Chartered Building Consultancy

APPROVED DOCUMENT E 2003
ANC
REGISTERED PRE-COMPLETION TEST BODY

Acoustic South East

The Signal Post

Sound Insulation Test Report

Constructionline Part of Capita plc

CQMS Safety Scheme

ANC THE ASSOCIATION OF NOISE CONSULTANTS

ATTMA

Acoustic South East is a Trading Name of Acoustic Associates Sussex Ltd, Company Registration No: 5646519

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SOUND INSULATION TEST REPORT

Address of building tested	79 Rowlands Road, Worthing, BN11 3JN
Property type(s)	Houses/Flats
Date(s) of testing	09 Aug 2024
ANC Registered Testers	Simon Barrett
Report prepared for	The Worthing Well Ltd
Report created at	09/08/2024 12:45:57
Report number	J3539
Registered ANC test organisation	Acoustic Associates Sussex Ltd t/a Acoustic South East, 8 Highdown House, Shoreham-by-Sea, BN43 5PB
ANC organisation number	117
Report prepared by	Simon Barrett BSc(Hons) MSc MIOA
Checked by	Scott Castle BSc(Hons) CEnvH MCIEH MIOA

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ADvANCE

NOTICE TO BUILDING CONTROL OFFICER

Certification of Test Results

ANC operates an online, secure, paperless certification system for sound insulation tests.

The online verification (certification) system means that Building Control Bodies will need to follow the steps below to verify the results quoted in the relevant test report:

1. Go to the ANC secure server at www.anc-advance.co.uk

2. Enter the following in the spaces provided:

Task Number:	**118618**
Task Password:	**947YKT**

3. Select role "Building Control Officer" and press "Login"

4. You will then see a summary list of results of all the Tests undertaken to date for this project as held on the secure primary server and you can print this table for your records.

EXECUTIVE SUMMARY

The results show that the room pairs tested satisfy the requirements of Approved Document E and also comply with the Local Authority's enhanced criterion for the DnTw + Ctr to achieve 50dB or higher.

RESULTS SUMMARY

TABLE 1: Airborne Tests

Test No.	Source room	Vol m^3	Receiver room	Vol m^3	Project type	Construction type	$D_{nT,w} + C_{tr}$, dB		Pass / fail †
							Result	Target	
1	Front Bar Room	70	1st Floor Flat Lounge	40	HFCON	Floor (F1)	50	≥ 43	✓
2	Rear Bar Room	40	1st Floor Flat Rear Bedroom	25	HFCON	Floor (F1)	52	≥ 43	✓

KEY:

*All tests appended with a **letter** are retests (ordered alphabetically)*

Project types:

HFNB	Purpose built houses and flats
RRNB	Purpose-built rooms for residential purposes
HFCON	Houses or flats formed by material change of use
RRCON	Rooms for residential purposes formed by material change of use.

Pass / fail:

† Responsibility for deciding on compliance with Building Regulations lies with the Building Control body.

✓	Performance at or better than the performance standard cited in Building Regulations Approved Document E
×	Performance is worse than the performance standard cited in Building Regulations Approved Document E
H	Historic building - Result should be displayed in a conspicuous place inside the building in accordance with Regulation 1 or 20(1) and (5) - ADE ref section 0.7

CONSTRUCTION TYPES

Reference	Wall / floor	Description
F1	Floor	Carpet, Existing Floorboards (type unknown), Existing Timber Joists, Existing Lath & Plaster Ceiling (made good where damaged) overboarded with 15mm Fireline. New Suspended MF Grid ceiling on acoustic hangers, incorporating 150-200mm Void, 100mm mineral fibre and 2x 15mm Soundbloc

APPLICABLE TEST CODES / STANDARDS

Tests have been taken in accordance with the following test codes and standards. Any deviations are recorded in the individual test reports.

Building Regulations:

Approved Document E of The Building Regulations*: Resistance to the passage of sound* sets out the following requirements:

Houses and flats:

Airborne Sound Insulation:

The insulation values for airborne insulation for conversion floors & walls shall not be less than $D_{nT,w} + C_{tr}$ = 43 dB.

