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369 – 377 Kentish Town Road

Kentish Town, London

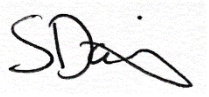
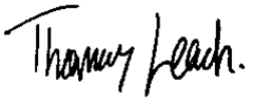
Planning Conditions 7 & 8 Assessment

Folgate Estates Ltd

4 October 2022

P2026-REP05-SPD

This document has been submitted to support the discharge of Conditions 7 & 8 of planning permission 2019/0910/P.

PROJECT:	369 – 377 Kentish Town Road Kentish Town, London Planning Conditions 7 & 8 Assessment
CLIENT:	Folgate Estates Limited Hiview House Highgate Road London NW5 1TN
DOCUMENT REFERENCE:	P2026-REP05-SPD
SIGNED:	 STEFFAN DAVIES
CHECKED:	 THOMAS LEACH
DATE:	4 October 2022

SUMMARY

Sol Acoustics Ltd has been commissioned by Folgate Estates Ltd to undertake an acoustic design assessment of the proposed residential development at 369-377 Kentish Town Road, to discharge the requirements of Planning Conditions 7 & 8 of planning consent reference 2019/0910/P.

This report provides an acoustic design review of the proposed separating wall and floor constructions, as per information provided by dMFK Architects.

Please refer to the main report for further information. Appendix A contains the INSUL Sound Insulation Prediction Software calculation outputs for all wall and floor types reviewed within this report.

CONTENTS

1 INTRODUCTION

Sol Acoustics Ltd ("Sol") has been commissioned by Folgate Estates Ltd to undertake an acoustic design assessment of the proposed mixed-use Development at the former carwash site, 369 – 377 Kentish Town Road, London.

This report aims to provide the information required to discharge Planning Conditions 7 & 8 of Planning Permission 2019/0910/P.

2 PLANNING CONDITIONS

2.1 Planning Condition 7

Condition 7 of the extant planning permission (2019/0910/P) states the following:

> *'Sound insulation between dwellings*
>
> *Prior to commencement of above ground works, details shall be submitted to and approved in writing by the Council, of an enhanced sound insulation value $D_{nT,w}$ and $L'_{nT,w}$ of at least 5 dB above the Building Regulations value, for the floor/ceiling/wall structures separating different types of rooms/ uses in adjoining dwellings, namely [eg. Living room and kitchen above bedroom of separating dwellings]. Approved details shall be implemented prior to residential occupation of the development and thereafter be permanently retained.'*

2.2 Planning Condition 8

Condition 8 of the extant planning permission (2019/0910/P) states the following:

> 'Sound insulation between dwellings and commercial
>
> '*Prior to commencement of above ground works, details shall be submitted to and approved in writing by the Council, of the sound insulation of the floor/ceiling/walls separating the commercial part(s) of the premises from noise sensitive premises. Details shall demonstrate that the sound insulation value $D_{nT,w}$ is enhanced by at least 10 dB above the Building Regulations value and, where necessary, additional mitigation measures are implemented to contain commercial noise within the commercial premises and to achieve the 'Good' criteria of BS 8233:2014 within the dwellings/ noise sensitive premises. Approved details shall be implemented prior to commercial occupation of the development and thereafter be permanently retained.'*

3 ACOUSTIC PERFORMANCE REQUIREMENTS

3.1 Residential to Residential Adjacencies

3.1.1 Approved Document E – Separating Walls and Floors

The statutory, numerical performance requirements of Approved Document E of the Building Regulations ("ADE"), relating to airborne and impact sound insulation, must be achieved prior to completion of the development.

