

9 October 2026

TL238-05F01 Carpet Tile Floor Impact Test - Aura Range (r0)

Inspired Floorcoverings

Jarod Hainey

jarod@inspiredfc.com.au

From: Tony Wong [Tony.Wong@renzotonin.com.au]

Inspired Floorcoverings - Field Impact Sound Insulation Test Report - Aura Range Carpet Tile

1 Introduction

Renzo Tonin & Associates was engaged by Inspired Floorcoverings to conduct acoustic testing on a sample of the Aura Range carpet tile at Unit 4, 31-33 Chaplin Drive, Lane Cove West to determine its impact sound insulation performance. The test results are compared to the sound insulation requirements of the current National Construction Code (NCC) Part F7.

The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

2 Acoustic Requirements

Inter-tenancy floors of Class 2 and Class 3 buildings shall comply with the current National Construction Code of Australia 2022 (formally Building Code of Australia). Relevant sections of the NCC are reproduced below:

"F7V1 Sound transmission through floors [F7P1]

[2019: FV5.1]

Compliance with F7P1 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—

(a) airborne: a weighted standardised level difference with spectrum adaptation term ($D_{nT,w} + C_{tr}$) not less than 45 when determined under AS/NZS ISO 717.1; and

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

As per Clause (b) of Part F7V1 of the NCC, the impact sound insulation rating ($L_{nT,w}$) of a floor/ceiling system separating of sole-occupancy when measured in-situ is required to be no greater than 62 ie.

$L_{nT,w} \leq 62$.

3 Methodology

The floor impact test was conducted in Unit 4, 31-33 Chaplin Drive, Lane Cove West on 08/10/2026. Unit 4 is a split-level office tenancy with an open-plan office on the upper floor and enclosed meeting room and entrance on the lower floor. The floor/ceiling system separating the upper and lower floor of the tenancy consists of 180mm concrete slab and a standard mineral fibre ceiling tiles suspended 400mm beneath slab soffit. A sample of the Auro Range carpet tile was adhered to be bare slab near the centre of the open-plan office area for testing. The transmitted impact sound pressure levels were measured in the meeting room directly below.

The impact sound insulation tests were conducted in accordance with the following International Standards:

- ISO 16283-2 "Acoustics — Field measurement of sound insulation in buildings and of building elements — Part 2: Impact sound insulation"
- ISO 717-2 "Acoustics – Rating of sound insulation in buildings and of building elements – Part 2: Impact sound insulation".
- ISO 3382-2 "Acoustics — Measurement of room acoustic parameters — Part 2: Reverberation time in ordinary rooms"

4 Test Procedure

4.1 Floor Impact Test

Floor impact sound insulation test was conducted according to the following procedure:

1. A tapping machine was operated in different positions on the sample floor in accordance with ISO Standard indicated above in Section 3.
2. Noise levels were recorded in a minimum of two manually scanned microphone positions for each tapping machine position in receiver room with an averaging time of 30 seconds for each measurement.
3. The reverberation time of the receiver room was measured in accordance with ISO 3382-2 referenced above.

4.2 Instrumentation

The average sound pressure level was obtained by using a NTi XL3 Sound Level Meter. The measured noise levels were filtered simultaneously in all one-third octave frequency bands in real time. These values were recorded and subsequently statistically analysed to determine the average sound pressure levels for each room and to indicate the precision of the measurements.

The Sound Level Meter has current NATA certification and was checked before and after the measurement for calibration using a Bruel and Kjaer Type 4231 Calibrator. The sound level meter conforms to a Type 1 instrument as defined in IEC 651 - 1979 'Sound Level Meters'. No significant drift in calibration was noted.

5 Test Results

The results of the impact sound insulation tests are compared with the acoustic requirements of the current NCC in Table 1 below.