Enhanced Criterion:

The Local Planning Authority has requested that the insulation value for the airborne insulation through this floor is $D_{nT,w} + C_{tr}$ = 50 dB or higher, outlined within the (copied) Plannner's comments below:

> "That brings me to the current planning application. I'm afraid I do have concerns as to the potential noise impacts of the proposed wine bar/tap room use on the amenities of the upper floor flat(s). In particular, I need to be satisfied that sound insulation between the ground-floor premises and the flats above is sufficiently substantial to ensure noise from patrons will not be disturbing for the occupiers of the flats - particularly if the intention is to play ambient background music on the premises. Assuming the intention *is* to have background music the Council's Environmental Health Officer (EHO) has advised that:
>
> *The L_{Aeq} of the background music shall not exceed the representative background noise level L_{A90} in the upstairs property, without the entertainment noise, and the L_{10} of the background music shall not exceed the representative background noise level L_{90} in the upstairs property, without the entertainment noise, in any 1/3 octave band between 40Hz and 160Hz.*
>
> If it can be ensured that the premises will be closed and vacated by 2300hrs the EHO has advised that less stringent criteria can be applied and the objective set out above relaxed by 5dB. It is considered the latter would likely be achieved if the sound insulation between the properties achieves a minimum airborne sound insulation value of 50dB (DnTw + Ctr dB) together with the level of background music set (as a condition of planning permission) to be no louder than 75dBL(A)eq 1 min, measured 1m from any speaker. The EHO advises that any speakers should be wall-mounted on anti vibration mounts to ensure there is no structural transmission noise and no speakers should be placed in the ceiling void."

Standards:

- Results of the measurements, in terms of single-figure ratings for airborne sound insulation are provided as Weighted Standardised Level Differences $D_{nT,w} + C_{tr}$ as required by BS EN ISO 140-4 Acoustics - Measurement of sound insulation in buildings and of building elements - Part 4: Field measurements of airborne sound insulation between rooms 1998.

They are also defined in ISO 717-1 Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation 1997.

- Results of the measurements, in terms of single-figure ratings for impact sound insulation are provided as Weighted Standardised Impact Sound Pressure Levels $L'_{nT,w}$ (for impact sound) as required by BS EN ISO 140-7 Acoustics - Measurement of sound insulation in buildings and of building elements - Part 7: Field measurements of impact sound insulation of floors 1998.

  They are also defined in ISO 717-2 Acoustics - Rating of sound insulation in buildings and of building elements - Part 2: Impact sound insulation 1997.

- Reverberation Time measurements are specifically defined in BS EN ISO 3382 Measurement of Room Acoustic Parameters - Part 2: Reverberation Time in Ordinary Rooms 2008

- Test Methods and Procedures are also detailed within the ANC Practice Guidance for sound insulation testing in dwellings v1.1 2018

- All results criteria are set out in Approved Document E 2003 (as amended 2015) of The Building Regulations 2010*: Resistance to the passage of sound*

TEST PROCEDURES

Airborne sound insulation

Two loudspeakers were placed facing into the corners, separated from each other, at different heights in the source room and angled across the room to create a diffuse sound field. An amplifier was used to broadcast pink noise through the loudspeakers using two individual noise generators. The spectrum shape of the reverberant noise was checked to ensure that each 1/3 octave band was within 6 dB of its neighbouring bands. The spectrum shape was adjusted, if necessary, to comply with this criterion (Firstly loudspeaker position/s are adjusted until the criterion is achieved. If this fails the spectrum shape is adjusted using a graphic equaliser).

Measurements were taken in the source room at each 1/3 octave band centre frequency between 100 Hz and 3.15 kHz using the "sweep" technique as described in ISO140 (at least 30 secs.). Further measurements were then taken in the same way in the receiving room on the other side of the test element. The reverberation time was also obtained using the interrupt stationery method (using pink noise as the source) for each relevant 1/3 octave centre frequency in the receiving room. This was spatially averaged over 6 positions in the room using 1 source position.

Ambient sound pressure levels (without the source operating) were also taken at each frequency in the receiving rooms using the "sweep" technique as described in ISO140 (at least 30 secs). These too were spatially-averaged. Dominant sources of background noise were as follows:

EQUIPMENT USED

Description	Serial number	Manufacturer	Model number	Calibration certificate number	Calibration expires
RCF Art 3	VBCF01258	RCF	Art 310A MK4	N/A	N/A
Pink Noise 3	PinkNoise3	NTi	Minirator MR1	N/A	N/A
Pink Noise 4	PinkNoise4	NTi	Minirator MR1	N/A	N/A
RCF Art 4	VBCF01264	RCF	Art 310A MK4	N/A	N/A
Nor A Calibrator	30974	Norsonic	1251	TCRT23/1372	15/05/2025
Norsonic A	31460	Norsonic	Nor118	TCRT23/1388	18/05/2025
Norsonic A-Preamplifier	30779	Norsonic	1206	TCRT23/1388	19/05/2025
Norsonic A - Microphone	91973	Norsonic	1225	TCRT23/1388	15/05/2025

Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

Client: The Worthing Well Ltd **Date of test:** 09/08/2024

Source room: Front Bar Room **Receiving room:** 1st Floor Flat Lounge **Partition type:** Floor

Construction type and description:

F1 Carpet, Existing Floorboards (type unknown), Existing Timber Joists, Existing Lath & Plaster Ceiling (made good where damaged) overboarded with 15mm Fireline. New Suspended MF Grid ceiling on acoustic hangers, incorporating 150-200mm Void, 100mm mineral fibre and 2x 15mm Soundbloc

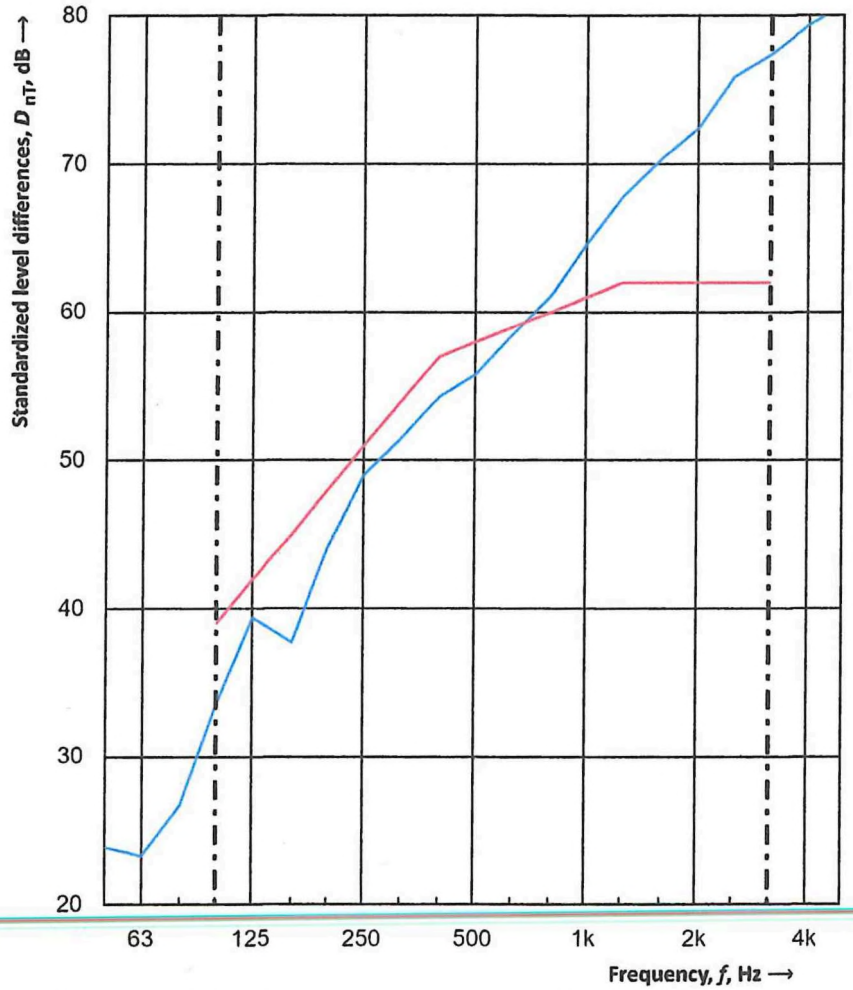
Deviations from test procedures and other relevant observations (if any):
Carpet, Existing Floorboards (type unknown), Existing Timber Joists, Existing Lath & Plaster Ceiling (made good where damaged) overboarded with 15mm Fireline. New Suspended MF Grid ceiling on acoustic hangers, incorporating 150-200mm Void, 100mm mineral fibre and 2x 15mm Soundbloc

Source room volume: 70 m^3
Receiving room volume: 40 m^3

Frequency range according to the curve of reference values (ISO 717-1)

Frequency f Hz	D_{nT} (one-third octave) dB
50	23.9
63	23.3
80	26.7
100	33.5
125	39.4
160	37.7
200	44.1
250	49.0
315	51.5
400	54.3
500	55.8
630	58.5
800	61.1
1000	64.6
1250	67.8
1600	70.4
2000	72.4
2500	75.9
3150	≥ 77.4 *
4000	≥ 79.4 *
5000	≥ 80.8 *

* Result should be taken as limit of measurement due to low SNR in receiver room (≤6 dB)



Rating according to ISO 717-1
$D_{nT,w}$ (C_{tr}) = 58 (-8) dB $D_{nT,w} + C_{tr}$ = 50 dB Target: ≥ 43 dB **PASS**
Evaluation based on field measurement results obtained by an engineering method

ANC Task / Test No.: 118618/1 Name of test institute: Acoustic Associates Sussex Ltd t/a Acoustic South

	East
Person in charge of test:	Simon Barrett

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Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

Client: The Worthing Well Ltd **Date of test:** 09/08/2024

Source room: Rear Bar Room **Receiving room:** 1st Floor Flat Rear Bedroom **Partition type:** Floor

