

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E



Site Address:	Heritage House, 79-80, High Street, Gravesend, Kent, DA11 0BH
Client / Performed for:	TRS Property LTD
Report Date:	29/04/2024
Issued by:	Nilav Babariya
Report No:	10829042024-01
Report Issued Date:	01/05/2024
Discharge Condition:	Condition 5
Planning Reference:	20230567
Report Approved by and position:	 Suresh Babariya – Laboratory Manager



Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Disclaimer

The opinions and interpretations presented in this report represent our best technical interpretation of the data made available to us. However, due to uncertainty inherent in the estimation of all parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, cost, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. The findings and opinions expressed are relevant to the dates of the site works and should not be relied upon to represent conditions at substantially later dates. If additional information becomes available which may affect our comments, conclusions or recommendations, the author reserves the right to review the information, reassess any new potential concerns and modify our opinions accordingly. Except for the provision of professional services on a fee basis, Airtight Building Solutions Ltd does not have a commercial arrangement with any person or company involved in the interests that are the subject of this report. Airtight Building Solutions Ltd cannot accept any liability for the correctness, applicability, or validity for the information they have provided, or indeed for any consequential costs or losses in this regard. Our efforts have been made on a “best endeavours” basis and no responsibility or liability is warranted or accepted by Airtight Building Solutions Ltd

The material presented within this report is confidential. This report has been prepared for the exclusive use of the client and shall not be distributed or made available to any other company or person without the knowledge and written consent of Airtight Building Solutions Ltd and the client. All works undertaken by Airtight Building Solutions Ltd are carried out in accordance with Airtight Building Solutions Ltd.’s terms and conditions found at www.airtightbuildingsolutions.co.uk

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Desk Top Report Summary

Airtight Building Solutions Ltd has been requested to carry out a sound insulation assessment of the party walls and floors between **Heritage House, 79-80, High Street, Gravesend, Kent, DA11 0BH**. The scheme includes removal of existing floor finish and installation of timber floor and achieve building regulations compliances.

The building is required to achieve the sound insulation performance criteria within Approved Document E (ADE) 'Resistance to the passage of sound' of the Building Regulations with additional improvement of at least 5dB above building Regulation.

The purpose of this design note is to provide a review of the sound insulation performance for the separating walls and floors within the development.

Desktop audit showed that the WALL(S) and FLOOR(S) assessed is likely to MEET and exceed at least the requirements of Approved Document E with respect to IMPACT sound insulation provided that all works are undertaken as per specification and manufactures guideline.

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Condition 5: Separation of noise sensitive rooms in neighboring flats.

Prior to the first occupation of the HMO units, a sound insulation assessment shall be carried out, submitted to and approved in writing by the Local Planning Authority. The Assessment shall include details of the assessment methodology and the sound insulation performance of the internal wall partitions, internal floor/ceiling partitions and also adjacent party wall partitions. The sound insulation performance of these shall resist the transmission of airborne sound and impact sound to demonstrate that the minimum levels stated in the Building Regulations are capable of being complied with. The assessment will also include details of any proposed works to achieve these levels. Any works identified being required in order to achieve these minimum levels shall be implemented and evidence provided (if necessary, by way of a further sound insulation assessment report) for approval by the Local Authority prior to first occupation.

This desk top analysis only relates to the Sound Insulation between floors and walls at **Heritage House, 79-80, High Street, Gravesend, Kent, DA11 0BH** the analysis and subsequent report were carried out in accordance with the required Building Regulation Approved Document PART E.

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

CONTENTS

- 1 OBJECTIVES**
- 2 ASSESSMENT DETAILS**
- 3 PERFORMANCE STANDARDS AND RESULTS**
- 4 INTERNAL SOUND INSULATION**
- 5 REFERENCES**
- 6 APPENDIX 1 – GLOSSARY OF TERMS**
- 7 APPENDIX 2 – DRAWINGS AND DATA SHEETS**

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

1 OBJECTIVES

To carry out Desk top Internal Sound Insulation Report to comply to **Condition 5** of planning permission number **20230567** at the following property: **Heritage House, 79-80, High Street, Gravesend, Kent, DA11 0BH**

2 ASSESSMENT DETAILS

Type of property:	Flat conversion
Age of property:	N/A
Tests carried out by:	Airtight Building Solutions Ltd. 11 Imperial Drive, London, HA2 7BP
Test Technician / Engineer:	Nilav Babariya
Laboratory Manager:	Suresh Babariya
Client:	TRS Property LTD
Description of Background Noise:	Light vehicular traffic noise

Desk top audit has been carried in full accordance with the procedures set out in Approved Document E [1], and the following standard(s):

BS EN ISO 140-4: 1998 [2]

BS EN ISO 140-7: 1998 [3]

The sound insulation ratings were calculated in full accordance with:

BS EN ISO 717-1: 1997 [4]

BS EN ISO 717-2: 1997 [5]

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

3 PERFORMANCE STANDARDS AND RESULTS

Performance Standards Table(Approved Document E)

The table below is taken from Building Regulations Approved Document E. Table 3.1 shows the required performance standard needed to pass a sound insulation test for separating walls and floors for dwelling houses and flats.

Table 3.1		
	Airborne Sound Insulation $D_{nT,w} + C_{tr}$	Impact Sound Insulation $L'_{nT,w}$
Purpose built dwelling houses and flats		
Walls	45dB	-
Floor	45dB	62dB
Dwelling houses and flats formed by material change of use		
Walls	43dB	-
Floors	43dB	64dB

The table below is taken from Building Regulations Approved Document E. Table 3.2 shows the required performance standard needed to pass a sound insulation test for separating walls and floors for Rooms for residential purpose.

Table 3.2		
	Airborne Sound Insulation $D_{nT,w} + C_{tr}$	Impact Sound Insulation $L'_{nT,w}$
Purpose built Rooms for Residential Purpose		
Walls	43dB	-
Floor	45dB	62dB
Rooms for residential purpose formed by material change of use		
Walls	43dB	-
Floors	43dB	64dB

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

The Building Regulations Approved Document E

Approved Document E (2003) edition which incorporates 2004, October 2010 and April 2013, amendments. Sets out guideline sound transmission values for separating walls and floors that should be achieved under test if, acoustical performance is to be deemed acceptable. This document provides information on construction details, flanking details, testing and sampling methods as well as the criteria for both new build and converted buildings.