Table 1 lists the ADE acoustic performance requirements (for airborne and impact sound insulation) of constructions providing a separating function:

	Airborne sound insulation $D_{nT,w} + C_{tr}$ dB (Minimum values)	**Impact sound insulation $L'_{nT,w}$ dB (Maximum values)**
Purpose built dwelling – houses and flats		
Walls	45	-
Floors and stairs	45	62

Table 1: Building Regulations 2010 Approved Document E: Purpose built dwelling-houses and flats -performance standards for separating walls, separating floors, and stairs that have a separating function

3.1.2 Planning Condition 7 Requirements

Table 2 lists the *enhanced* airborne and impact sound insulation requirements of Planning Condition 7 of the extant planning permission (2019/0910/P):

	Improvement on ADE airborne sound insulation requirements $D_{nT,w} + C_{tr}$ dB	**Improvement on ADE impact sound insulation requirements $L'_{nT,w}$ dB**
Planning Condition 7	**+5**	**-5**

Table 2: Planning Requirements summary – improvement on ADE

In summary the minimum acoustic performance requirements for residential separating partitions is summarised in Table 3 as follows:

	Airborne sound insulation $D_{nT,w} + C_{tr}$ **dB** **(Minimum values)**	**Impact sound insulation** $L'_{nT,w}$ **dB** **(Maximum values)**
Purpose built dwelling – houses and flats		
Walls	**50**	**-**
Floors and stairs	**50**	**57**

Table 3: Residential unit minimum acoustic performance criteria for separating walls, separating floors, and stairs that have a separating function between residential dwellings

3.2 Residential to Commercial Adjacencies

3.2.1 Planning Condition 8 Requirements

Table 4 lists the *enhanced* airborne and impact sound insulation requirements of Planning Condition 7 of the extant planning permission (2019/0910/P):

	Improvement on ADE airborne sound insulation requirements $D_{nT,w} + C_{tr}$ **dB**
Planning Condition 8	**+10**

Table 4: Planning Requirements summary – improvement on ADE between residential and commercial

In summary the minimum acoustic performance requirements for residential separating partitions is summarised in Table 5 as follows:

	Airborne sound insulation $D_{nT,w} + C_{tr}$ **dB** **(Minimum values)**
Adjacencies between Residential and Commercial	**55**

Table 5: Residential unit minimum acoustic performance criteria for separating walls, separating floors, and stairs that have a separating function between residential dwellings and commercial areas.

4 PROPOSED SEPARATING WALL CONSTRUCTIONS

4.1 Separating Walls between Flats

The following separating wall construction is proposed between dwellings:

- One layer of 15mm thick Acoustic Plasterboard (eg: BG Soundbloc);
- One layer of 12.5mm thick High-Strength Plasterboard (eg: BG Habito / Siniat Megadeco)
- Twin 'I' Studs in 170mm Cavity;
- 50mm acoustically absorbent material in formed cavity (Mineral wool or similar, min. density 10kg/m^3);
- One layer of 12.5mm thick High-Strength Plasterboard (eg: BG Habito);
- One layer of 15mm thick Acoustic Plasterboard (eg: BG Soundbloc);

Sol Acoustics has modelled the proposed separating wall construction in INSUL sound insulation prediction software, Table 6 presents the predicted octave-band sound reduction index for the proposed construction:

Predicted Lab-Rated Airborne Sound Reduction Index (dB, R)							
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	$R_w + C_{tr}$
25	44	58	70	79	74	76	58

Table 6: Predicted Lab-rated airborne sound reduction index – separating walls between flats

Sol Acoustics recommend that a 7 dB flanking correction is applied to determine lab-rated sound reduction index ($R_w + C_{tr}$) requirements from on-site sound reduction criteria ($D_{nT,w} + C_{tr}$), therefore separating walls should achieve a minimum lab-rated sound reduction index of 57 dB $R_w + C_{tr}$.

As can be seen in Table 6 and within Appendix A the proposed construction is suitable to achieve airborne sound insulation requirements between dwellings.

