AVANTI Acoustics

Hear the Difference

Whether it's multi-residential or commercial projects, AVANTI delivers comfort, compliance, and quiet confidence - all without compromising on design versatility or everyday practicality.

Engineered for builders, developers, and architects seeking NCC compliance alongside real cost and time efficiencies.

Cut costs, not corners. Fewer layers, faster installs - more projects, more profit.

From testing lab to real life, AVANTI delivers proven quiet performance. Independent testing confirms 5–6 Star AAAC ratings across a range of concrete slabs, outperforming NCC impact sound requirements (Ln,w ≤ 62 dB).

See independent acoustic predictions:

AAAC star rating system for impact sound insulation between tenancies		
National Construction Code (NCC) requirement:		**≤62dB Ln,w**
Normal speech audibility	**dB Ln,w**	**AAAC Star rating**
Audible	65 -56	2 Star ★★
Just Audible	55 - 51	3 Star ★★★
Not Audible	50 - 46	4 Star ★★★★
Not Audible	45 - 41	5 Star ★★★★★
Not Audible	≤ 40	6 Star ★★★★★★

Acoustic Prediction Table**	**Pavimento Avanti 4.5mm** without underlay			**Pavimento Avanti 4.5 mm** with 3 mm acoustic underlay		
	dB Ln,w Star Rating IIC dB					
Subfloor Thickness	**180mm Concrete**	**200mm Concrete**	**250mm Concrete**	**180mm Concrete**	**200mm Concrete**	**250mm Concrete**
13mm Plasterboard, 200mm cavity*, suspended light steel grid with resilient mounts	47 ★★★★ IIC 63	45 ★★★★★ IIC 65	43 ★★★★★ IIC 67	40 ★★★★★★ IIC 70	39 ★★★★★★ IIC 71	37 ★★★★★★ IIC 73
1 x 13mm Plasterboard, 200mm cavity*, suspended light steel grid	51 ★★★ IIC 59	49 ★★★★ IIC 61	46 ★★★★ IIC 64	42 ★★★★★★ IIC 68	41 ★★★★★★ IIC 69	39 ★★★★★★ IIC 71
1 x 13mm Plasterboard, 100mm cavity*, suspended light steel grid	53 ★★★ IIC 57	51 ★★★ IIC 59	49 ★★★★ IIC 61	46 ★★★★ IIC 64	45 ★★★★★ IIC 65	43 ★★★★★ IIC 67
No Plasterboard	72 IIC 38	70 IIC 40	67 IIC 43	60 ★★ IIC 50	59 ★★ IIC 51	57 ★★ IIC 53

Does not meet NCC	Meets NCC	Exceeds NCC

* Insulation in cavity
** Results are an indication only

28 October 2025

ME852-01F102 Pavimento Avanti on Regupol 3 - Opinion (r0).docx

From: Rick Huynh [rick.huynh@renzotonin.com.au]

Pavimento Avanti (4.5mm) on 3mm Regupol Sonus Multi 3 - Acoustic Opinion

Renzo Tonin & Associates was engaged by Karndean Flooring to provide an acoustic report on the predicted weighted normalised impact sound pressure level ($L_{n,w}$) performance of the Pavimento Avanti (4.5mm) on 3mm Regupol Sonus Multi 3, 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 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 ★★★★★★
Impact isolation of floors						
Between tenancies	$L_{n,w}$ ≤	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 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 $L_{nT,w}$ is approximately equal to $L_{n,w}$.

Renzo Tonin & Associates conducted impact sound isolation testing of the sample, with results presented in report ME852-01F000.