Approved Document E states airborne tests should be undertaken for both partition floors and walls between dwellings. For airborne performance, converted dwellings the partition walls and floor between dwellings and between dwellings and communal areas should achieve a minimum of 43 dB DnT,w + Ctr, and purpose built dwellings should achieve a minimum of 45 dB DnT,w + Ctr.

Approved Document E states impact tests should be undertaken for partition floors between dwellings. For impact performance, converted dwellings the partition floor between dwellings and between dwellings and communal areas should achieve a maximum of 64 dB DnT,w + Ctr, and purpose built dwellings should achieve a maximum of 62 dB DnT,w + Ctr.

Internal walls and floors within dwelling are required to meet minimum construction standards, these will not however be tested. Section 0.2 of the Building Regulations Part E states that internal walls and floor need to provide a minimum of Rw 40 dB.

Reverberation within communal spaces is also required to meet minimum standards, these will not however be tested.

To allow the reader to better understand the predicted acoustic performances stated for the proposed partition walls and floors, we have applied the following subjective scale. This scale is based on our opinion of best achieving our client's expectations. We will only design to achieve a 'Good' performance or better (Table 3.3).

Table 3.3 Subjective Scale of Acoustic Performance				
Predicted Performance Range for Airborne Sound		Predicted Performance Range for Impact Sound		Subjective Ratings
Conversion	New Build	Conversion	New Build	
43-46	45-48	61-64	59-62	Average
47-50	49-52	57-60	55-58	Good
50-53	53-56	53-56	51-54	Very Good
54-57	57-60	49-52	47-50	Excellent

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Sound Insulation Specification

Sound Insulation Criteria – Requirement E1

Requirement E1 of Approved Document E requires protection against sound from other parts of the building and adjoining buildings as follows:

E1 – Dwelling-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that they provide reasonable resistance to sound from other parts of the same building and from adjoining building.

The table below shows the criteria for sound insulation of the party walls and floors. The sound insulation requirements are taken from Part E.

Table 3.4 Design Sound Insulation Specification – Requirements E1		
Element	Minimum Performance Standard	Minimum Design Standard
Party Walls	Airborne – 45dB $D_{nT,w}$ + Ctr (43dB for Material Change of Use)	Airborne – 50dB $D_{nT,w}$ + Ctr(48dB for Material Change of Use)
	Airborne – 45dB $D_{nT,w}$ + Ctr (43dB for Material Change of Use)	Airborne – 50dB $D_{nT,w}$ + Ctr(48dB for Material Change of Use)
Party Floors	Impact – 62 dB L_{nTw} (64dB for Material Change of Use)	Impact – 57 dB L_{nTw} (59dB for Material Change of Use)

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Predictive Desktop analysis (Predictive Test Results)

Predicted Desk top analysis results of the sound insulation tests are documented below in Table 3.5

-If all materials used in accordance with strictly manufactures specifications-

Table 3.5					
Predictive Desktop analysis Test Results					
KEY WORD: ABW = Airborne Wall($D_{nT,w}$); ABF = Airborne Floor($D_{nT,w}$); IMP = Impact($L'_{nT,w}$)					
Test Number / Test Type / Chart No	Source Room	Receive Room	Required dB	Predictive dB $D_{ntw}+C_{tr}$	Pass / Fail
01ABF(Floor)	2 nd F – Front Room	1 st F – Front Room	$\geq 43\text{dB}$	43dB	Pass
02IMP(Floor)	2 nd F – Front Room	1 st F – Front Room	$\leq 64\text{dB}$	64dB	Pass
03ABW(Wall)	Bedroom 3	Bedroom 2	$\geq 43\text{dB}$	43dB	Pass

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

4 INTERNAL SOUND INSULATION

To comply with Planning **Condition 5** a sound insulation assessment of party walls and floors has been carried out to ensure future habitants are not unduly affected by noise and activities within adjoining flats.

Planning **Condition 5** requires separating walls and floors to achieve results stated within the Building Regulations.

Design Targets

Table 4.1– Design Targets in compliance with Condition 5			
Sound Insulation Performance	ADE Requirements	Design Tolerance	On-site Predictions
Airborne Walls and Floors	$\geq 43\text{dB } D_{nT,w} + C_{tr}$	+ 5dB(floors), +5dB(walls)	$\geq 43\text{dB } D_{nT,w} + C_{tr}$
Floor- Impact	$\leq 64\text{dB } L'_{nT,w}$	- 5dB	$\leq 64\text{dB } L'_{nT,w}$

Note that the values within Table 6.1 are on-site performance targets. The sound insulation of various construction elements are normally measured and rated in acoustic test laboratories, and quoted in terms of the sound reduction index, R_w . Using a minimum sensible design tolerance, we calculate that the following laboratory measure of sound insulation is required:

Table 4.2 – Laboratory Sound Insulation Performance Requirements		
Sound Insulation Performance	On-site Requirement	Laboratory Tested Values
Walls -Airborne	$\geq 48\text{ dB } D_{nT,w} + C_{tr}$	$\geq 54\text{ dB } R_w + C_{tr}$
Floor- Airborne	$\geq 48\text{ dB } D_{nT,w} + C_{tr}$	$\geq 54\text{ dB } R_w + C_{tr}$
Floor-Impact	$\leq 59\text{ dB } L'_{nT,w}$	$\leq 53\text{ dB } L'_{nT,w}$

Building Acoustic Test

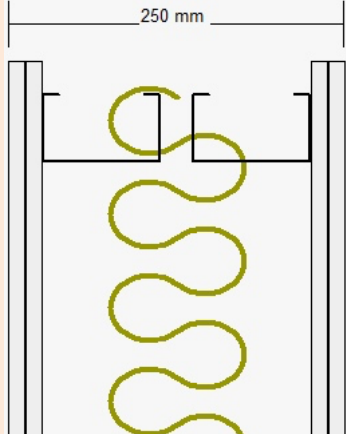
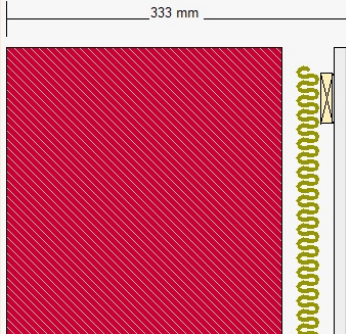
Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Separating Wall Construction

It is understood that new build separating walls between flats is based on a twin timber stud construction and existing walls to be retained are formed from 140mm solid masonry.

