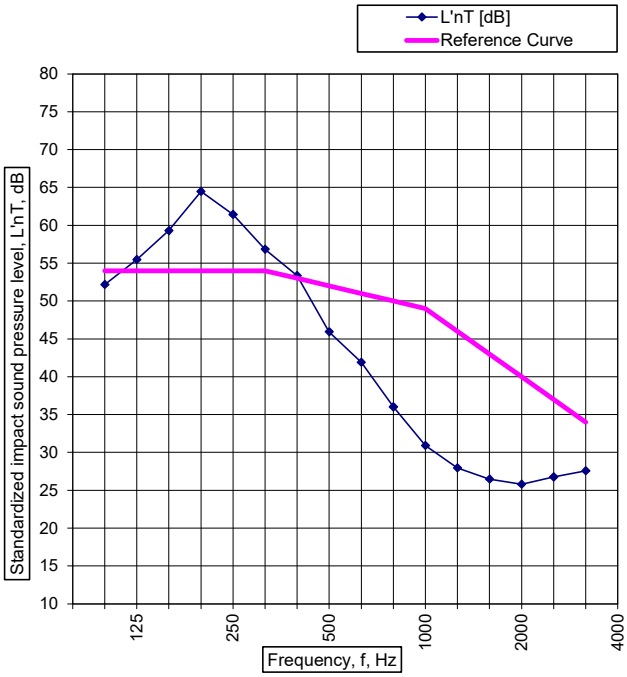
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.1	39.4	2.1	42.4
63	50.3	37.0	1.8	44.7
80	57.5	33.6	1.7	52.3
100	56.1	36.7	1.2	52.2
125	59.0	34.0	1.1	55.5
160	62.9	33.5	1.2	59.3
200	67.9	34.2	1.1	64.5
250	65.0	35.5	1.1	61.4
315	59.8	32.4	1.0	56.8
400	55.9	36.3	0.9	53.3
500	48.9	29.9	1.0	45.9
630	44.5	27.7	0.9	41.9
800	39.1	29.3	0.9	36.0
1000	34.4	29.2	0.8	30.9
1250	31.5	26.2	0.8	27.9
1600	29.7	24.7	0.8	26.5
2000	28.9	23.6	0.8	25.8
2500	29.7	24.6	0.7	26.8
3150	30.1	22.2	0.8	27.6
4000	27.4	18.0	0.7	25.2
5000	25.7	16.9	0.7	23.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T003** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

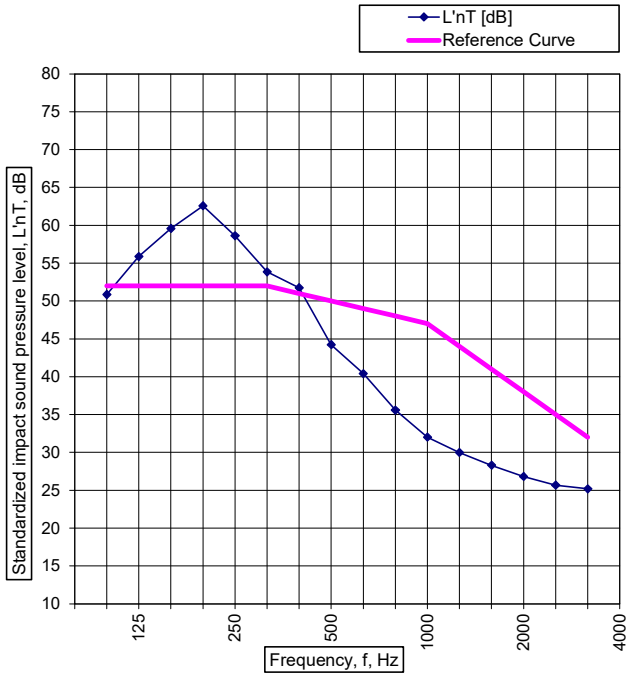
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.4	39.4	2.1	45.2
63	50.2	37.0	1.8	44.6
80	56.3	33.6	1.7	51.1
100	54.8	36.7	1.2	50.9
125	59.4	34.0	1.1	55.9
160	63.2	33.5	1.2	59.6
200	66.0	34.2	1.1	62.6
250	62.2	35.5	1.1	58.6
315	56.8	32.4	1.0	53.8
400	54.3	36.3	0.9	51.7
500	47.2	29.9	1.0	44.2
630	43.0	27.7	0.9	40.4
800	38.7	29.3	0.9	35.6
1000	35.4	29.2	0.8	32.0
1250	33.2	26.2	0.8	30.0
1600	31.3	24.7	0.8	28.3
2000	29.8	23.6	0.8	26.8
2500	28.6	24.6	0.7	25.7
3150	28.2	22.2	0.8	25.2
4000	27.7	18.0	0.7	25.5
5000	26.2	16.9	0.7	24.1



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T004** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