4.2 Separating Walls between Flats and Circulation Spaces

The following separating wall construction is proposed between dwelling and circulation spaces

- One layer of 15mm thick Acoustic Plasterboard (eg: BG Soundbloc);
- One layer of 12.5mm thick High-Strength Plasterboard (eg: BG Habito)
- Twin 'I' Studs in 170mm Cavity;
- 170mm acoustically absorbent material in formed cavity (Mineral wool or similar, min. density 10kg/m^3);
- One layer of 12.5mm thick High-Strength Plasterboard (eg: BG Habito / Siniat Megadeco);
- One layer of 15mm thick Acoustic Plasterboard (eg: BG Soundbloc);

Sol Acoustics has modelled the proposed separating wall construction in INSUL sound insulation prediction software, Table 7 presents the predicted octave-band sound reduction index for the proposed construction:

Predicted Lab-Rated Airborne Sound Reduction Index (dB, R)							
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	$R_w + C_{tr}$
25	47	64	81	89	82	87	62

Table 7: Predicted Lab-rated airborne sound reduction index – separating walls between flats and circulation spaces

Sol Acoustics recommend that a 7 dB flanking correction is applied to determine lab-rated sound reduction index ($R_w + C_{tr}$) requirements from on-site sound reduction criteria ($D_{nT,w} + C_{tr}$), therefore separating walls should achieve a minimum lab-rated sound reduction index of 57 dB $R_w + C_{tr}$.

As can be seen in Table 7 and within Appendix A the proposed construction is suitable to achieve airborne sound insulation requirements between dwellings.

5 PROPOSED SEPARATING FLOOR CONSTRUCTIONS

5.1 Separating Floors between Flats

The following separating floor construction is proposed between dwellings:

- c.20mm Floor Finish Zone (carpet, tiles or timber plank with underlay);
- 75mm Screed with Underfloor Heating;
- 25mm Mineral Wool Insulation
- Resilient Impact Control Layer (eg: 3mm Regupol or similar providing a minimum impact sound reduction of 17dB);
- 250mm thick RC Slab;
- Min. 250mm Ceiling Void Zone, including MF frame hangers;
- 2 layers of 12.5mm thick BG Wallboard or equivalent.

Sol Acoustics has modelled the proposed separating wall construction in INSUL sound insulation prediction software.

5.1.1 Airborne Sound Insulation

Table 8 presents the predicted octave-band airborne sound reduction index for the proposed construction:

Predicted Lab-Rated Airborne Sound Reduction Index (dB, R)							
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	$R_w + C_{tr}$
44	56	61	69	76	83	85	67

Table 8: Predicted Lab-rated airborne sound reduction index – separating floors between flats

Sol Acoustics recommend that a 7 dB flanking correction is applied to determine lab-rated sound reduction index ($R_w + C_{tr}$) requirements from on-site sound reduction criteria ($D_{nT,w} + C_{tr}$), therefore separating floors should achieve a minimum lab-rated sound reduction index of 57 dB $R_w + C_{tr}$.

As can be seen in Table 8 and within Appendix A the proposed construction is suitable to achieve airborne sound insulation requirements between dwellings.

5.1.2 Impact Sound Insulation

Table 9 presents the predicted octave-band impact sound reduction index for the proposed construction:

Predicted Lab-Rated Airborne Sound Reduction Index (dB, L_n)							
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	$L_{n,w}$
57	57	57	53	50	49	49	51

Table 9: Predicted lab-rated impact sound reduction index – separating floors between flats

The predicted impact sound reduction index within Table 9 does not include the performance increase provided by the proposed resilient impact control layer. The predicted $L_{n,w}$ will be reduced by up to a further 17 dB by the proposed impact control layer, therefore on-site impact sound insulation will be suitably below the 57 dB $L'_{nT,w}$ requirement.

