



Addendum to REV A Noise Impact Assessment

Land on Brendon Avenue, Moston, M40 9DN

Client Name: MKenny Properties Limited

April 2023

Project Information

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A	05 April 2023	N.B	AC	AC	Final

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1. Introduction

1.1 Overview

AVAL Consulting Group Limited (ACGL) has been commissioned to carry out a Noise Impact Assessment for the proposed development at Land on Brendon Avenue, Moston, M40 9DN. This report is an addendum to the REV A report issued on 13.01.23

1.2 Objective

The planning process requires evidence that the acoustic performance of the proposed elements will meet the required criteria to ensure that no adverse noise impact will occur, and adequate residential amenity is achieved within the proposed development. The Approved Document E of the Building Regulations 2010 states that the airborne sound insulation $D_{nTw} + C_{tr}$ of floors and walls should achieve a minimum value of 45dB for purpose-built houses, dwellings and flats. The report will also ensure that the proposed glazed elements meet the acoustic requirements depicted in Section 6 of the REV A report (issued on 13.01.23).

1.3 Methodology

The construction layout of the proposed external wall and separating floors (refer to Appendix A) have been used to simulate the acoustic performance of the walls/floors via the INSUL software, which in turn provides an estimation of the sound transmission loss (TL) and Sound Transmission Class (STC) for use in sound insulation calculations, or design of internal partitions etc. The results obtained have been compared to the requirements of Part E of the Building regulations as well as to the particular requirements of the proposed development, which have been determined in Section 6 of the REV A Final Noise Impact Assessment (issued by AVAL on 13.01.23). Based on this comparison, it was determined whether the acoustic performance of the proposed walls and floors is adequate.

Since the results obtained from INSUL are laboratory-based ($R_w + C_{tr}$), the corresponding $D_{ntw} + C_{tr}$ values have been calculated and it was assumed that the maximum volume of the receiving room would be 50m³ with the common surface area of partitions at approximately 12m².

1.4 Results

1.4.1 External Walls

Based on the simulations in Appendix B, it was found that the proposed external wall would perform at a value of $R_w (C;C_{tr}) = 50 (-1;-3)$ dB. The corresponding $D_{ntw} + C_{tr}$ value was evaluated as 46dB.

1.4.2 Separating Floors

Based on the simulations in Appendix B, it was found that the proposed separating floor would perform at a value of $R_w (C;C_{tr}) = 55 (-1;-3)$ dB. The corresponding $D_{ntw} + C_{tr}$ value was evaluated as 51dB.

1.5 Discussion

The results obtained in Section 1.4 of this report suggest that the proposed construction design for the external walls as well as the separating floors of the proposed development abide by the requirements of the Building Regulations 2010. Based on Section 6 of the environmental noise impact assessment carried out by AVAL (REV A report 13.01.23), the acoustic requirements of the external wall as found to be 37dB (based on prevailing L_{eq} and L_{max} noise levels on-site). Therefore, all the acoustic criteria required to ensure residential amenity is being met by the proposed construction design.

The acoustic performance required by the glazed elements have been considered as per Section 6 of AVAL's REV A report (issued on 13.01.23) and it was found that the acoustic performance is readily available on the market. Further details on the choice of the specific glazed element that will form part of the design have been provided in Appendix C.