To meet the acoustic performance targets for separating walls the following wall specifications are provided:

Table 4.3 – Main separating wall construction		
Plan view	Construction Specification	Acoustic Rating
	• 1 layer of 12.5mm Fire Line • 1 layer of 15mm Sound Bloc • 2 x 75mm Studs – Not Braced • Minimum 200mm cavity between inner boards • 100mm Mineral Wool Insulation (density ≥ 45 kg/m³) • 1 layer of 15mm Sound Bloc • 1 layer of 12.5mm Fire Line	57 dB $R_w + C_{tr}$
	• 270mm Brick/Block • 50mm Independent Timber Stud – Not fixed to wall • 25mm Mineral Wool Insulation (density ≥ 45 kg/m³) • 1 x layers of 12.5mm Wall Board	58 dB $R_w + C_{tr}$

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Construction Notes:

- Calculations are based on the twin studs remaining independent, i.e. no cross braces.
- Ensure walls are fully complete with no service penetrations.
- Care must be taken to ensure the insulation layer is fully complete with no airgaps or sagging.
- Acoustic back boxes or putty pads should be used around electrical outlets.

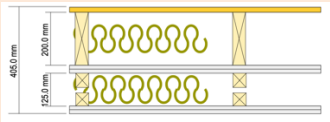
Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Separating Floor Construction

It is understood the existing floors are based on a timber joist construction. To achieve the airborne sound insulation performance value in Table 4.2 the following construction specification is provided:

Table 4.3 – Main separating floor construction		
Section View	Construction Specification	Acoustic Rating
	Cavity: Solid joist (timber or Twinaplate): Stud spacing 600 mm , Infill: Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2) Panel 2 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01) Cavity: Separate joists: Stud spacing 600 mm , Infill: Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2) Panel 3 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01)	60 dB R_w + C_{tr}

Calculations show that the proposed floor construction will achieve the design targets set out in Table 4.3 above once constructed correctly. It is seen as the responsibility of the main designer and contractor to ensure all junctions and interfaces are detailed correctly.

Sound insulation data sheets for the proposed constructions are provided in Appendix D.

Construction Notes:

- Calculations are based on ceilings remaining independent, i.e. no rigid connections between ceilings.
- Ensure ceilings are fully complete with no service penetrations.
- Care must be taken to ensure the insulation layer is fully complete with no airgaps between separate layers of insulation (horizontally flush).
- Acoustic enclosures should be used around spotlights.

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Impact Sound Insulation

Calculations show that the proposed floor construction achieves an impact sound insulation performance of 51 dB L'n,w, results in table 3.5 have been underestimated to show design tolerance, which meet the performance criteria within Table 4.3.

The floating floor may be applied as T&G flooring boards over a separate resilient layer or as a complete system. Sample systems included Screed Board 28, Sound Deck, Isosonic Dek or Karma Overlay. Please refer to manufacturers specifications to ensure the system provides an impact reduction of no less than 18 dB ΔLw. Ensure manufacturers installation guidelines are fully followed.

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

5 REFERENCES

[1]The Building Regulations 2010

Approved Document E: Resistance to the Passage of Sound (2003 Edition incorporating 2004 and 2010 amendments)

1.ISBN 978 1 85946 204 1

[2]BS EN ISO 140-4: 1998

Acoustics – Measurement of sound insulation in buildings and of building elements

2.Part 4: Field measurements of airborne sound insulation between rooms

[3]BS EN ISO 140-7: 1998

Acoustics – Measurement of sound insulation in buildings and of building elements

3.Part 7: Field measurements of impact sound insulation of floors

[4]BS EN ISO 717-1: 1997

Acoustics – Rating of sound insulation in buildings and of building elements

Part 1: Airborne sound insulation

[5]BS EN ISO 717-2: 1997

Acoustics – Rating of sound insulation in buildings and of building elements

Part 2: Impact sound insulation

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

6 APPENDIX 1 – GLOSSARY OF TERMS

Airborne Sound : Sound propagating through the air

Airborne Sound Insulation : Sound insulation which reduces the amount of airborne sound passing between buildings or parts of buildings

C_{tr} : The correction applied to a sound insulation rating (such as $D_{nT,w}$) to take into account specific sound spectra

Decibel (dB) : The unit used in acoustic measurement to describe one level with respect to a pre-defined reference level

$D_{nT,w}$: The weighted standardised level difference – a single number figure used to characterise the airborne sound insulation between rooms

Hertz (Hz) : The unit of measurement of frequency (cycles per second)

Impact Noise : Sound (generally from foot-falls) propagating through the material of the building

Impact Noise Insulation : Sound insulation which reduces the amount of structure-borne sound passing between buildings or parts of buildings

$L'_{nT,w}$: The weighted standardised impact sound pressure level – a single number figure used to characterise the impact sound insulation of floors

Noise : Unwanted sound

Reverberation Time (RT_{60}) : An indication of the amount of absorption in a room. The time (in seconds) taken for the noise level in a room to decay by 60dB

Types of Separating Walls

Wall Type 1: *Solid Masonry*

Wall Type 2: *Cavity Masonry*

Wall Type 3: *Masonry between independent panels*

Wall Type 4: *Framed walls with absorbent material*

Types of Separating Floors covering

Floor Type 1: *Concrete base with ceiling and soft floor*

Floor Type 2: *Concrete base with ceiling and floating*

floor

Floor Type 3: *Timber frame base with ceiling and*

platform floor

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

7 APPENDIX 2 – TEST CHART(S) and Drawings

As Attached below

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Sound Insulation Prediction (v8.0.7)

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

Job Name:

Job No.:

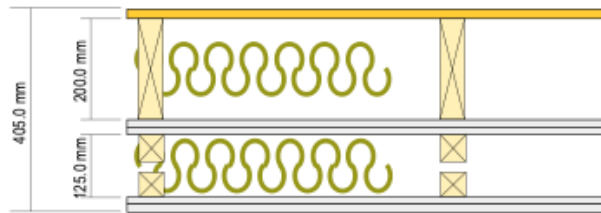
Page No.:

Notes:

Date:

Initials:

File Name:



R_w	79 dB
C	-10 dB
C_{tr}	-19 dB
D_{nTw}	81 dB
	[V:50m2] [A:11m2]

System description

Panel 1 : 1 x 20.0 mm Flooring Particle Board (ρ :710 kg/m³,E:3.4GPa, η :0.03)

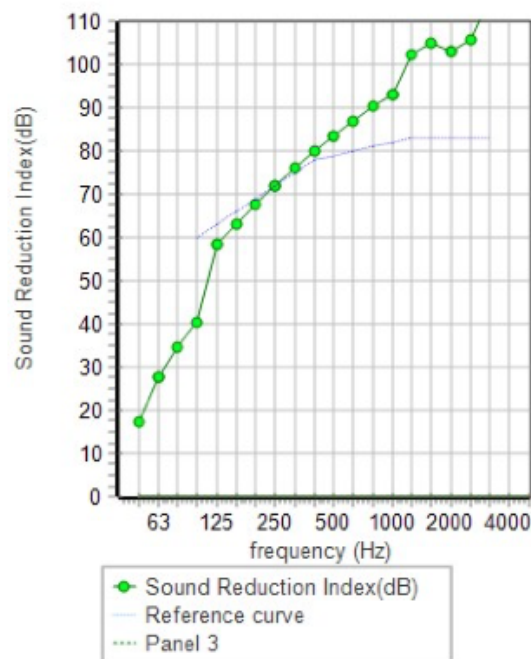
Cavity: Solid joist(timber or Twinplate): Stud spacing 600 mm , Infill Fibreglass (10kg/m³) Thickness 100 mm (ρ :10 kg/m³, Rf:4000 Pa.s/m²)
Panel 2 + 2 x 15.0 mm Gyproc SoundBloc 15mm (ρ :840 kg/m³,E:3.1GPa, η :0.01)

Cavity: Separate joists: Stud spacing 600 mm , Infill Fibreglass (10kg/m³) Thickness 100 mm (ρ :10 kg/m³, Rf:4000 Pa.s/m²)
Panel 3 + 2 x 15.0 mm Gyproc SoundBloc 15mm (ρ :840 kg/m³,E:3.1GPa, η :0.01)

Mass-air-mass resonant frequency =35 Hz , 55 Hz

Panel Size 2.7x4 m; Mass 66.6 kg/m²

frequency (Hz)	R(dB)	R(dB)
50	17	
63	28	22
80	35	
100	40	
125	58	45
160	63	
200	68	
250	72	71
315	76	
400	80	
500	84	83
630	87	
800	90	
1000	93	93
1250	102	
1600	105	
2000	103	104
2500	106	
3150	115	
4000	123	119
5000	129	



Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Sound Insulation Prediction (v8.0.0)

Program copyright Marshall Day Acoustics 2014

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

Job Name:

Job No.:

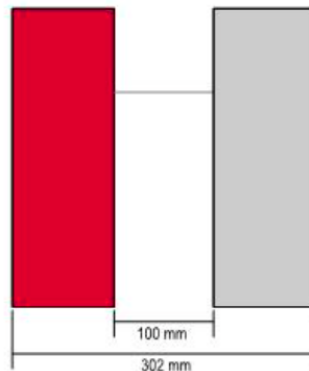
Page No.:

Notes:

Date:

Initials:

File Name: insul



R_w	54 dB
C	-1 dB
C_{tr}	-4 dB
D_{nTw}	56 dB

[V50m]
[A11m2]

System description

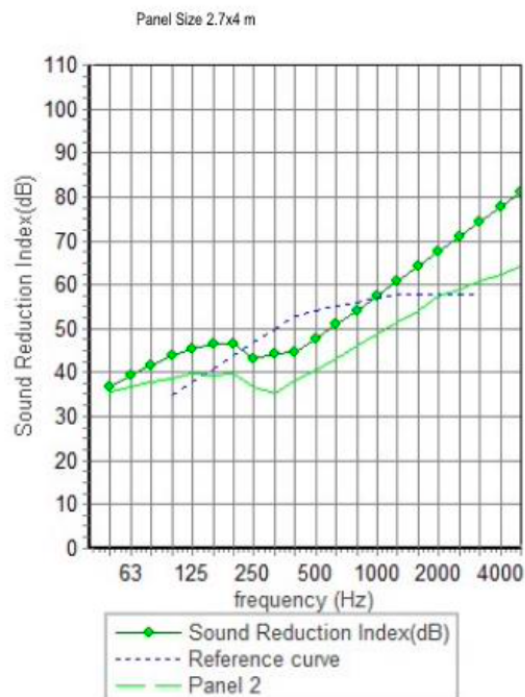
Panel 1 : 1 x 102.0 mm Brick (102.5) (ρ :1600 kg/m³, E:8.9GPa, η :0.02)

Cavity: Point connections, Stud spacing 600 mm (ρ :0 kg/m³, Rf:100 Pa.s/m²)

Panel 2 : 1 x 100.0 mm mm Concrete Block (ρ :1850 kg/m³, E:8.3GPa, η :0.02)

Mass-air-mass resonant frequency =19 Hz

frequency (Hz)	R(dB)	R(dB)
50	37	
63	39	39
80	42	
100	44	
125	45	45
160	46	
200	47	
250	43	44
315	44	
400	45	
500	48	47
630	51	
800	54	
1000	58	57
1250	61	
1600	64	
2000	67	67
2500	71	
3150	74	
4000	78	77
5000	81	



Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Sound Insulation Prediction (v8.0.7)

Program copyright Marshall Day Acoustics 2015

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

Job Name:

Job No.:

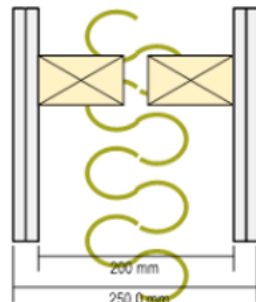
Page No.:

Notes:

Date:

Initials:

File Name: insul



R_w	65 dB
C	-3 dB
C_{tr}	-8 dB
D_{nTw}	67 dB
	[N50m2]
	[A11m2]

System description

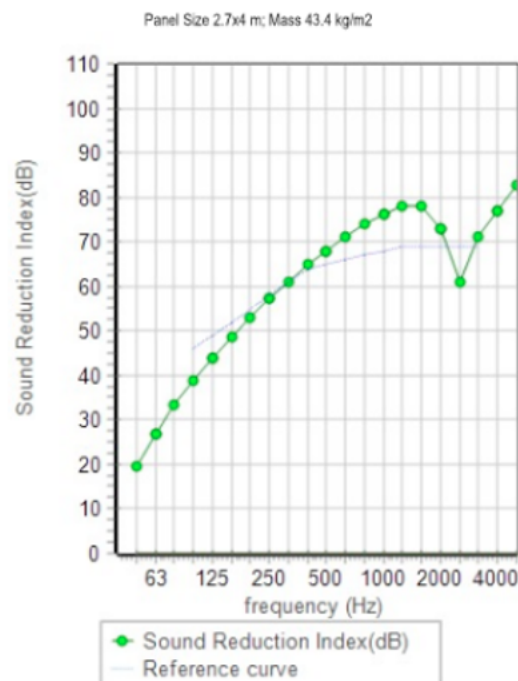
Panel 1 : 2 x 12.5 mm Gyproc SoundBloc 12.5mm (7.848 kg/m³, E:3.8GPa, ν :0.01)

Cavity: Double timber stud: Stud spacing 600 mm, Infill Fibreglass (10kg/m³) Thickness 100 mm (7:10 kg/m³, Rf:4000 Pa.s/m²)

Panel 2 : 2 x 12.5 mm Gyproc SoundBloc 12.5mm (7.848 kg/m³, E:3.8GPa, ν :0.01)

Mass-air-mass resonant frequency =35 Hz

frequency (Hz)	R(dB)	R(dB)
50	20	
63	27	24
80	33	
100	39	
125	44	42
160	49	
200	53	
250	57	56
315	61	
400	65	
500	68	67
630	71	
800	74	
1000	76	76
1250	78	
1600	78	
2000	73	65
2500	61	
3150	71	
4000	77	75
5000	83	



Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Timber floor - Treatment laid on sub-floor

Refurbishment/conversion timber separating floor

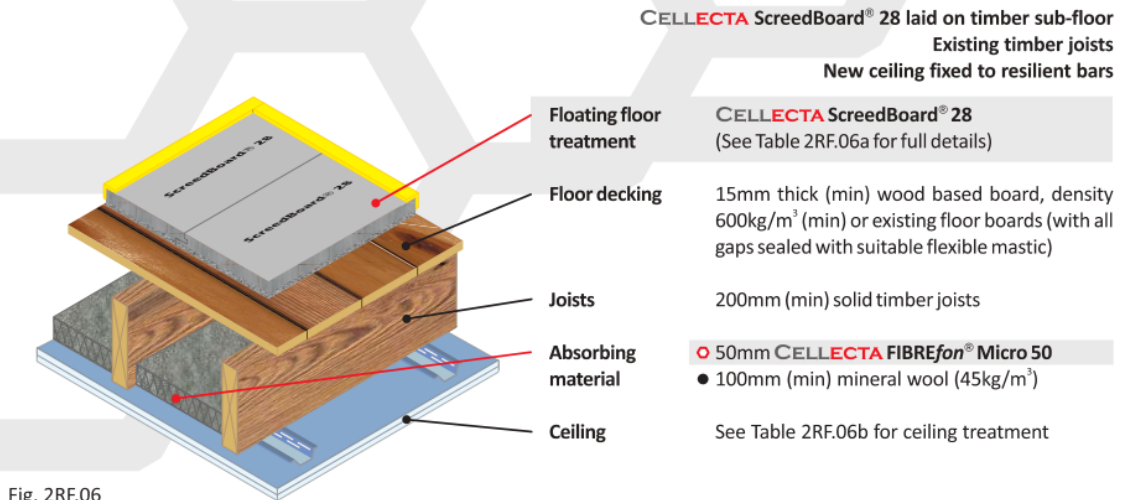


Fig. 2RF.06

FASTRACKCAD
ARCHITECTURAL CAD DATABASES

ns5Plus

Table 2RF.06a

Installation Details

Resilient overlay platform floor system

- ScreedBoard® 28** High density acoustic overlay board
Dimensions: 28mm x 600mm x 1200mm
Weight: 26kg/m² / 18.72kg/board
- CELLECTA Pro Adhesive**
ScreedBoard joint adhesive
Bottle size: 1L / 33m² coverage
- YELOfon® FS50**
Preformed flanking strip:
6mm x 50mm x 30mm x 2m

Additional Products for this application

- 50mm CELLECTA FIBREFON Micro 50 non-itch polyester quilt
- 100mm (min) mineral wool 45kg/m³

Install **RUBBERfon® TSS** (Threshold Support Strip) at door thresholds or where square edge boards meet, reducing excessive flex, whilst maintaining acoustic performance.
Composition: 100% recycled re-bonded rubber
Size: 8mm x 75mm x 1000mm

Provide an 5-10mm expansion gap between the habitable and communal area treatments

Remove a 40mm section of resilient layer off each edge to accommodate a Threshold Support Strip (TSS)

Table 2RF.06b

Ceiling Treatment Options

Ceiling boards must not penetrate or touch joists

- 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres.
- 30mm CELLECTA HP30 resilient bars mounted at right angles to the joists at 600mm (max) centres.

Ceiling treatment
Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m³) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m³) fixed with 42mm screws, with all joints staggered.

Standard resilient bars set at 450mm (max) centres

HP30 resilient bars set at 600mm (max) centres

+3 dB $R_w + C_{tr}$ ⁽¹⁾

+2 dB $L_{n,w}$ ⁽¹⁾

⁽¹⁾ Typical dB improvement of HP30 over 16mm resilient bars.