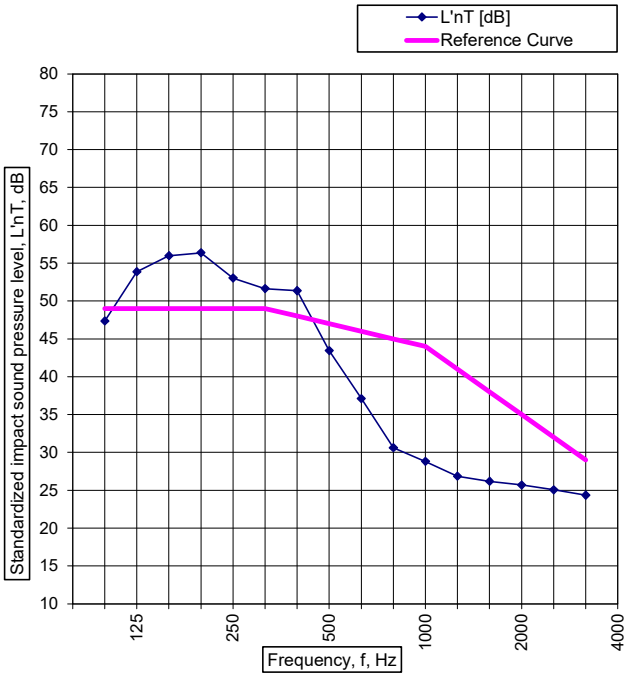
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
14mm Engineered Timber; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.7	39.4	2.1	43.5
63	49.8	37.0	1.8	44.2
80	54.6	33.6	1.7	49.4
100	51.3	36.7	1.2	47.4
125	57.4	34.0	1.1	53.9
160	59.6	33.5	1.2	56.0
200	59.8	34.2	1.1	56.4
250	56.6	35.5	1.1	53.0
315	54.6	32.4	1.0	51.6
400	53.9	36.3	0.9	51.3
500	46.4	29.9	1.0	43.4
630	39.7	27.7	0.9	37.1
800	34.5	29.3	0.9	30.6
1000	32.3	29.2	0.8	28.8
1250	30.4	26.2	0.8	26.8
1600	29.4	24.7	0.8	26.2
2000	28.8	23.6	0.8	25.7
2500	28.0	24.6	0.7	25.1
3150	27.4	22.2	0.8	24.3
4000	26.6	18.0	0.7	24.3
5000	25.5	16.9	0.7	23.3



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T005** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

Signed: Signed:

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

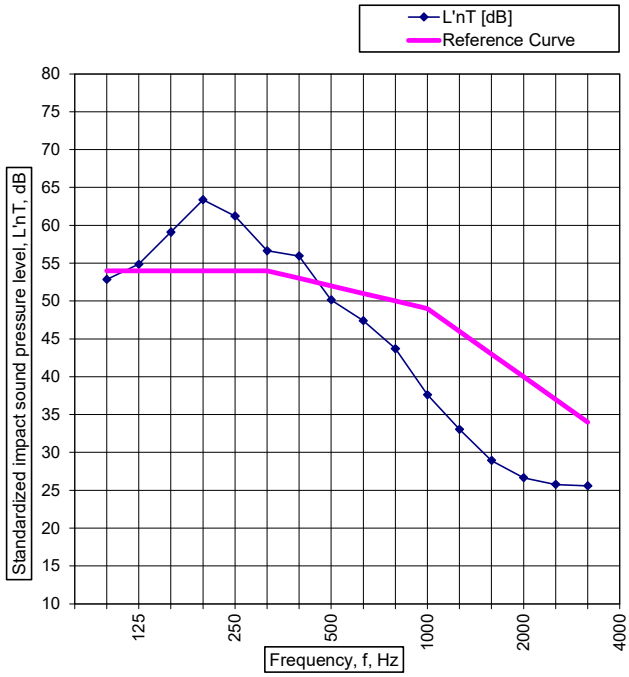
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.7	39.4	2.1	45.5
63	51.3	37.0	1.8	45.7
80	57.0	33.6	1.7	51.8
100	56.8	36.7	1.2	52.9
125	58.4	34.0	1.1	54.9
160	62.7	33.5	1.2	59.1
200	66.8	34.2	1.1	63.4
250	64.8	35.5	1.1	61.2
315	59.6	32.4	1.0	56.6
400	58.5	36.3	0.9	55.9
500	53.1	29.9	1.0	50.1
630	50.0	27.7	0.9	47.4
800	46.3	29.3	0.9	43.7
1000	39.8	29.2	0.8	37.6
1250	35.8	26.2	0.8	33.0
1600	31.8	24.7	0.8	28.9
2000	29.7	23.6	0.8	26.7
2500	28.7	24.6	0.7	25.8
3150	28.5	22.2	0.8	25.6
4000	27.0	18.0	0.7	24.7
5000	25.9	16.9	0.7	23.8



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **52** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T006** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