5.2 Separating Floors between Flats and Commercial Unit

The following separating floor construction is proposed for the first floor slab between dwellings and the ground floor commercial unit:

- c.20mm Floor Finish Zone (carpet, tiles or timber plank with underlay);
- 75mm Screed with Underfloor Heating;
- 25mm Mineral Wool Insulation
- 400mm thick RC Slab;
- Min. 260mm Ceiling Void Zone, fulfilled with mineral wool insulation;
- 1 layer of 15mm 'High Impact Board' (eg: BG Duraline or similar);

Sol Acoustics has modelled the proposed separating wall construction in INSUL sound insulation prediction software. Table 10 presents the predicted octave-band airborne sound reduction index for the proposed construction:

Predicted lab-Rated Airborne Sound Reduction Index (dB, R)							
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	$R_w + C_{tr}$
62	62	70	77	84	90	99	74

Table 10: Predicted lab-rated airborne sound reduction index – separating floors between flats and commercial

Sol Acoustics recommend that a 7 dB flanking correction is applied to determine lab-rated sound reduction index ($R_w + C_{tr}$) requirements from on-site sound reduction criteria ($D_{nT,w} + C_{tr}$), therefore separating floors between flats and the commercial unit should achieve a minimum lab-rated sound reduction index of 62 dB $R_w + C_{tr}$.

As can be seen in Table 10 and within Appendix A the proposed construction is suitable to achieve airborne sound insulation requirements between dwellings

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6 CONCLUSION

A review of proposed separating wall and floor constructions for the proposed residential development at 369 – 377 Kentish Town Road has been undertaken.

All proposed separating wall and floor constructions are considered suitable to achieve the acoustic criteria required by Planning Conditions 7 & 8 of planning consent reference 2019/0910/P.

Appendix A contains the INSUL Sound Insulation Prediction Software calculation outputs for all wall and floor types reviewed within this report.

APPENDIX A INSUL CALCULATION SHEETS

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Sound Insulation Prediction (v9.0.23)

INSUL

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
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Job Name:
Job No.: Initials:44794
Date:21/09/2022
File Name:P2026 Party Wall.ixl

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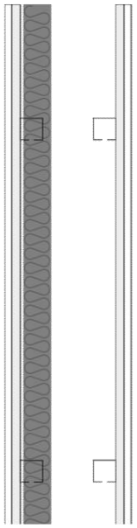


Rw 68 dB
C -3 dB
Ctr -10 dB

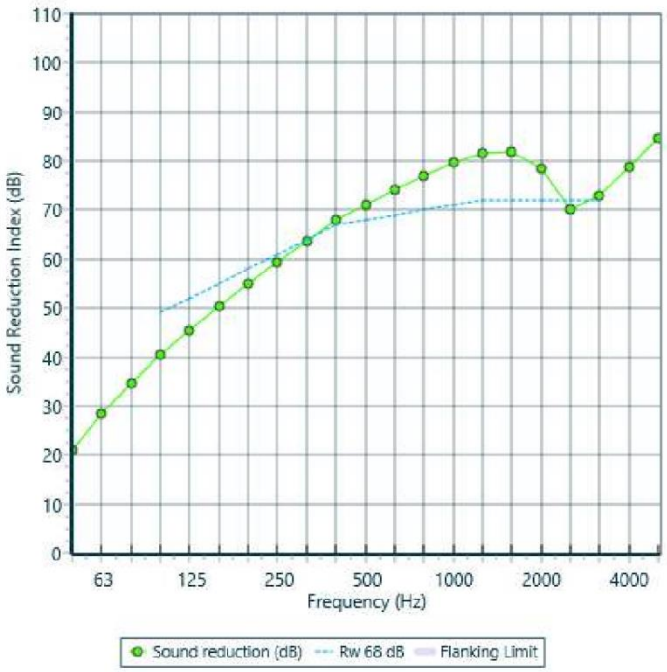
Mass-air-mass resonant frequency = =35 Hz
Panel Size = 2.7 m x 4.0 m
Partition surface mass = 50.2 kg/m²