Acoustic Performance

Airborne: 52dB $R_w + C_{tr}$

Impact: 54dB $L_{n,w}$

Performance values quoted were achieved using 50 x 235mm solid timber and 16mm resilient bar at Sound Research laboratories, Sudbury in accordance with Approved Document E: Annex B: Procedures for sound insulation testing.
Airborne results tested in accordance with BS EN ISO 140-3:1995
Impact results tested in accordance with BS EN ISO 140-6:1998

Third Party Accreditation and Approvals



Environmental Credentials



01634 29-66-77



cellecta.co.uk



technical@cellecta.co.uk

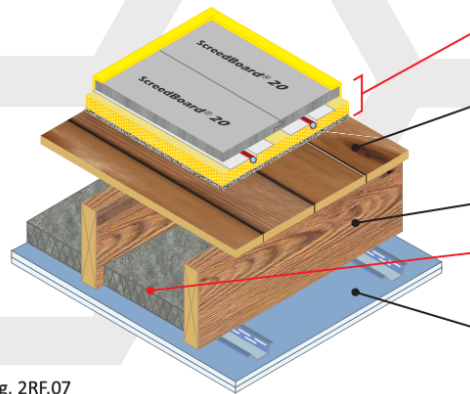
Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Refurbishment/conversion timber separating floor

CELLECTA Mojave® dry laid resilient system incorporating underfloor heating
Existing timber joists
New ceiling fixed to resilient bars



Floating floor treatment +UFH

CELLECTA Mojave® S1-8 platform floor system incorporating underfloor heating

Floor decking

15mm thick (min) wood based board, density 600kg/m³ (min) or existing floor boards (with all gaps sealed with suitable flexible mastic)

Joists

200mm (min) solid timber joists

Absorbing material

○ 50mm CELLECTA FIBREfon® Micro 50
● 100mm (min) mineral wool (45kg/m³)

Ceiling

See Table 2RF.07b for ceiling treatment

Fig. 2RF.07

FASTRACKCAD
ARCHITECTURAL CAD DATABASES

NBSPlus

Timber floor - Treatment laid on sub-floor

Table 2RF.07a

Installation Details

Resilient overlay platform floor system incorporating underfloor heating

CELLECTA Mojave® S1-8

Dry laid acoustic treatment incorporating underfloor heating system

1 ScreedBoard® 20

High conductivity overlay board:
20mm x 600mm x 1200mm
Weight: 25kg/m² / 18.00kg/board
Thermal resistance: 0.05m²K/W

A CELLECTA Pro Adhesive

ScreedBoard joint adhesive
Bottle size: 1L / 33m² coverage

2 ULTRAplate

Aluminium heat diffuser plate (to suit pipe installed):
130mm x 1000mm

3 XFLO® 250, 300, 500

High compressive strength routed XPS insulation board:
15-75mm x 600mm x 1250/2500mm
Compressive strengths available: 250, 300, 500kPa
Pipe centre: 150, 200, 300mm
Pipe bore size (OD): 10 - 20mm (manufactured to suit)

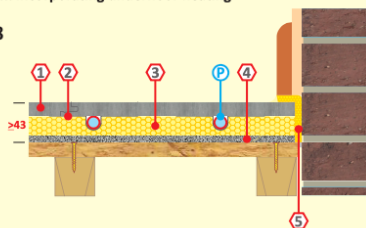
4 FIBREfon® 8

High performance resilient layer:
8mm x 600mm x 1200mm
Weight: 1.00kg/m² / 0.72kg/board

5 YELOfon® ES5/120

Perimeter edge strip:
5mm x 120mm x 50m

P UFH water pipe (by others)



HIGH COMPRESSIVE
250-500kPa
STRENGTH XPS

Table 2RF.07b

Ceiling Treatment Options

Ceiling boards must not penetrate or touch joists

- 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres.
- 30mm CELLECTA HP30 resilient bars mounted at right angles to the joists at 600mm (max) centres.

Ceiling treatment

Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m³) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m³) fixed with 42mm screws, with all joints staggered.



Standard resilient bars set at 450mm (max) centres



HP30 resilient bars set at 600mm (max) centres

+3 dB $R_w + C_{tr}^{(1)}$

+2 dB $L_{n,w}^{(1)}$

⁽¹⁾ Typical dB improvement of HP30 over 16mm resilient bars.

Acoustic Performance

Airborne: 52dB $R_w + C_{tr}$

Impact: 54dB $L_{n,w}$

Performance values quoted were achieved using 50 x 235mm solid timber and 16mm resilient bar at Sound Research laboratories, Sudbury in accordance with Approved Document E: Annex B: Procedures for

Third Party Accreditation and Approvals



CLASS B/f, S1
BS EN13501-1



SRL
Performance
Tested



bmbtrada
2015

Environmental Credentials



GWP
<5



100%
Recycled
Gypsum



zero
ODP

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E

Refurbishment/conversion timber separating floor

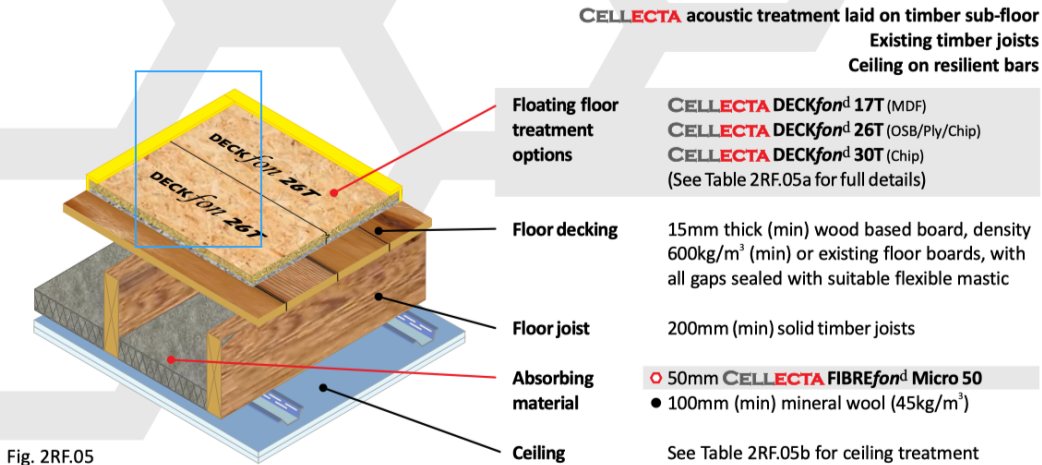


Fig. 2RF.05

FASTRACKCAD
ARCHITECTURAL CAD DATABASES

NSPlus

Timber Floor - Treatment laid on sub-floor

Table 2RF.05a

Installation Details

Resilient shallow overlay platform floor system

① **DECKfon^d 17T** Composite acoustic shallow overlay board
17mm x 600mm x 2400mm
Weight: 7.25kg/m² / 10.44kg/board

