

5.0 MEASURED RESULTS AND ANALYSIS

The results of the acoustic tests are tabulated below. Comprehensive measurement and analysis data are presented as an Appendix to this report.

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Measurement location	$L'_{nT,w}$	AAAC Star Rating	FIIC
Test 00: ECFS – for comparative purposes only	$L'_{nT,w}$ 56	2	50
Test 01: 7 mm Terracore Hybrid A7 floorboards over ECFS	$L'_{nT,w}$ 40	6	66

Detailed calculations of the partition system impact noise insulation (ceiling/floor) are attached as **Appendix A**.

The following is also noted:

1. The acoustic ratings provided in this report are indicative and for comparative purposes only.
2. All floor testing samples were conducted on the existing sub-base detailed in this report.
3. The lower the rating number, the better the acoustic performance for L'_{nTw} ratings.
4. The relation between Field Impact Insulation Class (FIIC) and Impact Insulation Class (IIC) can be described by the formula $FIIC + 5 = IIC$.
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8. Product installation details and methodologies must be sought from product suppliers, installers, or other experts. Koikas Acoustics is not liable for any product defects.



Standardised impact sound pressure level according to ISO 16283-2

Field measurements of impact sound insulation of floors

Client : Artifloor
Test site: Residential Unit in Forest Lodge

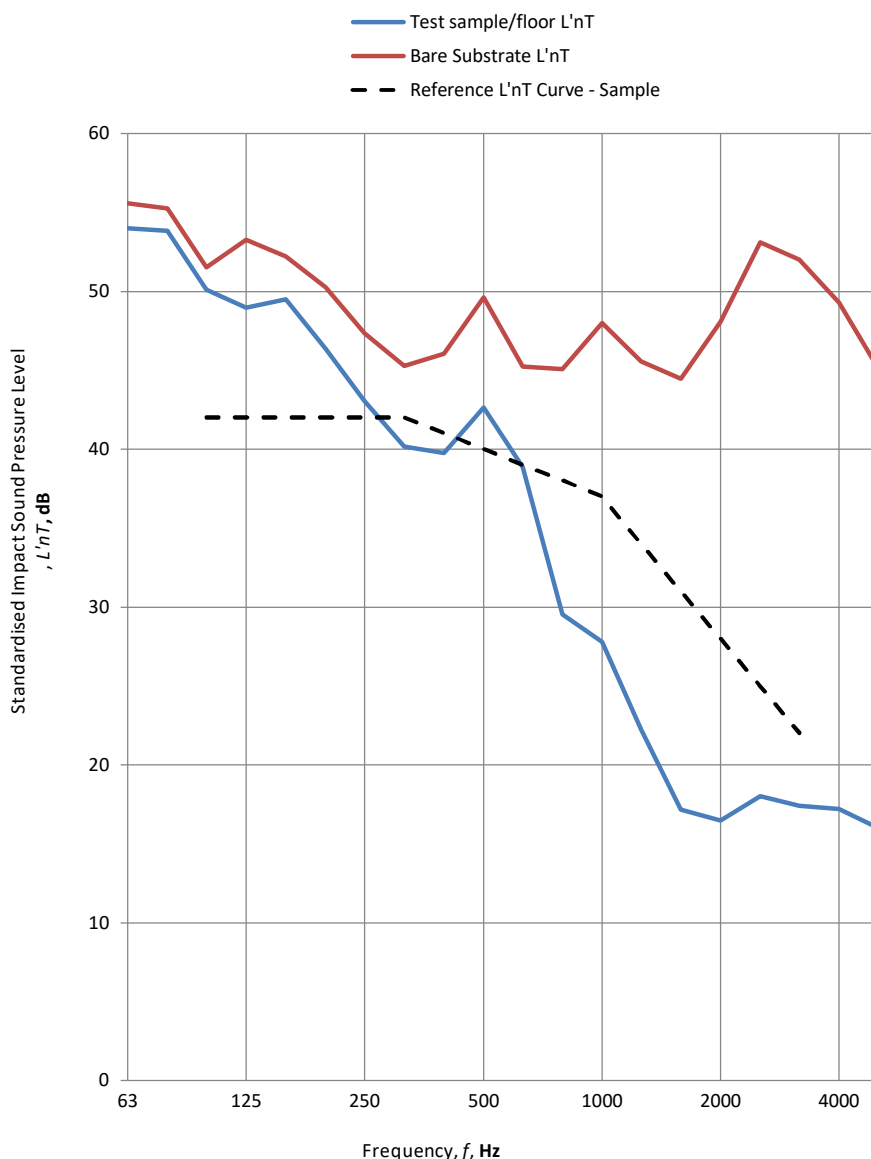
Date of Test : Friday, 2 October 2026

Description and identification of the building construction and test arrangements, direction of measurement :