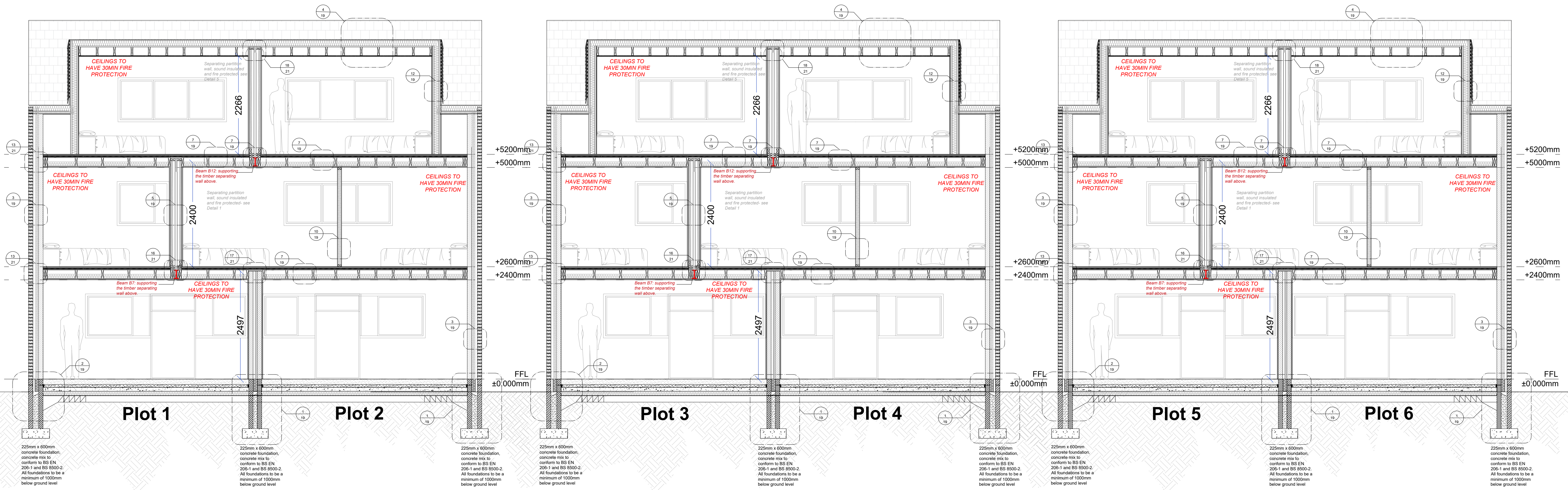
1.6 Conclusion

Based on the findings in this report, it can be concluded that the acoustic performance of the proposed external walls as well as the separating floors within the building will provide the acoustic performance required by the Building Regulations 2010 and would also fulfil the noise criteria required in Section 6 of AVAL's noise impact assessment REV A Final (issued 13.01.23). The proposed glazed elements (See Appendix C) also meet the requirements depicted in the noise impact assessment and it is considered that the current design would provide sufficient attenuation so that there is no adverse noise impact.

Appendices

- Appendix A: Construction Details for Proposed Walls and Floors
- Appendix B: INSUL Simulations
- Appendix C: Proposed Glazed Elements

Appendix A: Construction Details for Proposed Walls and Floors



Proposed Section
Ref A.1- Scale 1:50 @ A1

Notes:

All work is to be carried out to the latest current British standards Codes of Practice and recognised working practices.

All work and materials should comply with Health and Safety legislation.

All dimensions are in millimetres unless where explicitly shown otherwise.

The contractor should check and certify all dimensions as work proceeds and notify the agent of any discrepancies.

Do not scale off the drawings, if in doubt ask.

HAD & Co. are not liable for any work undertaken prior to Full Planning Consent and/or Building Regulations Approval.

CDM REGULATIONS 2015
The client must abide by the Construction Design and Management Regulations 2015. The client must appoint a contractor, if more than one contractor is to be involved, the client will need to appoint (in writing) a principal designer (to plan, manage and coordinate the planning and design work) and a principal contractor (to plan, manage and coordinate the construction and ensure there are arrangements in place for managing and organising the project).

Domestic clients
The domestic client is to appoint a principal designer and a principal contractor when there is more than one contractor; if not your duties will automatically transfer to the contractor or principal contractor.
The designer can take on the duties, provided there is a written agreement between you and the designer to do so.

The Health and Safety Executive is to be notified as soon as possible before construction work starts if the works:
(a) Last longer than 30 working days and has more than 20 workers working simultaneously at any point in the project.
Or
(b) Exceeds 500 person days.