Ⓐ **CELLECTA fon Adhesive**
Acoustic board joint adhesive
Bottle size: 1L / 33m² coverage

② **YELOfon^d FS15**
Preformed flanking strip:
6mm x 15mm x 30mm x 2m

Airborne 50dB $R_w + C_{tr}$	Impact 56dB $L_{n,w}$
--	---------------------------------

Resilient shallow overlay platform floor system

③ **DECKfon^d 26T** Composite acoustic overlay board
26mm x 600mm x 2400mm
Chipboard: 13.80kg/m² / 19.87kg/board
Ply: 11.80kg/m² / 16.99kg/board
OSB: 12.36kg/m² / 17.79kg/board

Ⓐ **CELLECTA fon Adhesive**
Acoustic board joint adhesive
Bottle size: 1L / 33m² coverage

④ **YELOfon^d FS30**
Preformed flanking strip:
6mm x 30mm x 30mm x 2m

Airborne 51dB $R_w + C_{tr}$	Impact 57dB $L_{n,w}$
--	---------------------------------

Resilient overlay platform floor system

⑤ **DECKfon^d 30T** Composite acoustic overlay board
26mm x 600mm x 2400mm
Weight: 16.00kg/m² / 23.04kg/board

Ⓐ **CELLECTA fon Adhesive**
Acoustic board joint adhesive
Bottle size: 1L / 33m² coverage

⑥ **YELOfon^d FS30**
Preformed flanking strip:
6mm x 30mm x 30mm x 2m

Airborne 51dB $R_w + C_{tr}$	Impact 56dB $L_{n,w}$
--	---------------------------------

Table 2RF.05b

Ceiling Treatment Options
Ceiling boards must not penetrate or touch joists ● 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres. ○ 30mm CELLECTA HP30 resilient bars mounted at right angles to the joists at 600mm (max) centres.
Ceiling treatment Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m²) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m²) fixed with 42mm screws, with all joints staggered.
Standard resilient bars set at 450mm (max) centres
HP30 resilient bars set at 600mm (max) centres
+3 dB $R_w + C_{tr}$⁽¹⁾ +2 dB $L_{n,w}$⁽¹⁾
⁽¹⁾Typical dB improvement of HP30 over 16mm resilient bars.

Acoustic Performance

Performance values quoted were achieved using 50 x 235mm solid timber joists installed at Sound Research laboratories, Sudbury. Tested in accordance with Approved Document E: Annex B: Procedures for sound insulation testing.