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

Table 2: Pavimento Avanti (4.5mm) on 3mm Regupol Sonus Multi 3 – $L_{n,w}$ predicted performance in various constructions

Ceiling configuration	Insulation in Cavity*	120mm Concrete	150mm Concrete	180mm Concrete	200mm Concrete	250mm Concrete
		$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating
13mm Plasterboard 200mm cavity	Yes	43 dB (IIC 67) ★★★★★	41 dB (IIC 69) ★★★★★	40 dB (IIC 70) ★★★★★★	39 dB (IIC 71) ★★★★★★	37 dB (IIC 73) ★★★★★★
suspended light steel grid with resilient mounts	No	57 dB (IIC 53) ★★	54 dB (IIC 56) ★★★	53 dB (IIC 57) ★★★	52 dB (IIC 58) ★★★	51 dB (IIC 59) ★★★
2x 13mm Plasterboard 200mm cavity	Yes	43 dB (IIC 67) ★★★★★	41 dB (IIC 69) ★★★★★	40 dB (IIC 70) ★★★★★★	39 dB (IIC 71) ★★★★★★	37 dB (IIC 73) ★★★★★★
suspended light steel grid	No	53 dB (IIC 57) ★★★	51 dB (IIC 59) ★★★	49 dB (IIC 61) ★★★★	48 dB (IIC 62) ★★★★	47 dB (IIC 63) ★★★★
1x 13mm Plasterboard 200mm cavity	Yes	46 dB (IIC 64) ★★★★	44 dB (IIC 66) ★★★★★	42 dB (IIC 68) ★★★★★	41 dB (IIC 69) ★★★★★	39 dB (IIC 71) ★★★★★★
suspended light steel grid	No	57 dB (IIC 53) ★★	55 dB (IIC 55) ★★★	53 dB (IIC 57) ★★★	52 dB (IIC 58) ★★★	51 dB (IIC 59) ★★★
1x 13mm Plasterboard 100mm cavity	Yes	49 dB (AIC 61) ★★★★	47 dB (AIC 63) ★★★★	46 dB (AIC 64) ★★★★	45 dB (AIC 65) ★★★★★	43 dB (AIC 67) ★★★★★
suspended light steel grid	No	60 dB! (IIC 50) ★★	58 dB (IIC 52) ★★	56 dB (IIC 54) ★★	56 dB (IIC 54) ★★	55 dB (IIC 55) ★★★
1x 10mm Plasterboard 100mm cavity	Yes	50 dB (IIC 60) ★★★★	48 dB (IIC 62) ★★★★	47 dB (IIC 63) ★★★★	46 dB (IIC 64) ★★★★	44 dB (IIC 66) ★★★★★
suspended light steel grid	No	61 dB! (IIC 49) ★★	59 dB! (IIC 51) ★★	57 dB (IIC 53) ★★	57 dB (IIC 53) ★★	56 dB (IIC 54) ★★
No plasterboard	N/A	64 dB! (IIC 46) ★★	62 dB! (IIC 48) ★★	60 dB! (IIC 50) ★★	59 dB (IIC 51) ★★	57 dB (IIC 53) ★★

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 with ± 3dB 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. The above prediction do not take into account site specific conditions: please consult a suitable qualified acoustic consultant (eg.aaac.org.au) for advices in this regard.

* Bulk insulation (e.g. polyester or fibreglass not less than 75mm thick and 11kg/m^3 density; e.g. ≥R1.7)

! Where notated (!) high risk of National Construction Code non-conformance for Sole Occupancy Units (SOU, eg. Apartments), with respect to $R_w + C_{tr}$ or $L_{n,w}$. This is a result of the underlying structure and not necessarily the floor covering. Please do not proceed without acoustic consultant advice.

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Reviewed / Authorised
28.10.2025	Issued	-	0	R. Huynh	N. Peters	N. Peters
File Path: ME852-01F102 Pavimento Avanti on Regupol 3 - Opinion (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.

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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 common sounds in our daytime environment:

threshold of hearing	0 dB	The faintest sound we can hear
	10 dB	Human breathing
almost silent	20 dB	
	30 dB	Quiet bedroom or in a quiet national park location
generally quiet	40 dB	Library
	50 dB	Typical office space or ambience in the city at night
moderately loud	60 dB	CBD mall at lunch time
	70 dB	The sound of a car passing on the street
loud	80 dB	Loud music played at home
	90 dB	The sound of a truck passing on the street
very loud	100 dB	Indoor rock band concert
	110 dB	Operating a chainsaw or jackhammer
extremely loud	120 dB	Jet plane take-off at 100m away
threshold of pain	130 dB	
	140 dB	Military jet take-off at 25m away

$L_{n,w}$	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.
$L_{nT,w}$	Weighted Standardised Field Impact Sound Pressure Level As for $L_{n,w}$ but measured in-situ and therefore subject to the inherent accuracies involved in such a measurement. The equivalent measurement in a laboratory is the $L_{n,w}$. A lower value indicates a better performing floor.