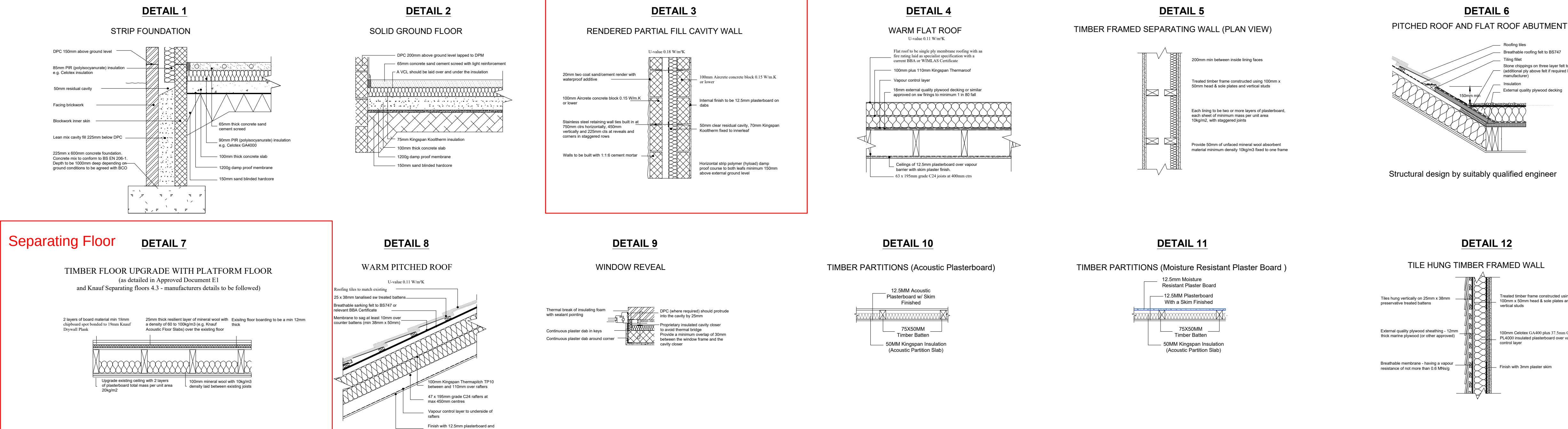
PARTY WALL ACT
The owner, should they need to do so under the requirements of the Party Wall Act 1996, has a duty to serve a Party Structure Notice on any adjoining owner if building work on, to or near an existing Party Wall involves any of the following:
• Support of beam
• Insertion of DPC through wall
• Raising a wall or cutting off projections
• Demolition and rebuilding
• Underpinning
• Insertion of lead flashings
• Excavations within 3 metres of an existing structure where the new foundations will go deeper than adjoining foundations, or within 6 metres of an existing structure where the new foundations are within a 45 degree line of the adjoining foundations.
A Party Wall Agreement is to be in place prior to start of works on site.

THERMAL BRIDGING
Care shall be taken to limit the occurrence of thermal bridging in the insulation layers caused by gaps within the thermal element, (i.e. around windows and door openings). Reasonable provision shall also be made to ensure the extension is constructed to minimise unwanted air leakage through the new building fabric.

MATERIALS AND WORKMANSHIP
All works are to be carried out in a workmanlike manner. All materials and workmanship must comply with Regulation 7 of the Building Regulations, all relevant British Standards, European Standards, Agreement Certificates, Product Certification of Schemes (Kite Marks) etc. Products conforming to a European technical standard or harmonised European product should have a CE marking.

DETAILS 1:20 @ A1

External Wall



Revisions List:

 HAD & Co. www.hadmanchester.co.uk 0161 327 3529	
Address: Brendon Avenue Moston M40 3DN	
Title: Proposed Section and Details	Drawn: HA
Client: Oson Musa	Checked:
Date: 20-10-2022	Page: A1
Drawing No: HAD3412-19	Scale: 1:100
Revision:	

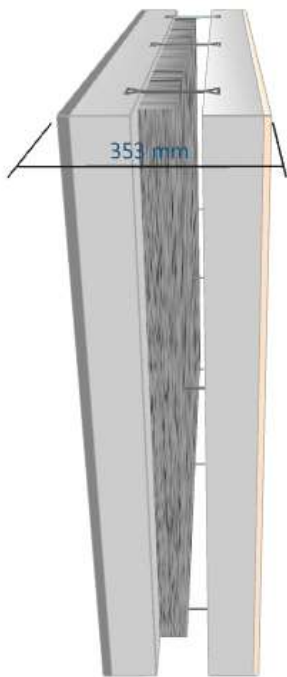
Appendix B: INSUL Simulations

Sound Insulation Prediction (v9.0.24)