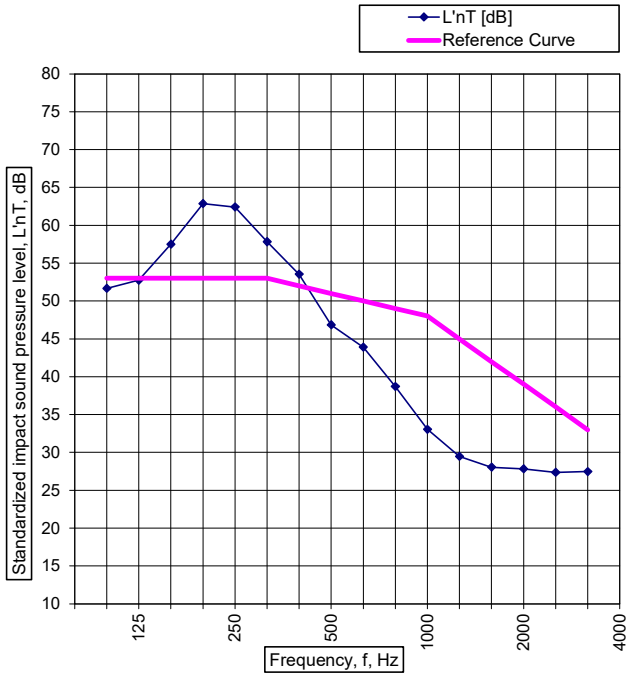
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.2	39.4	2.1	42.5
63	47.2	37.0	1.8	41.6
80	56.6	33.6	1.7	51.4
100	55.6	36.7	1.2	51.7
125	56.3	34.0	1.1	52.8
160	61.1	33.5	1.2	57.5
200	66.3	34.2	1.1	62.9
250	66.0	35.5	1.1	62.4
315	60.8	32.4	1.0	57.8
400	56.1	36.3	0.9	53.5
500	49.8	29.9	1.0	46.8
630	46.5	27.7	0.9	43.9
800	41.3	29.3	0.9	38.7
1000	36.2	29.2	0.8	33.0
1250	32.8	26.2	0.8	29.5
1600	31.1	24.7	0.8	28.0
2000	30.6	23.6	0.8	27.8
2500	30.3	24.6	0.7	27.4
3150	30.0	22.2	0.8	27.5
4000	29.0	18.0	0.7	27.3
5000	27.5	16.9	0.7	26.0



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **51** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T007** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

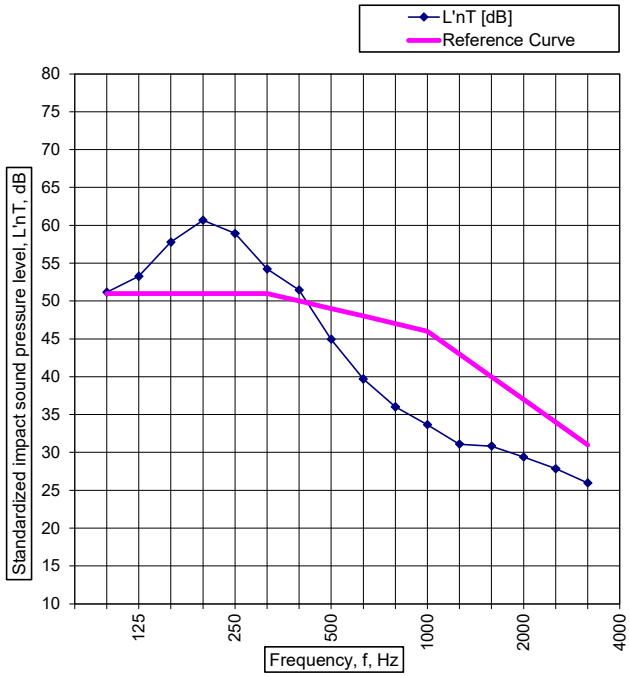
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.1	39.4	2.1	42.4
63	48.9	37.0	1.8	43.3
80	55.9	33.6	1.7	50.7
100	55.1	36.7	1.2	51.2
125	56.8	34.0	1.1	53.3
160	61.4	33.5	1.2	57.8
200	64.1	34.2	1.1	60.7
250	62.5	35.5	1.1	58.9
315	57.2	32.4	1.0	54.2
400	54.0	36.3	0.9	51.4
500	47.9	29.9	1.0	44.9
630	42.3	27.7	0.9	39.7
800	39.1	29.3	0.9	36.0
1000	36.7	29.2	0.8	33.6
1250	34.1	26.2	0.8	31.1
1600	33.4	24.7	0.8	30.8
2000	31.9	23.6	0.8	29.4
2500	30.7	24.6	0.7	27.8
3150	28.8	22.2	0.8	26.0
4000	29.3	18.0	0.7	27.6
5000	26.9	16.9	0.7	25.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **49** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T008** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