28 October 2025

ME852-01F101 Pavimento Avanti on bare concrete slab - Opinion (r0).docx

Pavimento Avanti (4.5mm) on bare concrete slab - Acoustic Opinion

Renzo Tonin & Associates was engaged by Karndean Flooring to provide an acoustic report on the predicted weighted normalised impact sound pressure level ($L_{n,w}$) performance of the Pavimento Avanti (4.5mm) on bare concrete slab, 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 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 ★★★★★★
Impact isolation of floors						
Between tenancies	$L_{n,w}$ ≤	65	55	50	45	40

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

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Renzo Tonin & Associates conducted impact sound isolation testing of the sample, with results presented in report ME852-01F000.

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

Table 2: Pavimento Avanti (4.5mm) on bare concrete slab – $L_{n,w}$ predicted performance in various constructions

Ceiling configuration	Insulation in Cavity*	120mm Concrete	150mm Concrete	180mm Concrete	200mm Concrete	250mm Concrete
		$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating	$L_{n,w}$ Star Rating
13mm Plasterboard 200mm cavity suspended light steel grid with resilient mounts	Yes	51 dB (IIC 59) ★★★	49 dB (IIC 61) ★★★★	47 dB (IIC 63) ★★★★	45 dB (IIC 65) ★★★★★	43 dB (IIC 67) ★★★★★
	No	61 dB (IIC 49) ★★	58 dB (IIC 52) ★★	57 dB (IIC 53) ★★	56 dB (IIC 54) ★★	55 dB (IIC 55) ★★★
2x 13mm Plasterboard 200mm cavity suspended light steel grid	Yes	56 dB (IIC 54) ★★	53 dB (IIC 57) ★★★	50 dB (IIC 60) ★★★★	49 dB (IIC 61) ★★★★	46 dB (IIC 64) ★★★★
	No	60 dB (IIC 50) ★★	57 dB (IIC 53) ★★	54 dB (IIC 56) ★★★	53 dB (IIC 57) ★★★	52 dB (IIC 58) ★★★
1x 13mm Plasterboard 200mm cavity suspended light steel grid	Yes	56 dB (IIC 54) ★★	53 dB (IIC 57) ★★★	51 dB (IIC 59) ★★★	49 dB (IIC 61) ★★★★	46 dB (IIC 64) ★★★★
	No	62 dB! (IIC 48) ★★	59 dB (IIC 51) ★★	58 dB (IIC 52) ★★	57 dB (IIC 53) ★★	55 dB (IIC 55) ★★★
1x 13mm Plasterboard 100mm cavity suspended light steel grid	Yes	57 dB (AIC 53) ★★	55 dB (AIC 55) ★★★	53 dB (AIC 57) ★★★	51 dB (AIC 59) ★★★	49 dB (AIC 61) ★★★★
	No	65 dB! (IIC 45) ★★	62 dB! (IIC 48) ★★	61 dB! (IIC 49) ★★	60 dB! (IIC 50) ★★	59 dB (IIC 51) ★★
1x 10mm Plasterboard 100mm cavity suspended light steel grid	Yes	57 dB (IIC 53) ★★	54 dB (IIC 56) ★★★	52 dB (IIC 58) ★★★	51 dB (IIC 59) ★★★	49 dB (IIC 61) ★★★★
	No	64 dB! (IIC 46) ★★	62 dB! (IIC 48) ★★	61 dB! (IIC 49) ★★	60 dB! (IIC 50) ★★	59 dB (IIC 51) ★★
No plasterboard	N/A	77 dB! (IIC 33) -	74 dB! (IIC 36) -	72 dB! (IIC 38) -	70 dB! (IIC 40) -	67 dB! (IIC 43) -

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28.10.2025	Issued	-	0	R. Huynh	N. Peters	N. Peters
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