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within $R_w \pm 3$ dB
- Key No. 5595
Job Name: Brendon Avenue Project
Job No.: 92071 Initials:N.B
Date:04/04/2023
File Name:External Wall.ixl



Notes:External Wall



Rw 50 dB
C -1 dB
Ctr -3 dB

Mass-air-mass resonant frequency = ≈ 24 Hz

Panel Size = 2.7 m x 4.0 m

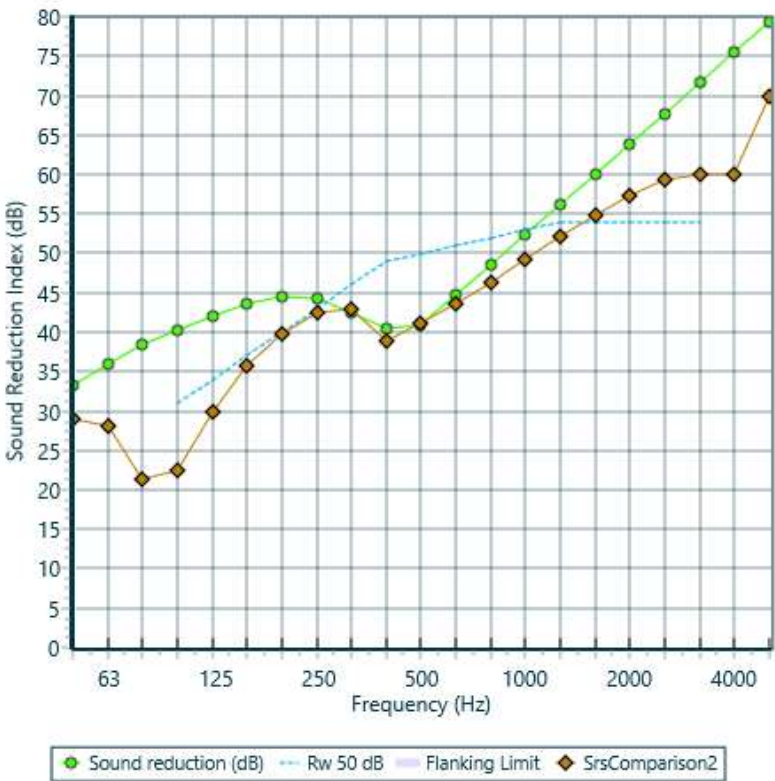
Partition surface mass = 157 kg/m²

System description

Panel 1 : 1 x 20 mm Sand/Cement render (plaster) + 1 x 100 mm Aerated Concrete Block(Copy)

Frame: Butterfly Tie (1.2E2 mm x 45 mm), Stud spacing 600 mm ; Cavity Width 120 mm , 1 x Kingspan Kooltherm Thickness 70 mm
Panel 2 : 1 x 100 mm Aerated Concrete Block(Copy) + 1 x 12.5 mm Plasterboard

freq.(Hz)	R(dB)	R(dB)
50	33	
63	36	35
80	38	
100	40	
125	42	42
160	44	
200	44	
250	44	44
315	43	
400	41	
500	41	42
630	45	
800	49	
1000	52	51
1250	56	
1600	60	
2000	64	63
2500	68	
3150	72	
4000	75	74
5000	79	



Sound Insulation Prediction (v9.0.24)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within $R_w \pm 3$ dB