Construction type and description:

F1 Carpet, Existing Floorboards (type unknown), Existing Timber Joists, Existing Lath & Plaster Ceiling (made good where damaged) overboarded with 15mm Fireline. New Suspended MF Grid ceiling on acoustic hangers, incorporating 150-200mm Void, 100mm mineral fibre and 2x 15mm Soundbloc

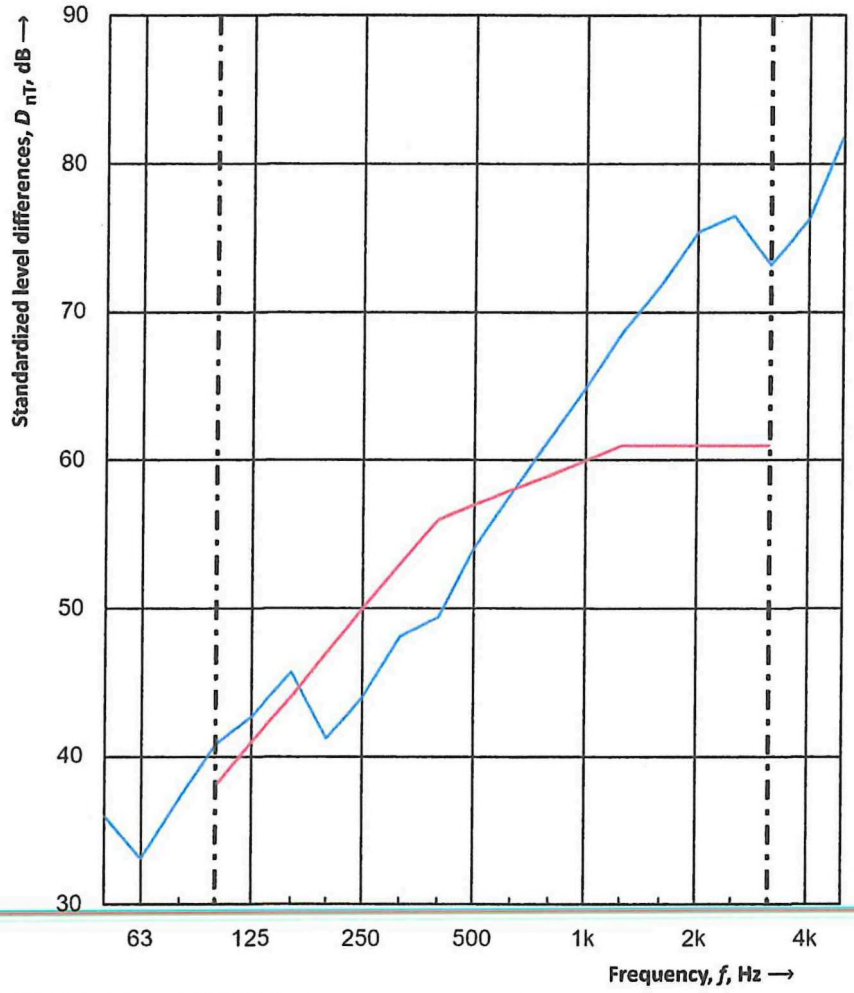
Deviations from test procedures and other relevant observations (if any):
Carpet, Existing Floorboards (type unknown), Existing Timber Joists, Existing Lath & Plaster Ceiling (made good where damaged) overboarded with 15mm Fireline. New Suspended MF Grid ceiling on acoustic hangers, incorporating 150-200mm Void, 100mm mineral fibre and 2x 15mm Soundbloc

Source room volume: 40 m^3
Receiving room volume: 25 m^3

Frequency range according to the curve of reference values (ISO 717-1)

Frequency f Hz	D_{nT} (one-third octave) dB
50	36.0
63	33.1
80	37.2
100	40.8
125	42.7
160	45.7
200	41.2
250	44.0
315	48.1
400	49.4
500	54.1
630	57.8
800	61.5
1000	64.9
1250	68.6
1600	71.9
2000	75.4
2500	76.5
3150	73.2
4000	76.3
5000	≥ 82.1 *

* Result should be taken as limit of measurement due to low SNR in receiver room (≤6 dB)



Rating according to ISO 717-1
$D_{nT,w}$ (C_{tr}) = 57 (-5) dB $D_{nT,w} + C_{tr}$ = 52 dB Target: ≥ 43 dB **PASS**
Evaluation based on field measurement results obtained by an engineering method

ANC Task / Test No.: 118618/2 Name of test institute: Acoustic Associates Sussex Ltd t/a Acoustic

	South East
Person in charge of test:	Simon Barrett