Test 01: 7 mm Terracore Hybrid A7 flooring

Receiving room volume : 77.22

Frequency f Hz	L'nT Test sample dB	Bare L'nT dB substrate dB
50	50.1	51.1
63	54.0	55.6
80	53.9	55.3
100	50.1	51.5
125	49.0	53.3
160	49.5	52.2
200	46.4	50.3
250	43.1	47.4
315	40.2	45.3
400	39.8	46.1
500	42.6	49.6
630	38.9	45.3
800	29.5	45.1
1 000	27.8	48.0
1 250	22.3	45.6
1 600	17.2	44.5
2 000	16.5	48.1
2 500	18.0	53.1
3 150	17.4	52.0
4 000	17.2	49.3
5 000	16.0	45.1
L_{nT,w}	40	56
C_i	1	-10
L_{nT,w} + C_i	41	46
$\Delta L_{nT,w}$	16	
FIIC	66	50
AAAC Star	6 Star	2 Star



Rating according to ISO 717-2

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

Project No. : 7431

Issue Date : Tuesday, 6 October 2026

Testing organisation : Koikas Acoustics Pty Ltd

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ACOUSTICAL REPORT

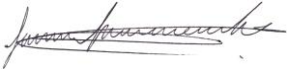
IMPACT SOUND INSULATION

ARTIFLOOR

Date: 9 October 2026

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Client	Artifloor Attention: Jay Seo Email: jay@artifloor.com.au		

The information contained herein should not be reproduced except in full. The information provided in this report relates to acoustic matters only. Supplementary advice should be sought for other matters relating to construction, design, structural, fire-rating, waterproofing, and the like.



ACOUSTICAL REPORT
IMPACT SOUND INSULATION
ARTIFLOOR

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1.0 INTRODUCTION

Koikas Acoustics Pty Ltd was requested by Artifloor to conduct impact noise testing on the following flooring system:

- Test 01: 7 mm Terracore Hybrid A7 floorboards.

A total of (2) two tests were undertaken, which included the base ceiling/floor system of a concrete slab.

The purpose of undertaking these impact noise tests was to quantify the acoustic performance of the flooring systems.

Test results were compared to the acoustic requirements of the BCA (*Building Code of Australia*) and the standards prescribed by the Association of Australasian Acoustical Consultants (AAAC)

All measurements were carried out as per the guidelines and procedures outlined in:

- *ISO 16283-2:2020 Acoustics - Field measurement of sound insulation in buildings and of building elements - Part 2: Impact sound insulation*

The rating was determined as per

- *AS ISO 717.2-2004 "Rating of sound insulation in buildings and of building elements".*



2.0 TEST LOCATION AND CONDITIONS

2.1 SITE ADDRESS

The following impact noise tests were undertaken:

- The furnished dining/living room of the upper floor (the source room), and
- The furnished dining/living room of the lower floor (the receiver room)

of a residential apartment building in the suburb of Forest Lodge on Friday, 2nd October, 2026.

2.2 SUB-BASE AND FLOORING SYSTEM

Koikas Acoustics has been advised that the common ceiling/floor system of the subject residential unit is constructed of approximately 200 mm thick concrete slab with a suspended ceiling. Hereafter referred to as the “*existing ceiling/floor system (ECFS)*”.

2.3 TESTING SAMPLES

The tests were conducted on the ECFS described in Section 2.2 of this report with the following floor covering and underlay samples:

- Test 00: ECFS (bare concrete) – *for comparison purposes only*
- Test 01: 7 mm Terracore Hybrid A7 floorboard.



3.0 IMPACT NOISE RATING CRITERIA

3.1 BCA 2022 AMDT 2

Regarding the current BCA 2022 AMDT 2, A floor in a Class 2 or Class 3 building must have a weighted standardised impact sound pressure level (L'_{nTw}), not more than 62, determined under AS/ISO 717.2 if it separates sole-occupancy units.

3.2 AAAC STAR RATING SYSTEM

Furthermore, in the Association of Australian Acoustical Consultants (AAAC) Guideline for Apartment and Townhouse Acoustic Ratings, the following Table (Section C) describes the acoustic ratings concerning the Star Rating System as listed in Table 1 below.