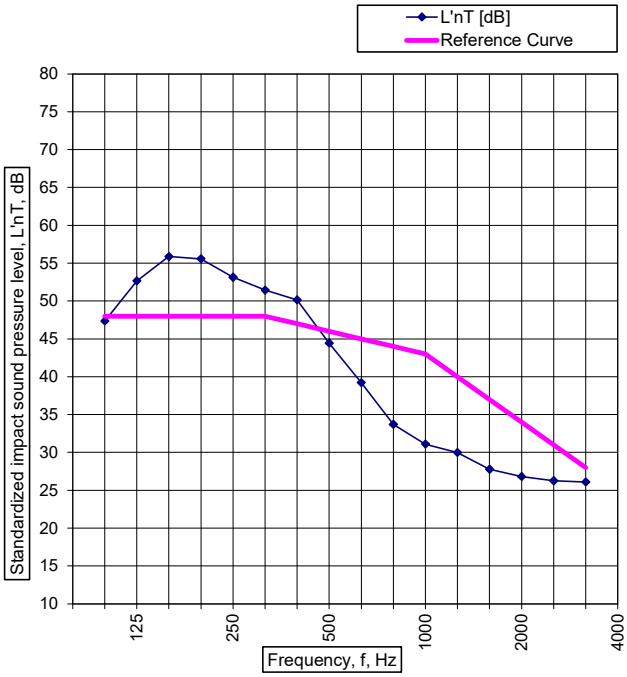
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm Laminated Boards; adhered to 12mm Plywood; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	50.5	39.4	2.1	44.3
63	51.0	37.0	1.8	45.4
80	54.9	33.6	1.7	49.7
100	51.3	36.7	1.2	47.4
125	56.2	34.0	1.1	52.7
160	59.5	33.5	1.2	55.9
200	59.0	34.2	1.1	55.6
250	56.7	35.5	1.1	53.1
315	54.4	32.4	1.0	51.4
400	52.7	36.3	0.9	50.1
500	47.4	29.9	1.0	44.4
630	41.8	27.7	0.9	39.2
800	37.1	29.3	0.9	33.7
1000	34.6	29.2	0.8	31.1
1250	33.2	26.2	0.8	30.0
1600	30.9	24.7	0.8	27.8
2000	29.8	23.6	0.8	26.8
2500	29.2	24.6	0.7	26.3
3150	28.9	22.2	0.8	26.1
4000	27.9	18.0	0.7	25.7
5000	30.0	16.9	0.7	28.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **46** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T009** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

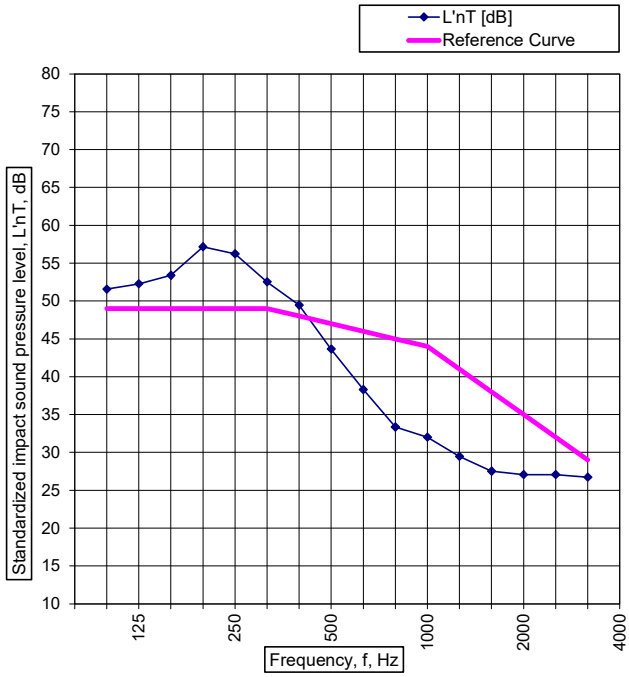
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
7.5mm Iconic Hybrid Plank

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	54.3	39.4	2.1	48.1
63	53.6	37.0	1.8	48.0
80	58.1	33.6	1.7	52.9
100	55.5	36.7	1.2	51.6
125	55.8	34.0	1.1	52.3
160	57.0	33.5	1.2	53.4
200	60.6	34.2	1.1	57.2
250	59.8	35.5	1.1	56.2
315	55.5	32.4	1.0	52.5
400	52.0	36.3	0.9	49.4
500	46.6	29.9	1.0	43.6
630	40.9	27.7	0.9	38.3
800	36.8	29.3	0.9	33.3
1000	35.4	29.2	0.8	32.0
1250	32.8	26.2	0.8	29.5
1600	30.7	24.7	0.8	27.5
2000	30.0	23.6	0.8	27.1
2500	30.0	24.6	0.7	27.1
3150	29.4	22.2	0.8	26.7
4000	27.7	18.0	0.7	25.5
5000	25.9	16.9	0.7	23.8



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T010** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

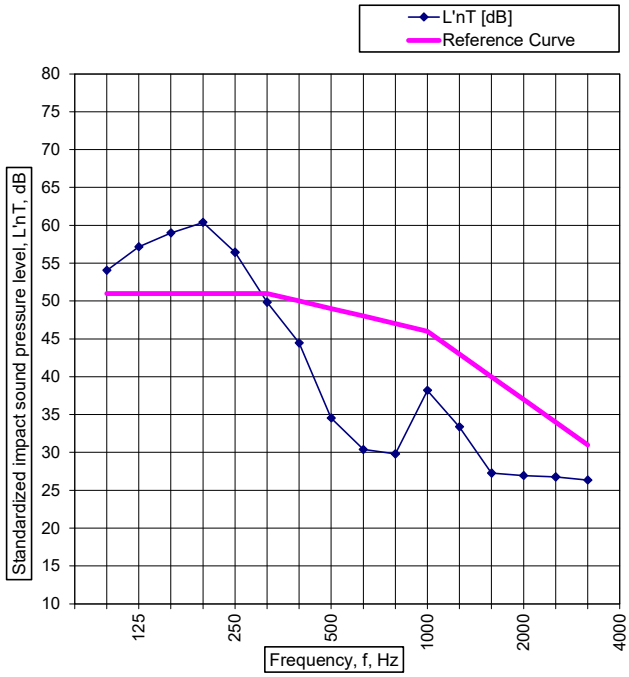
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	52.9	39.4	2.1	46.7
63	53.0	37.0	1.8	47.4
80	56.6	33.6	1.7	51.4
100	58.0	36.7	1.2	54.1
125	60.7	34.0	1.1	57.2
160	62.6	33.5	1.2	59.0
200	63.8	34.2	1.1	60.4
250	60.0	35.5	1.1	56.4
315	52.8	32.4	1.0	49.8
400	47.0	36.3	0.9	44.4
500	38.2	29.9	1.0	34.5
630	34.1	27.7	0.9	30.4
800	33.7	29.3	0.9	29.8
1000	40.4	29.2	0.8	38.2
1250	36.1	26.2	0.8	33.4
1600	30.5	24.7	0.8	27.3
2000	29.9	23.6	0.8	26.9
2500	29.7	24.6	0.7	26.8
3150	29.1	22.2	0.8	26.3
4000	27.6	18.0	0.7	25.4
5000	26.4	16.9	0.7	24.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **49** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T011** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

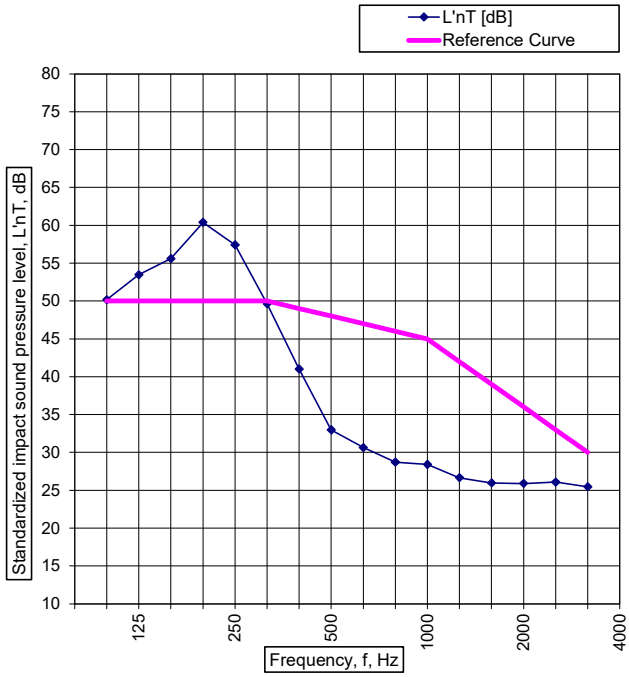
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.6	39.4	2.1	45.4
63	50.7	37.0	1.8	45.1
80	55.4	33.6	1.7	50.2
100	54.1	36.7	1.2	50.2
125	57.0	34.0	1.1	53.5
160	59.2	33.5	1.2	55.6
200	63.8	34.2	1.1	60.4
250	61.0	35.5	1.1	57.4
315	52.6	32.4	1.0	49.6
400	44.3	36.3	0.9	41.0
500	36.9	29.9	1.0	33.0
630	34.3	27.7	0.9	30.6
800	32.6	29.3	0.9	28.7
1000	31.9	29.2	0.8	28.4
1250	30.2	26.2	0.8	26.6
1600	29.2	24.7	0.8	26.0
2000	29.0	23.6	0.8	25.9
2500	29.0	24.6	0.7	26.1
3150	28.4	22.2	0.8	25.4
4000	27.3	18.0	0.7	25.1
5000	26.2	16.9	0.7	24.1



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **48** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T012** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

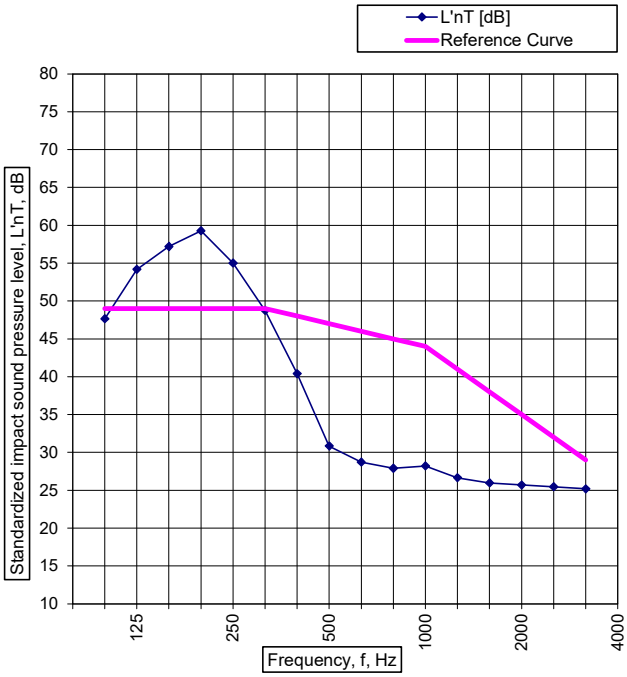
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
7.5mm Iconic Hybrid Plank; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.4	39.4	2.1	45.2
63	51.6	37.0	1.8	46.0
80	53.2	33.6	1.7	48.0
100	51.6	36.7	1.2	47.7
125	57.7	34.0	1.1	54.2
160	60.8	33.5	1.2	57.2
200	62.7	34.2	1.1	59.3
250	58.6	35.5	1.1	55.0
315	51.7	32.4	1.0	48.7
400	43.8	36.3	0.9	40.4
500	35.1	29.9	1.0	30.8
630	32.6	27.7	0.9	28.7
800	31.8	29.3	0.9	27.9
1000	31.7	29.2	0.8	28.2
1250	30.2	26.2	0.8	26.6
1600	29.2	24.7	0.8	26.0
2000	28.8	23.6	0.8	25.7
2500	28.4	24.6	0.7	25.5
3150	28.2	22.2	0.8	25.2
4000	27.3	18.0	0.7	25.1
5000	26.5	16.9	0.7	24.5



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **47** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T013** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

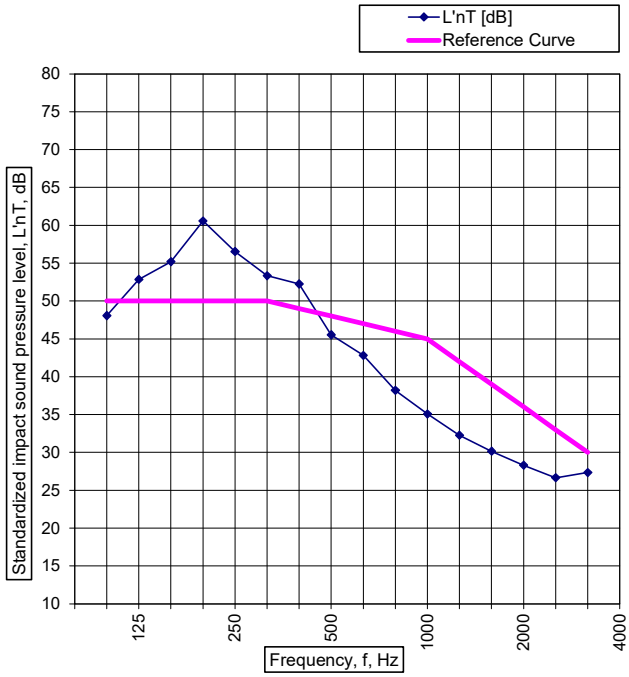
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	50.5	39.4	2.1	44.3
63	50.7	37.0	1.8	45.1
80	52.2	33.6	1.7	47.0
100	52.0	36.7	1.2	48.1
125	56.4	34.0	1.1	52.9
160	58.8	33.5	1.2	55.2
200	64.0	34.2	1.1	60.6
250	60.1	35.5	1.1	56.5
315	56.3	32.4	1.0	53.3
400	54.8	36.3	0.9	52.2
500	48.5	29.9	1.0	45.5
630	45.4	27.7	0.9	42.8
800	40.8	29.3	0.9	38.2
1000	37.9	29.2	0.8	35.1
1250	35.1	26.2	0.8	32.2
1600	32.8	24.7	0.8	30.1
2000	31.0	23.6	0.8	28.3
2500	29.6	24.6	0.7	26.7
3150	29.9	22.2	0.8	27.3
4000	29.0	18.0	0.7	27.3
5000	27.1	16.9	0.7	25.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **48** **(1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T014** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

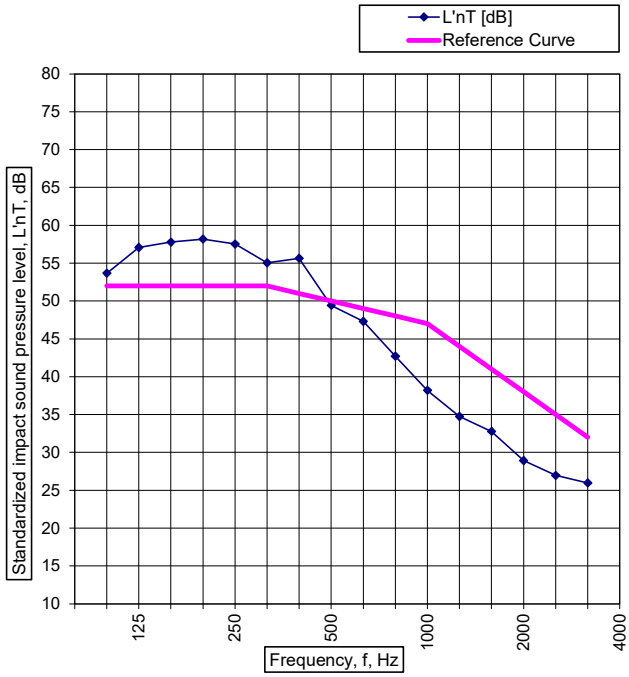
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4mm Acoustica Angelstep 630

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	51.2	39.4	2.1	45.0
63	50.8	37.0	1.8	45.2
80	56.8	33.6	1.7	51.6
100	57.6	36.7	1.2	53.7
125	60.6	34.0	1.1	57.1
160	61.4	33.5	1.2	57.8
200	61.6	34.2	1.1	58.2
250	61.1	35.5	1.1	57.5
315	58.0	32.4	1.0	55.0
400	58.2	36.3	0.9	55.6
500	52.4	29.9	1.0	49.4
630	49.9	27.7	0.9	47.3
800	45.3	29.3	0.9	42.7
1000	40.4	29.2	0.8	38.2
1250	37.0	26.2	0.8	34.7
1600	34.7	24.7	0.8	32.8
2000	31.5	23.6	0.8	28.9
2500	29.9	24.6	0.7	27.0
3150	28.8	22.2	0.8	26.0
4000	27.5	18.0	0.7	25.3
5000	26.4	16.9	0.7	24.4



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **50** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T015** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

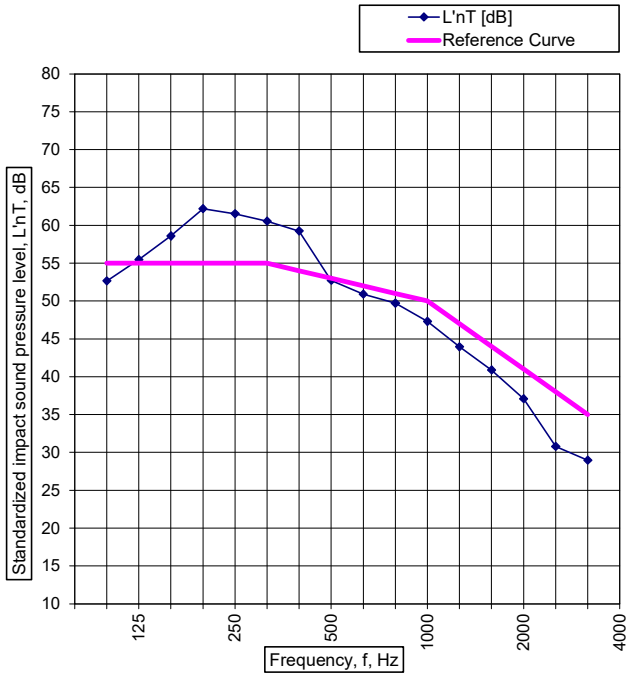
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 4.5mm Regupol Sonus Multi

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	53.0	39.4	2.1	46.8
63	51.6	37.0	1.8	46.0
80	57.0	33.6	1.7	51.8
100	56.6	36.7	1.2	52.7
125	59.0	34.0	1.1	55.5
160	62.2	33.5	1.2	58.6
200	65.6	34.2	1.1	62.2
250	65.1	35.5	1.1	61.5
315	63.5	32.4	1.0	60.5
400	61.8	36.3	0.9	59.2
500	55.7	29.9	1.0	52.7
630	53.5	27.7	0.9	50.9
800	52.3	29.3	0.9	49.7
1000	49.5	29.2	0.8	47.3
1250	46.2	26.2	0.8	43.9
1600	42.8	24.7	0.8	40.9
2000	38.9	23.6	0.8	37.1
2500	33.1	24.6	0.7	30.8
3150	31.3	22.2	0.8	29.0
4000	29.3	18.0	0.7	27.6
5000	28.5	16.9	0.7	27.0



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **53** **(0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T016** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

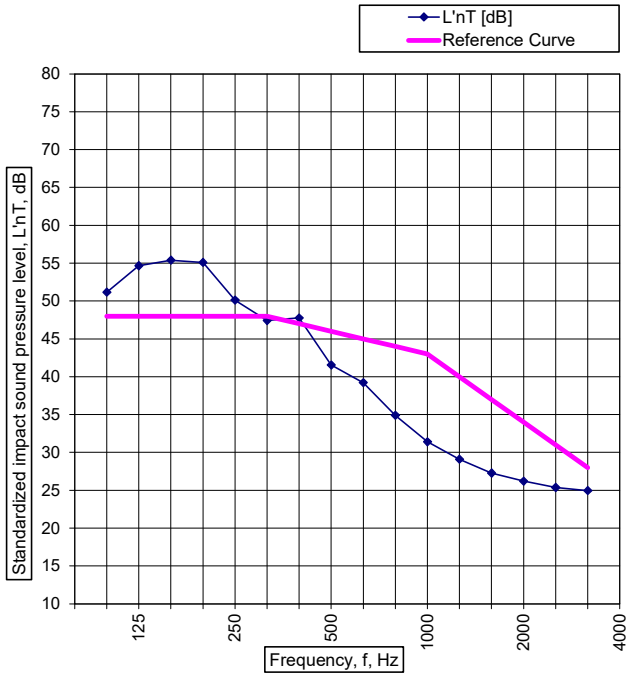
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 9mm Regupol Sonus Multi; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	48.7	39.4	2.1	42.0
63	48.6	37.0	1.8	43.0
80	52.9	33.6	1.7	47.7
100	55.1	36.7	1.2	51.2
125	58.2	34.0	1.1	54.7
160	59.0	33.5	1.2	55.4
200	58.5	34.2	1.1	55.1
250	53.7	35.5	1.1	50.1
315	50.4	32.4	1.0	47.4
400	50.3	36.3	0.9	47.7
500	44.5	29.9	1.0	41.5
630	41.8	27.7	0.9	39.2
800	38.1	29.3	0.9	34.9
1000	34.9	29.2	0.8	31.4
1250	32.5	26.2	0.8	29.1
1600	30.5	24.7	0.8	27.3
2000	29.3	23.6	0.8	26.2
2500	28.3	24.6	0.7	25.4
3150	28.0	22.2	0.8	24.9
4000	27.4	18.0	0.7	25.2
5000	26.1	16.9	0.7	24.0



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **46 (0) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T017** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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Standardized impact sound pressure levels according to ISO 140-7
Field measurements of impact sound insulation of floors - L'nT,w + CI (BCA AAAC-No CI)

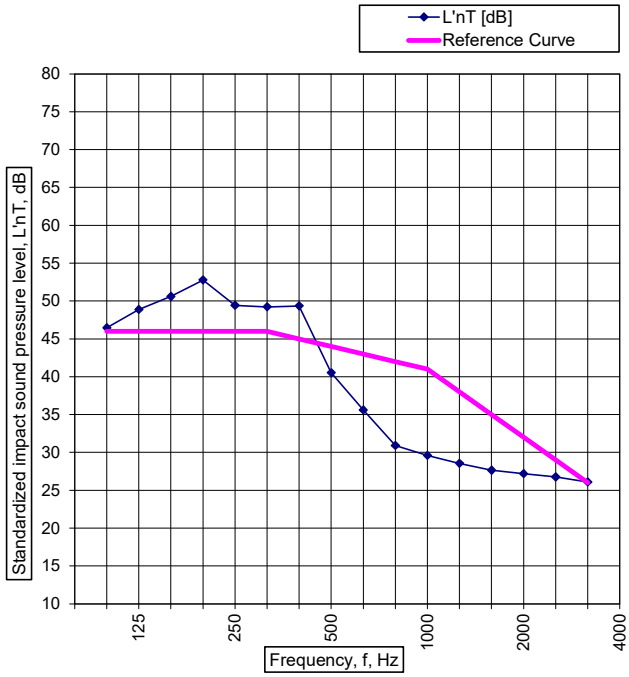
Client: **The Owners SP3840**
Building Address: **51-53 The Crescent MANLY NSW 2095**
Test Date: **12/05/2022**
Project Number: **5627**

Description and identification of the building and test arranagement:
Unit 14a living/dining room to Unit 10 living/dining room

Construction:
8mm CeramicTiles; adhered to 2x6mm FC; on 8mm Regupol Sonus Curve; on 19mm Yellowtongue; on 17mm Regupol Sonus Curve

Wall height:	2.4	m
Long Wall Length:	-	m
Short Wall Length:	-	m
Floor/Ceiling Area:	28.2	m^2
Room Volume:	67.7	m^3

Frequency *f* [Hz]	Average L2 [dB]	Average B2 [dB]	Average T2 [s]	L'_{nT} [dB]
50	49.2	39.4	2.1	42.5
63	50.1	37.0	1.8	44.5
80	52.8	33.6	1.7	47.6
100	50.4	36.7	1.2	46.5
125	52.4	34.0	1.1	48.9
160	54.2	33.5	1.2	50.6
200	56.2	34.2	1.1	52.8
250	53.0	35.5	1.1	49.4
315	52.2	32.4	1.0	49.2
400	51.9	36.3	0.9	49.3
500	43.5	29.9	1.0	40.5
630	38.2	27.7	0.9	35.6
800	34.8	29.3	0.9	30.9
1000	33.1	29.2	0.8	29.6
1250	32.1	26.2	0.8	28.5
1600	30.8	24.7	0.8	27.6
2000	30.1	23.6	0.8	27.2
2500	29.7	24.6	0.7	26.8
3150	28.9	22.2	0.8	26.1
4000	28.0	18.0	0.7	26.3
5000	26.6	16.9	0.7	24.6



Rating According to AS/ISO 717.2-2004:

$L'_{nT,w}(C_I)$ = **44** **(-1) dB**

Evaluation Based on field measurement results obtained in one-third octave bands by an engineering method.

Measurements and assessments of sound transmission through floor/ceiling systems are carried out in general accordance with the following standards:
• AS ISO 717.2:2004 – "Acoustics - Rating of sound insulation in buildings and of building elements - Impact sound insulation"; and
• AS/NZS ISO 140.7:2006 – "Acoustics - Measurement of sound insulation in buildings and of building elements - Field measurements of impact sound insulation of floors".

Test ID **T018** Test performed by: **NW + DK**

Date of Report: **03/06/2022** Testing Company: **Acoustic Dynamics Pty Ltd**

Report Prepared By: **Nathan Wendt** Report Authorised By: **Richard Haydon**

Position: **Project Consultant** Position: **Director (MAAS, MIEAust)**

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