Airborne results tested in accordance with BS EN ISO 140-3:1995

Impact results tested in accordance with BS EN ISO 140-6:1998

Third Party Accreditation and Approvals



01634 29-66-77

cellecta.co.uk

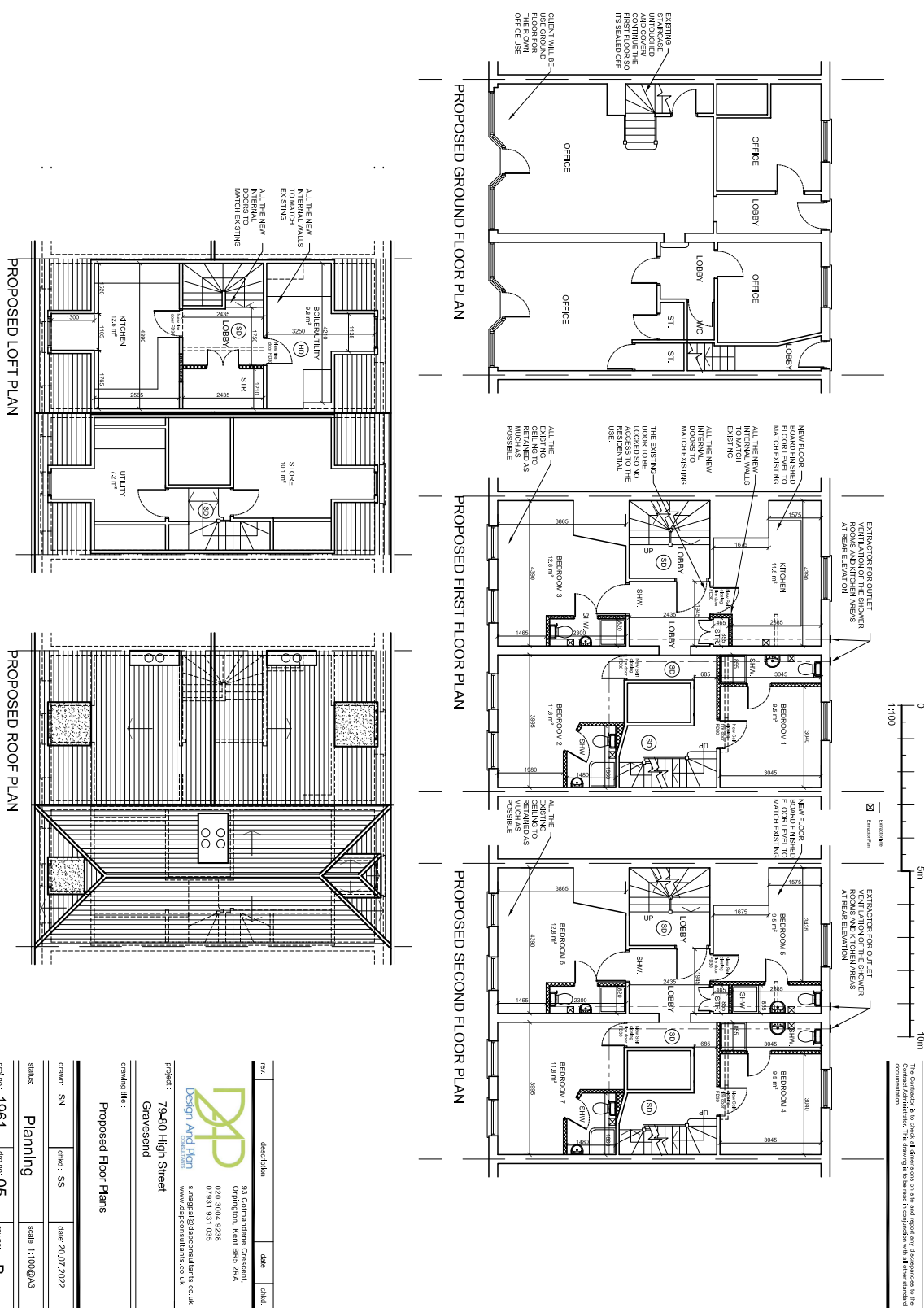
technical@cellecta.co.uk

75

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E



rev	description	date	checked
93	Coramandore Crescent, Oxtongton, Kent ME5 2PA	020 3004 8238	07931 931 035
94	5, airtight@depcoramlants.co.uk	www.depcoramlants.co.uk	
79-40 High Street			
Gravesend			
Drawing title:			
Proposed Floor Plans			
drawn: SN	checked: SS	date: 20.07.2022	
status: Planning	scale: 1:100@A3		
proj no: 1961	day no: 05	rev no: B	

Building Acoustic Test

Internal Sound Insulation Desktop Assessment

In Compliance with Building Regulation Approved Document Part E



rev	description	date	checked
1	39 Cornardene Crescent, Oxtington, Kent BN5 2BA 020 3004 8238 07931 931 035 s.nagari@airtightbuildingsolutions.co.uk www.airtightbuildingsolutions.co.uk		
2	79-80 High Street Gravesend		
3	79-80 High Street Gravesend		
4	79-80 High Street Gravesend		
5	79-80 High Street Gravesend		
6	79-80 High Street Gravesend		
7	79-80 High Street Gravesend		
8	79-80 High Street Gravesend		
9	79-80 High Street Gravesend		
10	79-80 High Street Gravesend		
11	79-80 High Street Gravesend		
12	79-80 High Street Gravesend		
13	79-80 High Street Gravesend		
14	79-80 High Street Gravesend		
15	79-80 High Street Gravesend		
16	79-80 High Street Gravesend		
17	79-80 High Street Gravesend		
18	79-80 High Street Gravesend		
19	79-80 High Street Gravesend		
20	79-80 High Street Gravesend		
21	79-80 High Street Gravesend		
22	79-80 High Street Gravesend		
23	79-80 High Street Gravesend		
24	79-80 High Street Gravesend		
25	79-80 High Street Gravesend		
26	79-80 High Street Gravesend		
27	79-80 High Street Gravesend		
28	79-80 High Street Gravesend		
29	79-80 High Street Gravesend		
30	79-80 High Street Gravesend		
31	79-80 High Street Gravesend		
32	79-80 High Street Gravesend		
33	79-80 High Street Gravesend		
34	79-80 High Street Gravesend		
35	79-80 High Street Gravesend		
36	79-80 High Street Gravesend		
37	79-80 High Street Gravesend		
38	79-80 High Street Gravesend		
39	79-80 High Street Gravesend		
40	79-80 High Street Gravesend		
41	79-80 High Street Gravesend		
42	79-80 High Street Gravesend		
43	79-80 High Street Gravesend		
44	79-80 High Street Gravesend		
45	79-80 High Street Gravesend		
46	79-80 High Street Gravesend		
47	79-80 High Street Gravesend		
48	79-80 High Street Gravesend		
49	79-80 High Street Gravesend		
50	79-80 High Street Gravesend		
51	79-80 High Street Gravesend		
52	79-80 High Street Gravesend		
53	79-80 High Street Gravesend		
54	79-80 High Street Gravesend		
55	79-80 High Street Gravesend		
56	79-80 High Street Gravesend		
57	79-80 High Street Gravesend		
58	79-80 High Street Gravesend		
59	79-80 High Street Gravesend		
60	79-80 High Street Gravesend		
61	79-80 High Street Gravesend		
62	79-80 High Street Gravesend		
63	79-80 High Street Gravesend		
64	79-80 High Street Gravesend		
65	79-80 High Street Gravesend		
66	79-80 High Street Gravesend		
67	79-80 High Street Gravesend		
68	79-80 High Street Gravesend		
69	79-80 High Street Gravesend		
70	79-80 High Street Gravesend		
71	79-80 High Street Gravesend		
72	79-80 High Street Gravesend		
73	79-80 High Street Gravesend		
74	79-80 High Street Gravesend		
75	79-80 High Street Gravesend		
76	79-80 High Street Gravesend		
77	79-80 High Street Gravesend		
78	79-80 High Street Gravesend		
79	79-80 High Street Gravesend		
80	79-80 High Street Gravesend		
81	79-80 High Street Gravesend		
82	79-80 High Street Gravesend		
83	79-80 High Street Gravesend		
84	79-80 High Street Gravesend		
85	79-80 High Street Gravesend		
86	79-80 High Street Gravesend		
87	79-80 High Street Gravesend		
88	79-80 High Street Gravesend		
89	79-80 High Street Gravesend		
90	79-80 High Street Gravesend		
91	79-80 High Street Gravesend		
92	79-80 High Street Gravesend		
93	79-80 High Street Gravesend		
94	79-80 High Street Gravesend		
95	79-80 High Street Gravesend		
96	79-80 High Street Gravesend		
97	79-80 High Street Gravesend		
98	79-80 High Street Gravesend		
99	79-80 High Street Gravesend		
100	79-80 High Street Gravesend		