Table 1. Summary of test results and comparison with NCC

Test No.	Floor/Ceiling System Tested	Measured Sound Insulation Ratings	NCC Sound Insulation Requirement	Comply with NCC?
Impact Sound Insulation Tests				
1	<u>Floor finish in Open-plan office of Unit 4:</u> Bare 180mm concrete slab. <u>Ceiling beneath in Meeting room:</u> Standard mineral fibre ceiling tiles suspended 400mm beneath slab soffit.	$L'_{nT,w} = 59$	$L'_{nT,w} \leq 62$	Yes
2	<u>Floor finish in Open-plan office of Unit 4:</u> A sample of Inspired Floorcoverings Aura Range carpet tile adhered to existing 180mm concrete slab floor. The Aura Range specification is: <i>Yarn System: 100% Solution Dyed Yarn</i> <i>Construction: High Low Loop</i> <i>Pile Weight: 20.5 Oz (580gram)</i> <i>Pile Height: 5.5mm</i> <i>Total Thickness: 10mm</i> <i>Gauge: 1/12</i> <u>Ceiling beneath in Meeting room of Unit 4:</u> Standard mineral fibre ceiling tiles suspended 400mm beneath slab soffit.	$L'_{nT,w} = 41$	$L'_{nT,w} \leq 62$	Yes
Impact Sound Reduction ¹ of the Aura Range carpet tile		$\Delta L_w = 18 \text{ dB}$		

Notes:

1. Impact Sound Reduction = Bare slab $L'_{nT,w}$ minus Carpet tile $L'_{nT,w}$

Copy of the test certificates are attached in APPENDIX A.

6 Conclusion

Renzo Tonin & Associates have completed acoustic testing of a sample of the Aura Range carpet tile at Unit 4, 31-33 Chaplin Drive, Lane Cove West. The Aura Range carpet tile achieved an impact sound insulation rating $L'_{nT,w}$ of 41 which comply with the National Construction Code requirement of $L'_{nT,w} \leq 62$ and an Impact sound reduction ΔL_w of 18dB.

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Authorised
09.10.2026	Prepare test report & certificate	-	0	T. Wong	T. Wong

File Path: R:\AssocSydProjects\TL201-TL250\TL238 tw Inspired Floorcovering, Glenmore Park\T5 Lane Cove\1 Docs\TL238-05F01 Carpet Tile Floor Impact Test - Aura Range (r0).docx

Important Disclaimers:

The work presented in this document was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian/New Zealand Standard AS/NZS ISO 9001.

This document is issued subject to review and authorisation by the suitably qualified and experienced person named in the last column above. If no name appears, this document shall be considered as preliminary or draft only and no reliance shall be placed upon it other than for information to be verified later.

This document is prepared for the particular requirements of our Client referred to above in the 'Document details' which are based on a specific brief with limitations as agreed to with the Client. It is not intended for and should not be relied upon by a third party and no responsibility is undertaken to any third party without prior consent provided by Renzo Tonin & Associates. The information herein should not be reproduced, presented or reviewed except in full. Prior to passing on to a third party, the Client is to fully inform the third party of the specific brief and limitations associated with the commission.

In preparing this report, we have relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

We have derived data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination and re-evaluation of the data, findings, observations and conclusions expressed in this report.

We have prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

The information contained herein is for the purpose of acoustics only. No claims are made and no liability is accepted in respect of design and construction issues falling outside of the specialist field of acoustics engineering including and not limited to structural integrity, fire rating, architectural buildability and fit-for-purpose, waterproofing and the like. Supplementary professional advice should be sought in respect of these issues.

External cladding disclaimer: No claims are made and no liability is accepted in respect of any external wall and/or roof systems (eg facade / cladding materials, insulation etc) that are: (a) not compliant with or do not conform to any relevant non-acoustic legislation, regulation, standard, instructions or Building Codes; or (b) installed, applied, specified or utilised in such a manner that is not compliant with or does not conform to any relevant non-acoustic legislation, regulation, standard, instructions or Building Codes.

APPENDIX A Field Test Certificates

Standardized impact sound pressure levels in accordance with ISO 16283-2 Field measurements of impact sound insulation of floors using the tapping machine		 RENZO TONIN & ASSOCIATES																																												
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<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Frequency f Hz</th> <th>L'_{nT} 1/3 octave dB</th> </tr> </thead> <tbody> <tr><td>50</td><td>51.3</td></tr> <tr><td>63</td><td>60.0</td></tr> <tr><td>80</td><td>52.6</td></tr> <tr><td>100</td><td>55.2</td></tr> <tr><td>125</td><td>57.8</td></tr> <tr><td>160</td><td>57.4</td></tr> <tr><td>200</td><td>49.7</td></tr> <tr><td>250</td><td>50.1</td></tr> <tr><td>315</td><td>46.8</td></tr> <tr><td>400</td><td>51.0</td></tr> <tr><td>500</td><td>53.4</td></tr> <tr><td>630</td><td>57.7</td></tr> <tr><td>800</td><td>52.9</td></tr> <tr><td>1000</td><td>52.9</td></tr> <tr><td>1250</td><td>54.7</td></tr> <tr><td>1600</td><td>53.8</td></tr> <tr><td>2000</td><td>52.4</td></tr> <tr><td>2500</td><td>52.5</td></tr> <tr><td>3150</td><td>51.7</td></tr> <tr><td>4000</td><td>49.4</td></tr> <tr><td>5000</td><td>47.3</td></tr> </tbody> </table>	Frequency f Hz	L' _{nT} 1/3 octave dB	50	51.3	63	60.0	80	52.6	100	55.2	125	57.8	160	57.4	200	49.7	250	50.1	315	46.8	400	51.0	500	53.4	630	57.7	800	52.9	1000	52.9	1250	54.7	1600	53.8	2000	52.4	2500	52.5	3150	51.7	4000	49.4	5000	47.3		
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Report No.:	TL238-05	Name: Tony Wong																																												
Date:		Signature:																																												