- Key No. 5595

Job Name: Brendon

Job No.: 92071

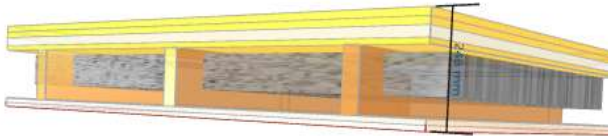
Initials:N.B

Date:04/04/2023

File Name:Separating Floor.ixl



Notes:Separating Floor



R_w 55 dB

C -2 dB

Ctr -7 dB

Mass-air-mass resonant frequency = 36 Hz

Panel Size = 2.7 m x 4.0 m

Partition surface mass = 67.6 kg/m²

System description

Panel 1 : 1 x 18 mm Particle Board
+ 1 x 25 mm Knauf Wallboard 12.5mm

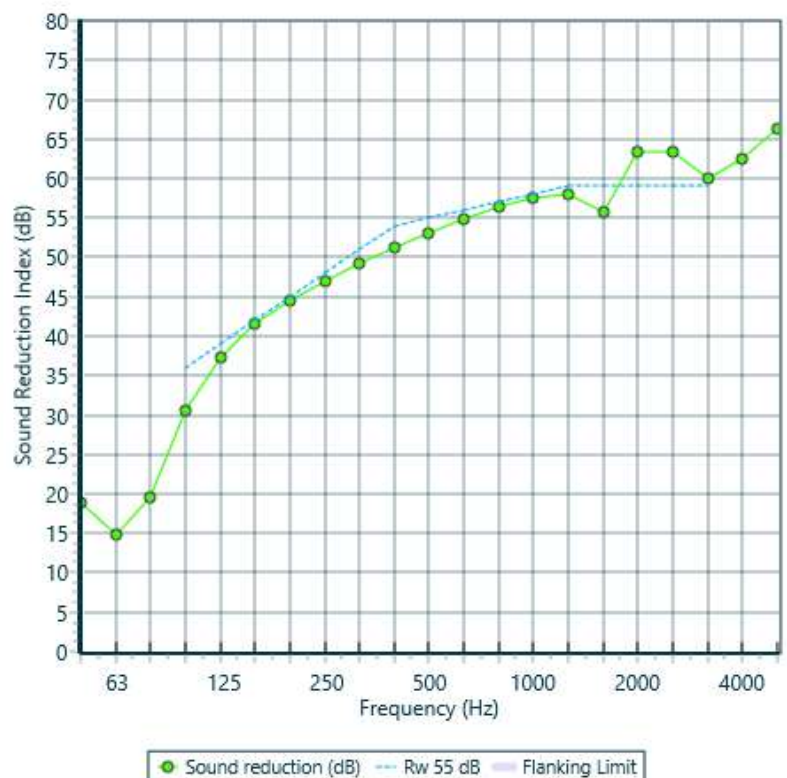
+ 1 x 18 mm Particle Board
+ 1 x 12 mm Flooring Particle Board

Frame: Timber stud (1.5E2 mm x 45 mm), Stud spacing 600 mm; Cavity Width 150 mm, 1 x Rockwool (10kg/m³) Thickness 100 mm

Panel 2 : 1 x 12.5 mm Plasterboard

+ 1 x 12.5 mm Plasterboard

freq.(Hz)	R(dB)	R(dB)
50	19	
63	15	17
80	19	
100	31	
125	37	34
160	42	
200	45	
250	47	47
315	49	
400	51	
500	53	53
630	55	
800	56	
1000	58	57
1250	58	
1600	56	
2000	63	59
2500	63	
3150	60	
4000	62	62
5000	66	



Appendix C: Proposed Glazed Elements (highlighted in red)



Pilkington **Optiphon™**
Laminated Glass for noise control

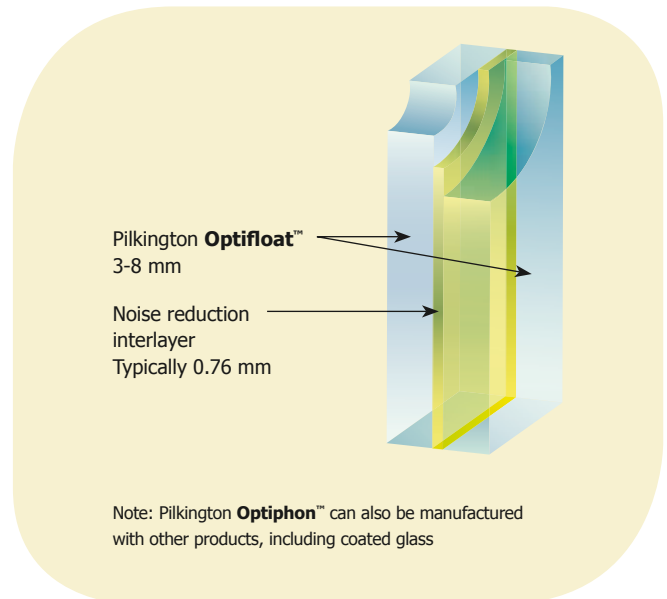
Pilkington **Optiphon™**

Laminated glass for superior noise insulation

Pilkington **Optiphon™** is the ideal choice of glass in situations where there is excess noise from road, rail or air traffic, or various other sources, such as factories, nightclubs or neighbours.