System description

Panel 1 : 1 x 12.5 mm Siniat Megadeco 12.5mm + 1 x 15 mm Gyproc Duraline 15mm

Frame: Double Steel Stud (40 mm x 38 mm), Stud spacing 600 mm ; Cavity Width 170 mm , 1 x Rockwool (33kg/m3) Thickness 50 mm
Panel 2 : 1 x 15 mm Gyproc SoundBloc 15mm + 1 x 12.5 mm Siniat Megadeco 12.5mm

freq.(Hz)	R(dB)	R(dB)
50	21	
63	28	25
80	35	
100	40	
125	46	44
160	50	
200	55	
250	59	58
315	64	
400	68	
500	71	70
630	74	
800	77	
1000	80	79
1250	81	
1600	82	
2000	79	74
2500	70	
3150	73	
4000	79	76
5000	85	



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Sound Insulation Prediction (v9.0.23)

INSUL

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
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Job Name:
Job No.: Initials:44794
Date:21/09/2022
File Name:P2026 Corridor Wall.ixl

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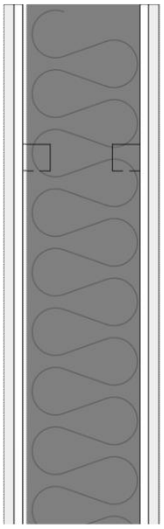


Rw 74 dB
C -5 dB
Ctr -12 dB

Mass-air-mass resonant frequency = =36 Hz
Panel Size = 2.7 m x 4.0 m
Partition surface mass = 52.8 kg/m²

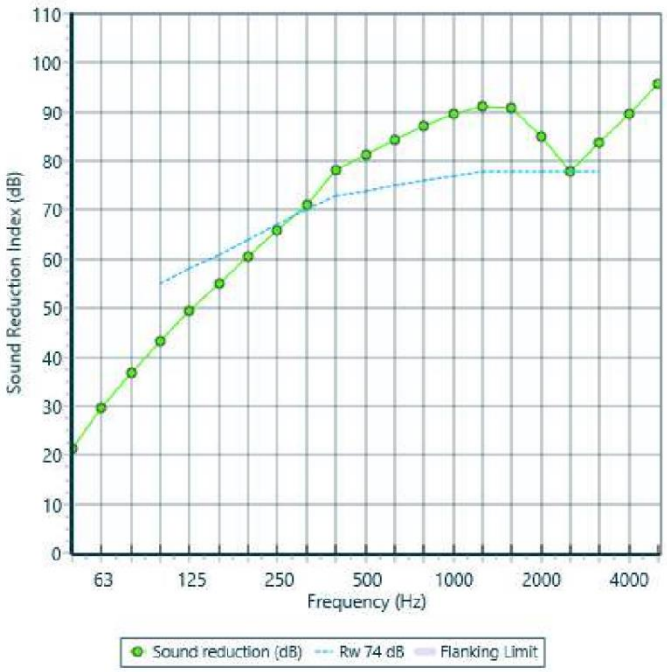
System description

Panel 1 : 1 x 15 mm Gyproc SoundBloc 15mm + 1 x 12.5 mm Siniat Megadeco 12.5mm

Frame: Double Steel Stud (40 mm x 38 mm), Stud spacing 600 mm ; Cavity Width 170 mm , 1 x Rockwool (33kg/m3) Thickness 170 mm

Panel 2 : 1 x 12.5 mm Siniat Megadeco 12.5mm + 1 x 15 mm Gyproc SoundBloc 15mm

freq.(Hz)	R(dB)	R(dB)
50	21	
63	30	25
80	37	
100	43	
125	49	47
160	55	
200	61	
250	66	64
315	71	
400	78	
500	81	81
630	84	
800	87	
1000	89	89
1250	91	
1600	91	
2000	85	82
2500	78	
3150	84	
4000	90	87
5000	96	



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Sound Insulation Prediction (v9.0.23)

