

Aquis Comfort Acoustic Flooring (5mm) Acoustic Report



Acoustics
Vibration
Structural Dynamics

19 May 2025

ME599-02F04 Acoustic Report (r0) - Opinion 1.docx

UB Trading

Phillip Perak

13 Kirkton Place, Edensor Park, NSW, 2176

From: Samuel Gewargis [samuel.gewargis@renzotonin.com.au]

Aquis Comfort Acoustic Flooring (5mm) - Acoustic Report

Renzo Tonin & Associates was engaged by UB Trading to provide an acoustic report on the predicted weighted normalised impact sound pressure level ($L_{n,w}$) performance of the Aquis Comfort Acoustic Flooring (5mm), with respect to 'AAAC Guideline for Apartment and Townhouse Acoustic Rating', and predictions of performance on a concrete slab of varying thicknesses and typical floor and ceiling configurations. Further, the predictions were compared to the 'National Construction Code' (NCC), which has the following requirements for sound transmission through floors:

NCC Airborne:	$R_w + C_{tr}$ not less than 50 when determined under AS/NZS ISO 717.1
NCC Impact:	$L_{n,w}$ not more than 62 when determined under AS/NZS ISO 717.2

Table 1 presents details of the respective AAAC star rating levels applicable to floors.

Table 1: AAAC Guideline star rating requirements for inter-tenancy sound insulation

Occupancy	Requirement	2 star	3 star	4 star	5 star	6 star
Airborne sound insulation for walls and floors ¹						
Between tenancies	$R_w + C_{tr} \geq$	40	45	50	55	60
Impact isolation of floors						
Between tenancies	$L_{n,w} \leq$	65	55	50	45	40

Notes: Association of Australian Acoustic Consultants (AAAC) "Guideline for Apartment and Townhouse Acoustic Rating (Version 1.0)".

The above colour formatting is only for visual purposes and ease of communication.

- Presented in terms of $D_{nTw} + C_{tr}$ in the AAAC star rating document, however this has been converted to $R_w + C_{tr}$ in this document for simplicity. It is commonly accepted that $D_{nTw} + C_{tr}$ is 5dB less than $R_w + C_{tr}$.
- Presented in terms of L_{nTw} in the AAAC star rating document, however this has been converted to $L_{n,w}$ in this document for simplicity. It is commonly accepted that L_{nTw} is approximately equal to $L_{n,w}$.



Melbourne Sydney Brisbane Gold Coast Kuwait Singapore
Renzo Tonin & Associates ABN 30 117 463 297
Level 2, 7 Meaden Street, Southbank VIC 3006
P (03) 9690 6005 melbourne@renzotonin.com.au www.renzotonin.com.au



Proudly imported by UB Trading Pty Ltd.
For further information please visit: www.ubtrading.com.au
Contact: info@ubtrading.com.au

Aquis Comfort Acoustic Flooring (5mm) Acoustic Report



RENZO TONIN & ASSOCIATES

19 MAY 2025

In summary Aquis Comfort Acoustic Flooring (5mm) may be installed in floor ceiling configurations to achieve AAAC Guideline 5 and 6 star performance, and achieve National Construction Code conformance with respect to acoustics (except where noted).

Renzo Tonin & Associates conducted impact testing of the sample, with the impact sound insulation test reports presented in ME599-02F01 (r0).

Table 2 presents typical floor-ceiling construction scenarios and expected airborne and impact sound insulation performance with respect to NCC requirements and AAAC star ratings.

Table 2: Aquis Comfort Acoustic Flooring (5mm)- predicted performance in typical constructions

ID	Description	Sound insulation performance	Compliance with NCC criterion?	AAAC star rating
1	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 200mm thick concrete slab 13mm standard plasterboard suspended on a light ceiling grid suspended on resilient mounts with minimum 200mm cavity and 50mm thick 11kg/m3 glass wool insulation	Airborne: $R_W + C_{tr} \geq 60$ Impact: $L_{n,w} \leq 42$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✓	6-star ★★★★★★ 5-star ★★★★★
2	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 200mm thick concrete slab 13mm standard plasterboard suspended on a light ceiling grid with minimum 200mm cavity and 50mm thick 11kg/m3 glass wool insulation	Airborne: $R_W + C_{tr} \geq 60$ Impact: $L_{n,w} \leq 44$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✓	6-star ★★★★★★ 5-star ★★★★★
3	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 200mm thick concrete slab 13mm standard plasterboard suspended on a light ceiling grid with minimum 200mm cavity (no insulation)	Airborne: $R_W + C_{tr} \geq 56$ Impact: $L_{n,w} \leq 53$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✓	5-star ★★★★★ 3-star ★★★
4	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 200mm thick concrete slab - No ceiling and no insulation	Airborne: $R_W + C_{tr} \geq 50$ Impact: $L_{n,w} \leq 64$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✗ does not meet NCC	4-star ★★★★★ N/A
5	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 150mm thick concrete slab 13mm standard plasterboard suspended on a light ceiling grid with minimum 200mm cavity and 50mm thick 11kg/m3 glass wool insulation	Airborne: $R_W + C_{tr} \geq 57$ Impact: $L_{n,w} \leq 47$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✓	6-star ★★★★★★ 4-star ★★★★★
6	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 150mm thick concrete slab 13mm standard plasterboard suspended on a light ceiling grid with minimum 200mm cavity (no insulation)	Airborne: $R_W + C_{tr} \geq 54$ Impact: $L_{n,w} \leq 56$	Airborne $R_W + C_{tr} \geq 50$: ✓ Impact $L_{n,w} \leq 62$: ✓	4-star ★★★★★ 2-star ★★