Pilkington **Optiphon™** is a high quality acoustic laminated glass incorporating a special PVB (PolyVinyl Butyral) interlayer. It offers excellent noise reduction without compromising on light transmittance or impact performance.

The desired acoustic performance can be achieved through combining various thicknesses of glass with a PVB interlayer. With a large variety of product combinations, Pilkington **Optiphon™** offers the opportunity to achieve specific noise reduction requirements.



Benefits

- Special PVB interlayer for enhanced sound insulation performance
- A thinner and lighter glass for the equivalent acoustic performance
- Available in jumbo and LES sizes
- All products achieve safety class 1(B)1 (EN 12600) and are available to meet security classes in accordance with EN 356
- A high acoustic performance can be achieved when used in Insulating Glass Units (IGUs)
- Can also be used to improve noise insulation in a triple glazing construction

As well as reducing intrusive noise, Pilkington **Optiphon™** can be combined with other Pilkington products for a multi-functional glazing solution with additional benefits, such as:

- Thermal insulation with Pilkington **K Glass™** / Pilkington **Optitherm™** (coating in position 3 in IGU)
- Solar control with Pilkington **Suncool™** (coating in position 2 in IGU)
- Self-cleaning with Pilkington **Activ™** (coating in position 1 in IGU)

Sound insulation data for Pilkington **Optiphon™**

Glass	Sound reduction index (dB)									
	Octaveband Centre Frequency (Hz)						R _w (C; C _{tr})	R _w	R _w + C	R _w + C _{tr}
	125	250	500	1000	2000	4000				
Single glazing										
6.8 mm Pilkington Optiphon™	22	26	31	37	40	40	36 (-1; -4)	36	35	32
8.8 mm Pilkington Optiphon™	27	29	34	38	40	43	37 (0; -2)	37	37	35
10.8 mm Pilkington Optiphon™	26	30	35	39	40	46	38 (-1; -3)	38	37	35
12.8 mm Pilkington Optiphon™	29	32	36	41	42	51	40 (-1; -3)	40	39	37
16.8 mm Pilkington Optiphon™	31	33	38	41	43	54	41 (-1; -3)	41	40	38
Insulating glass units										
6 mm / 16 mm argon / 6.8 mm Pilkington Optiphon™	21	28	37	48	48	54	40 (-2; -6)	40	38	34
6 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	25	27	38	48	47	55	41 (-2; -6)	41	39	35
8 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	21	30	39	47	50	55	42 (-3; -8)	42	39	34
10 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	28	31	42	45	50	58	44 (-2; -6)	44	42	38
10 mm / 20 mm argon / 8.8 mm Pilkington Optiphon™	28	36	43	47	49	58	46 (-2; -6)	46	44	40
8.8 mm Pilkington Optiphon™ / 16 mm argon / 12.8 mm Pilkington Optiphon™	28	36	45	53	56	64	48 (-2; -7)	48	46	41
10.8 mm Pilkington Optiphon™ / 24 mm argon / 16.8 mm Pilkington Optiphon™	35	41	48	53	55	65	52 (-2; -6)	52	50	46
12.8 mm Pilkington Optiphon™ / 20 mm argon / 16.8 mm Pilkington Optiphon™	35	45	49	50	54	65	51 (-1; -4)	51	50	47

Measurements undertaken in accordance with BS EN ISO 10140 and R_w (C; C_{tr}) determined in accordance with BS EN ISO 717-1.

For insulating glass units, there is little difference in the sound insulation for cavity widths in the range 6 to 16 mm.

To calculate performance data for Pilkington products, please use our Spectrum online calculator at <https://spectrum.pilkington.com/>

For glass combinations to achieve an R_w value higher than 52 dB, please contact us for more details.