INSUL

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
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Job Name:
Job No.: Initials:44794
Date:21/09/2022
File Name:P2026 Party Floor.ixl

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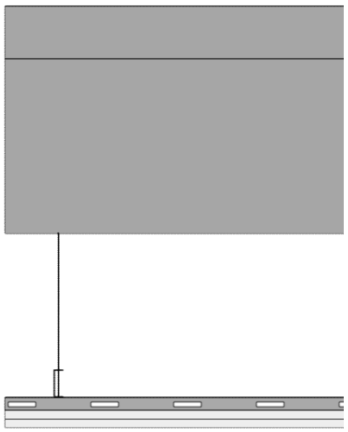

Rw 73 dB
C -2 dB
Ctr -6 dB

Mass-air-mass resonant frequency = =29 Hz
Panel Size = 2.7 m x 4.0 m
Partition surface mass = 777 kg/m²

System description

Panel 1 : 1 x 75 mm Concrete + 1 x 250 mm Concrete

Frame: Suspended Light Steel Grid (2.5E2 mm x 45 mm), Stud spacing 600 mm ; Cavity Width 250 mm
Panel 2 : 2 x 12.5 mm Gyproc Wallboard 12.5mm

freq.(Hz)	R(dB)	R(dB)
50	41	
63	46	44
80	51	
100	54	
125	56	56
160	58	
200	61	
250	60	61
315	63	
400	66	
500	69	69
630	72	
800	74	
1000	77	76
1250	79	
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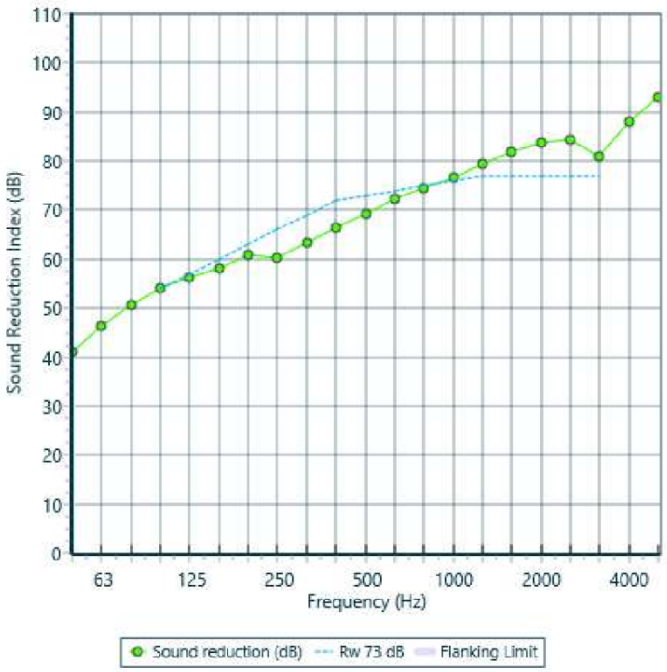
2000	84	83
2500	84	
3150	81	
4000	88	85
5000	93	



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Sound Insulation Prediction (v9.0.23)

Margin of error is generally within Ln,w ±5 dB
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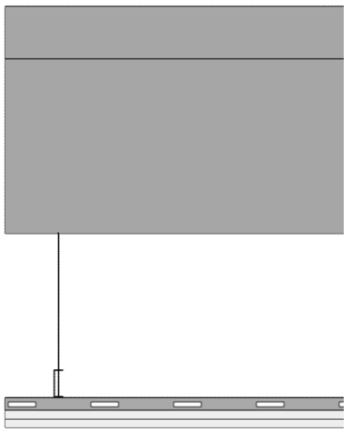
Job Name:
Job No.: Initials:44794
Date:21/09/2022
File Name:P2026 Party Floor.ixl

INSUL

Notes:



Ln,w 51 dB

Mass-air-mass resonant frequency = =36 Hz
Panel Size = 2.4 m x 2.4 m
Partition surface mass = 777 kg/m²

System description

Panel 1 : 1 x 75 mm Concrete + 1 x 250 mm Concrete

Frame: Suspended Light Steel Grid (2.5E2 mm x 45 mm), Stud spacing 600 mm ; Cavity Width 250 mm
Panel 2 : 2 x 12.5 mm Gyproc Wallboard 12.5mm

freq.(Hz)	Ln(dB)	Ln(dB)
50	50	
63	50	57
80	55	
100	53	
125	51	57
160	51	
200	54	
250	53	57
315	51	
400	49	
500	48	53
630	46	
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1250	45	
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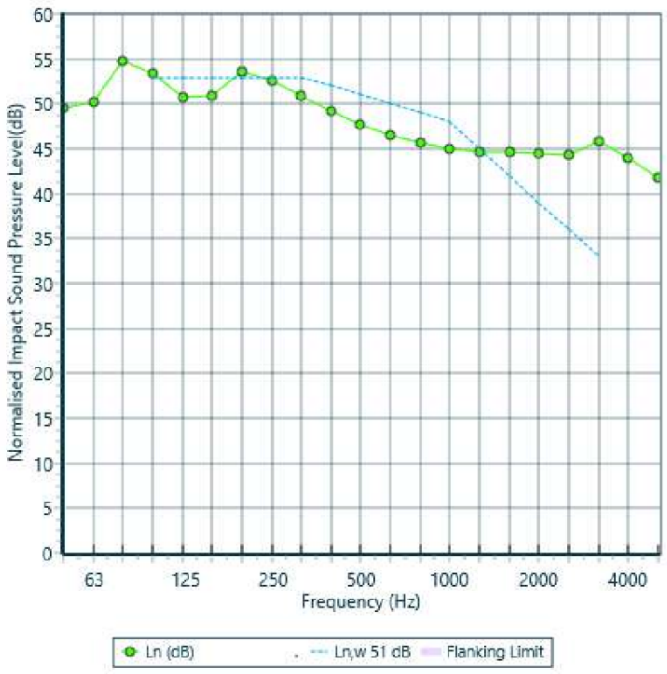
4000	44	49
5000	42	



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Sound Insulation Prediction (v9.0.23)

INSUL

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
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Date:21/09/2022
File Name:P2026 Party Floor to Commercial.ixl

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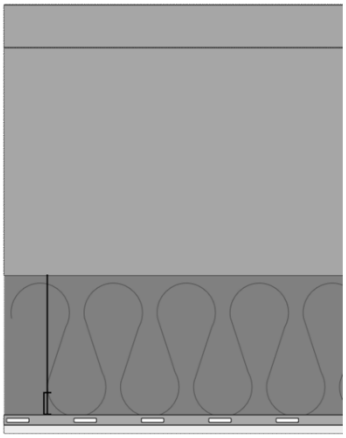

Rw 81 dB
C -2 dB
Ctr -7 dB

Mass-air-mass resonant frequency = =27 Hz
Panel Size = 2.7 m x 4.0 m
Partition surface mass = 1.13E3 kg/m²

System description

Panel 1 : 1 x 75 mm Concrete + 1 x 400 mm Concrete

Frame: Suspended Light Steel Grid (2.6E2 mm x 45 mm), Stud spacing 600 mm ; Cavity Width 260 mm , 1 x Rockwool (33kg/m3) Thickness 260 mm ...
Panel 2 : 1 x 15 mm Gyproc Duraline 15mm

freq.(Hz)	R(dB)	R(dB)
50	59	
63	66	62
80	64	
100	60	
125	62	62
160	65	
200	68	
250	70	70
315	73	
400	75	
500	78	77
630	80	
800	82	
1000	85	84
1250	87	
1600	89	
2000	91	90
2500	91	
3150	94	
4000	111	99
5000	114