Aquis Comfort Acoustic Flooring (5mm) Acoustic Report



RENZO TONIN & ASSOCIATES

19 MAY 2025

ID	Description	Sound insulation performance	Compliance with NCC criterion?	AAAC star rating
7	- Aquis Comfort Acoustic Flooring (5mm) in floating configuration 150mm thick concrete slab - No ceiling and no insulation	Airborne: $R_W + C_{tr} \geq 48$ Impact: $L_{n,w} \leq 67$	Airborne $R_W + C_{tr} \geq 50$: ✗ does not meet NCC Impact $L_{n,w} \leq 62$: ✗ does not meet NCC	3-star ★★★ N/A

Notes: The expected performances have regard to the assumptions that the consultant can be reasonably expected to make in accordance with professional industry practice and on the assumption that the consultant is exercising the level of skill, care and attention required of a consultant practicing in their professional industry. It is generally expected that the estimated performance to within $\pm 3\text{dB}$ of the on-site performance. To obtain a more accurate indication of performance, we recommend that the systems are laboratory tested. Installation sealing, and any adhesion of floor-ceiling systems must be in strict accordance with manufacturers best practice recommendations for each respective system component to target the predicted performances.

Aquis Comfort Acoustic Flooring (5mm) Acoustic Report



RENZO TONIN & ASSOCIATES

19 MAY 2025

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Reviewed / Authorised
19.05.2025	Issued	-	0	S. Gewargis	N. Peters	N. Peters

File Path: ME599-02F04 Acoustic Report (r0) - Opinion 1.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: 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.



Proudly imported by UB Trading Pty Ltd.

For further information please visit: www.ubtrading.com.au

Contact: info@ubtrading.com.au

Aquis Comfort Acoustic Flooring (5mm) Acoustic Report



RENZO TONIN & ASSOCIATES

19 MAY 2025

APPENDIX A Glossary of terminology

The following is a brief description of the technical terms used to describe noise to assist in understanding the technical issues presented.

Decibel [dB]	The units that sound is measured in. The following are examples of the decibel readings of every day sounds: 0dB The faintest sound we can hear 30dB A quiet library or in a quiet location in the country 45dB Typical office space. Ambience in the city at night 60dB CBD mall at lunch time 70dB The sound of a car passing on the street 80dB Loud music played at home 90dB The sound of a truck passing on the street 100dB The sound of a rock band 120dB Deafening
Ln,w	Weighted Normalised Impact Sound Pressure Level A measure of the sound level transmitted from impacts on a floor to a tenancy below. It is measured in very controlled conditions in a laboratory and is characterised by how much sound reaches the receiving room from a standard tapping machine. A lower value indicates a better performing floor.
LnT,w	Weighted Standardised Field Impact Sound Pressure Level As for Ln,w but measured in-situ and therefore subject to the inherent accuracies involved in such a measurement. The equivalent measurement in a laboratory is the Ln,w. A lower value indicates a better performing floor.
Ctr	Spectrum Adaptation Term for the sound reduction index. A value used to modify the measured sound insulation performance of a wall or floor measured in terms of the Rw or the DnT,w so as to more accurately account for low frequency noise transmission from the sound of modern stereo systems. The value is defined in ISO 717-1 which also sets out the test methodology for measuring the sound insulation properties of building elements. The Ctr of a building element varies according to its physical properties. For example, a 90mm cavity brick masonry wall as a Ctr value of -6, as does a wall constructed of 150mm core-filled concrete blocks. By contrast, a brick veneer wall might have a Ctr of -12. The value is added to the Rw or DnT,w. with positive Ctr values being more favourable.
DnT,w	Weighted Standardised Field Level Difference A measure of sound insulation performance of a building element. It is characterised by the difference in noise level on each side of a wall or floor. It is measured in-situ. It is a field measurement that relates to the Rw laboratory measured value but is not equal to it because an in-situ space is not of the same quality as a laboratory space. The value is indicative of the level of speech privacy between spaces. The higher its value the better the insulation performance.
Rw	Weighted Sound Reduction Index A measure of the sound insulation performance of a building element. It is measured in very controlled conditions in a laboratory. The term supersedes the value STC which was used in older versions of the Building Code of Australia. Rw is measured and calculated using the procedure in ISO 717-1. The related field measurement is the DnT,w. The higher the value the better the acoustic performance of the building element.