Table 1. Star Rating Requirements for Inter-tenancy Activities – Published by the AAAC					
INTER-TENANCY ACTIVITIES	2 Star	3 Star	4 Star	5 Star	6 Star
(c) Impact isolation of floors					
- Between tenancies $L_{nTw} \leq$	65	55	50	45	40
- Between all other spaces & tenancies $L_{nTw} \leq$	65	55	50	45	40

Note: Koikas Acoustics is of the understanding that the impact noise ratings in Table 1 refer to L'_{nTw} and not L_{nTw} . L_{nTw} is an impact noise rating derived from tests undertaken in a laboratory, and L'_{nTw} is derived from field tests.



4.0 ASSESSMENT/TESTING PROCEDURES

4.1 PARTITION TESTING

4.1.1 Generation of the sound field in the source room

The sound field was generated by a NTEK TPM Pro tapping machine situated in the source room on the specific floor under test. Several measurement positions on each floor were tested as required by the standard.

4.1.2 Receiving space measurement

Impact noise levels were recorded in the receiving space with an NTi Audio XL2 spectrum analyser sound level meter. The spatial-averaging method of measurement was employed for impact noise tests with relevant traverse durations and minimum distances to reflectors and boundary walls observed.

4.1.3 Reverberation time and background noise

Additional measurements were taken of the background noise (L_b) and reverberation time (T). The background noise measurement was used to ensure that existing ambient noise did not influence the internal noise measurement. The reverberation time was used to calculate the amount of absorption (A) in the receiving room so that the measurement can be standardised to a reference reverberation time of 0.5 seconds.



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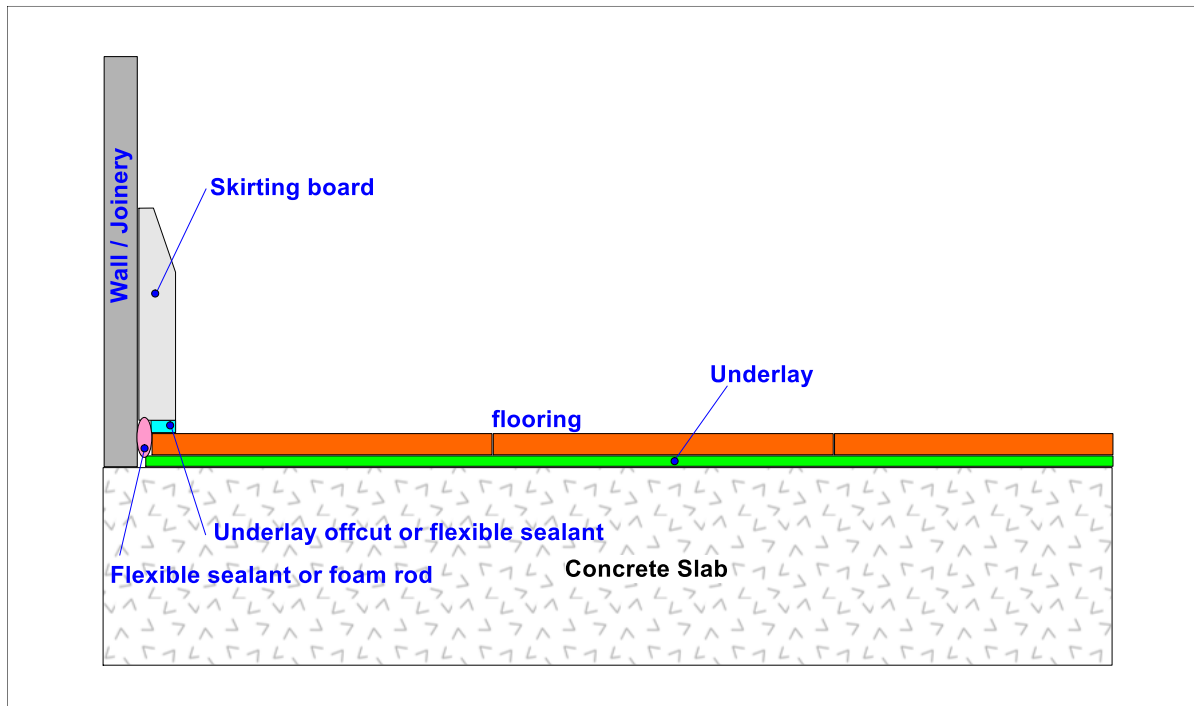


Figure 1. Wall / Joinery details (skirting board)

6.0 CONCLUSION

Koikas Acoustics was requested by Artifloor to undertake impact noise testing of their 7 mm Terracore Hybrid A7 floorboards. The acoustic performances of the flooring systems were calculated and compared against the current BCA 2022 AMDT 2 and AAAC star ratings commonly used in Australia.

The calculated acoustic ratings of the tested flooring systems are summarised and presented in Table 2 of this report. A detailed graphical presentation of the acoustic performance of the tested flooring is attached as **Appendix A**. This report should be reproduced in full, including the attached Appendix.

The acoustic ratings provided in this report are indicative of the acoustical impact rating performance. Acoustic ratings will vary depending on the testing environment/conditions, including materials/structures of the existing ceiling/floor system, room volume, internal layout and workmanship. Even with the same testing environment/conditions, acoustic ratings can vary from building to building.

It is recommended that in-situ testing be conducted before any full fit-out, as the sub-base ceiling/floor system and the wall junctions could impact the noise transfer to the unit below

Floor coverings must not make contact with any walls or joineries (kitchen benches, cupboards, etc.). Hard floor coverings must not touch the walls, and/or joineries and skirtings attached to the wall must not touch the flooring. Gaps should be filled with a suitable mastic-type sealant. Acoustic ratings will be degraded if the above precautions and treatments are not implemented.



APPENDIX A

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A**

APPENDIX A

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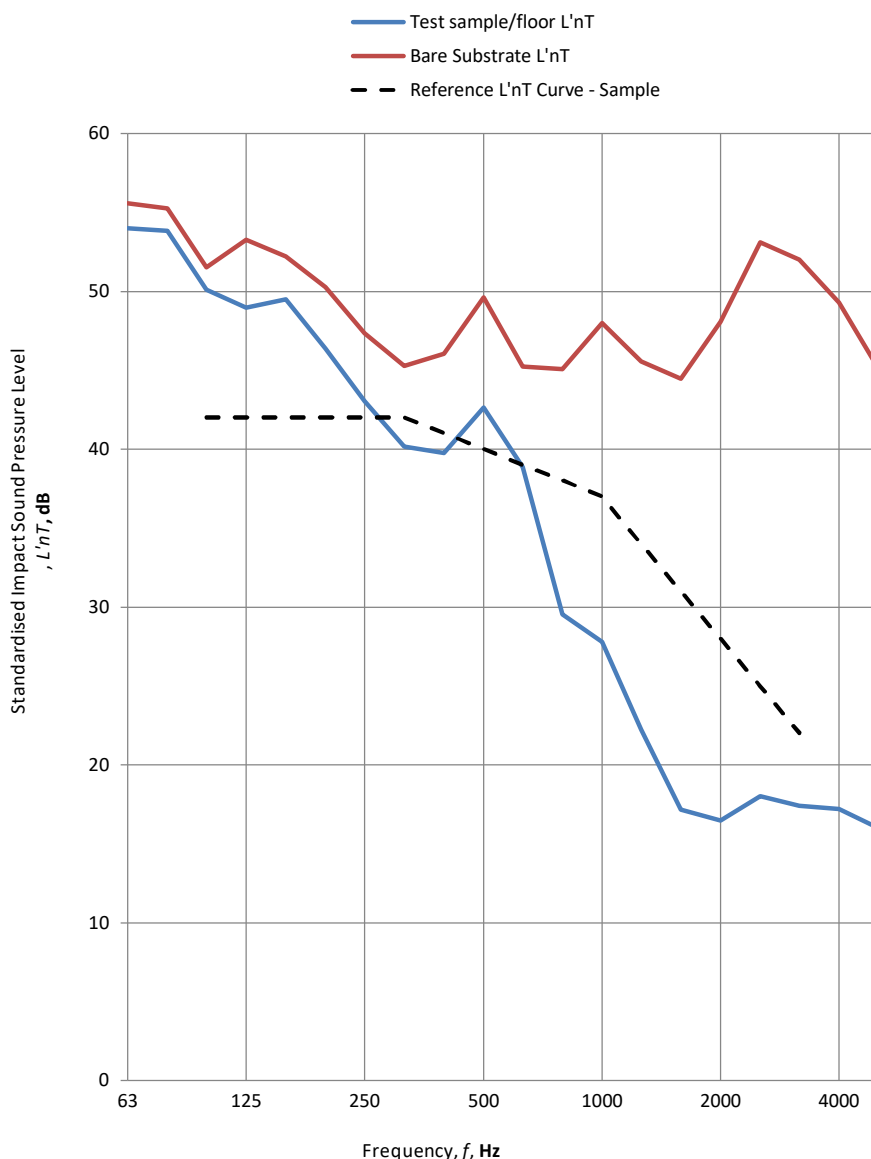
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