Standardized impact sound pressure levels in accordance with ISO 16283-2
Field measurements of impact sound insulation of floors using the tapping machine



Client: Inspired Floorcoverings
 Location: Unit 4, 31-33 Chaplin Drive, Lane Cove West

Date of test: 8/10/2026

Floor finish in Open-plan office of Unit 4:
 A sample of Inspired Floorcoverings Aura Range carpet tile
 adhered to existing 180mm concrete slab floor.

Ceiling beneath in Meeting room of Unit 4:
 Standard mineral fibre ceiling tiles suspended 400mm beneath
 slab soffit.

Sound Level Meter: A3A-00528-D1 (M2230: 11255)

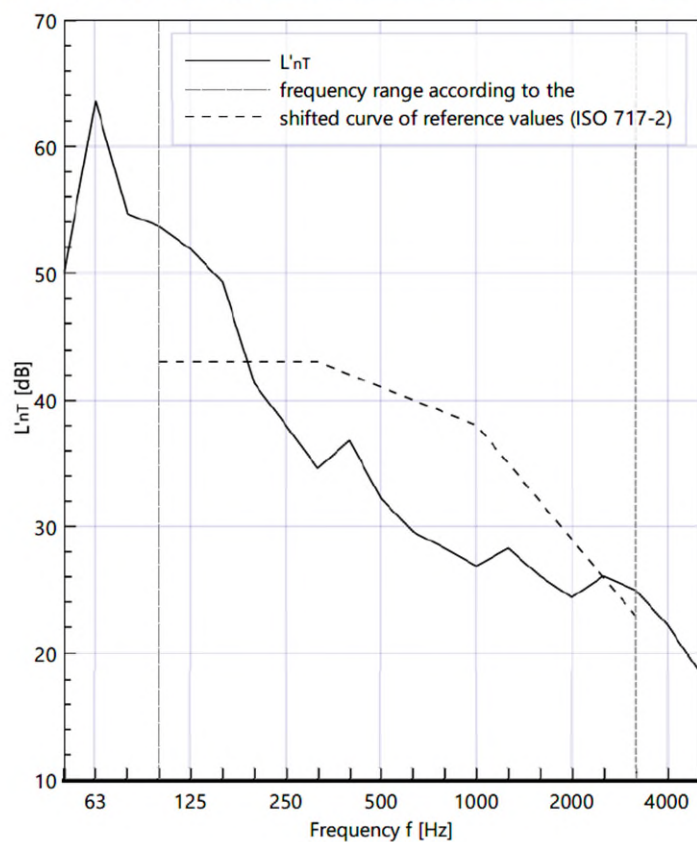
Transmission direction: Vertical

Source room volume: Unit 4 Open-Plan Upper Floor

Receiving room volume: 76.00 m³ (Unit 4 Meeting Room Lower Floor)



Frequency f Hz	L' _{nT} 1/3 octave dB
50	49.9
63	63.6
80	54.7
100	53.7
125	51.9
160	49.3
200	41.3
250	38.0
315	34.6
400	36.8
500	32.2
630	29.6
800	28.3
1000	26.9
1250	28.3
1600	26.1
2000	24.4
2500	26.1
3150	25.0
4000	22.3
5000	18.6



Rating in accordance with ISO 717-2:

L'_{nT,w}(C_I) = 41 (1) dB

C_{I,50-2500} = 9 dB

Evaluation based on field measurement using results obtained by an engineering method.

Report No.: TL238-05

Name: Tony Wong

Date:

Signature: