



PREPARED: Friday, 15 September 2023

APPROVED DOCUMENT E 2003
PRE-COMPLETION TESTING SOUND INSULATION REPORT:
26 PROSPECT STREET, READING

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LIST OF ATTACHMENTS

ASI3029/AB1, AB2 & AB4 Airborne Sound Insulation Test Result Graphs

Project Ref:	ASI3029	Title:	26 Prospect Street, Reading
Report Ref:	I3029.230607.PCT	Title:	Approved Document E 2003 Pre-Completion Testing Sound Insulation Report
Client Name:	McClure Fisher Family Pension 2010		
ANC Registered Tester:	110-04		
ANC Test Number:	110/76611		
Clarke Saunders Acoustics Winchester SO22 5BE		This report has been prepared in response to the instructions of our client. It is not intended for and should not be relied upon by any other party or for any other purpose.	



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.theanc.co.uk
2. Navigate to the **ADvANCE** page which links to the ANC site available for use by BCOs.
3. Enter the following in the spaces provided:

Task Number: **76611** Task Password: **X609R7**
4. Select role "Building Control Officer" and press "Login"
5. You will then see a summary list of results of all the Tests undertaken to date for this project (Task) as held on the secure primary server and you can print this table for your records.

1.0 INTRODUCTION

- 1.1 This is an ANC Registered Report with the unique registration number 110/04. Clarke Saunders Associates, Westgate House, 39-41 Romsey Road, Winchester has been commissioned by the McClure Fisher Family Pension 2010, Harpsden House, Gillotts Lane, Henley-on-Thames RG9 4AY to perform sound insulation tests on the floor separating the ground floor dentist use from the newly formed residential flat of the converted building at 26 Prospect Street, Caversham, Reading RG4 8JG.
- 1.2 The airborne sound insulation of the separating floor is to be assessed in accordance with Approved Document E Resistance to the passage of sound (2003 Edition) of The Building Regulations 2010.

2.0 TEST PROCEDURES AND EQUIPMENT

- 2.1 Tests were undertaken on 28th April 2023 by Matt Sugden, registered tester 110-04 on the ANC Register at time of testing. Tests were undertaken in full accordance with BS EN ISO 140-4: 1998 *Acoustics – Measurement of sound insulation in buildings and of building elements – Part 4: Field measurements of airborne sound insulation between rooms*.

2.2 AIRBORNE SOUND INSULATION TEST PROCEDURE

- 2.2.1 High volume 'pink' noise was generated from two loudspeakers in the source room, positioned so as to obtain a diffuse sound field within the space. The sound sources were driven by similar, but uncorrelated signals. A spatial average of the resulting one-third octave band noise levels was obtained within the source room from measurements using a moving microphone technique over a minimum period of 30 seconds, as prescribed within the Standard. This measurement procedure was repeated in the receive room.

2.3 REVERBERATION TIME MEASUREMENT PROCEDURE

- 2.3.1 The reverberation time (RT) was measured in each receive room, in order to correct for room reverberant characteristics. A broadband noise was generated within the room and stopped instantaneously. The decay time was measured using the RT function of the Norsonic 118 sound level meter. At least one loudspeaker position and three microphone positions were used with two readings in each case, in order to obtain an average result.

2.4 BACKGROUND NOISE

- 2.4.1 Background noise levels were measured in each receiver room in order to correct the received noise measurements for the influence of the prevailing noise climate as in accordance with BS EN 140 part 4.
- 2.4.2 The prevailing background noise was road traffic noise from the surrounding roads.
- 2.4.3 Some measurements were limited by high background noise levels. These are indicated on the results graphs, "≥", to indicate a "Limit of Measurement" value.

2.5 TEST EQUIPMENT

- 2.5.1 The following equipment was used in the tests:

EQUIPMENT	MANUFACTURER AND TYPE	SERIAL NUMBER	LAST CALIBRATION	CERTIFICATE NUMBER
Precision integrating sound level meter & analyser	Norsonic type 118	31511	February 2023	TCRT23/1138
	Pre-amp	30553		
	Microphone	81838		
Loudspeaker	Mackie Thump 12A	2051072AKMC1327	N/A	N/A
Loudspeaker	Mackie Thump 12A	205440901AKNV0117	N/A	N/A
Pink noise generator	Nti Minirator MR1	N/A	N/A	N/A
Pink noise generator	Nti Minirator MR1	N/A	N/A	N/A

2.6 TEST ENVIRONMENT

2.6.1 The following table details the flat tested and the type of separating floor construction. The approximate areas of floor tested, volumes of the rooms and directions of the airborne tests are also shown.

TEST ELEMENT	SOURCE	VOL.	RECEIVE	VOL.	TEST AREA	CONSTRUCTION
Floor	Waiting Room	95 m ³	Kitchen	38 m ³	16 m ²	200mm timber joist with 18mm chipboard deck and Collecta DECKfon 26T flooring; 25mm resilient bar with 2 x 12.5mm plasterboard ceiling; 100mm Rockwool Soundslab between joists
Floor	Office	18 m ³	Bedroom	37 m ³	15 m ²	
Floor	Office	18 m ³	Bedroom	37 m ³	15 m ²	As above with additional Tecsound 10kg/m ² mass layer over floor and enhanced sealing of junction with the party wall

- 2.6.2 All the rooms tested were in a finished state, with doors fitted, walls painted and all sockets installed. The rooms had varying states of floor finishes which are described in the table below.

ROOM	FLOOR FINISH
Kitchen	Timber deck
Bedroom	Timber deck / Tecsound

2.7 COMPLIANCE WITH ANNEX B OF APPROVED DOCUMENT E 2003

- 2.7.1 All the procedures described in Annex B of Approved Document E 2003 of the Building Regulations 2010 have been followed except for the following, given in the table below.

SECTION OF ANNEX B	ANNEX B REQUIREMENT	REASON FOR NON-COMPLIANCE
B2.15	When measuring airborne sound insulation between a pair of rooms of unequal volume, the sound source should be in the larger room	The office in the non-domestic use at ground floor was of lower volume than the bedroom above. The test direction represents the sound insulation towards the more sensitive use.

3.0 PERFORMANCE REQUIREMENTS

- 3.1 The performance rating is to be undertaken in full accordance with BS EN ISO 717-1: 1997 *Acoustics – Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation* and BS EN ISO 717-2: 1997 *Acoustics – Rating of sound insulation in buildings and of building elements Part 2: Impact sound insulation*.

3.2 DESIGN CRITERIA

- 3.2.1 The following table presents the insulation values required by Approved Document E (2003 edition) for dwelling-houses and flats formed by material change of use

TEST TYPE	TEST ELEMENT	APPROVED DOCUMENT E 2003 REQUIREMENT
Airborne Sound Insulation	Floor	$D_{nT,w} + C_{tr} \geq 43\text{dB}$

NB Higher values of $D_{nT,w} + C_{tr}$ represent better sound insulation

The airborne sound insulation tests of Weighted Standardised Level Difference, $D_{nT,w} + C_{tr}$, were undertaken on the floor.

3.3 AIRBORNE SOUND INSULATION RESULTS

- 3.3.1 Figures ASI3029/AB1, AB2 and AB4, attached, shows the one-third octave band spectrum results of the tests for airborne sound insulation. The following table summarises these results:

TEST ELEMENT		SOURCE	RECEIVE	CRITERION	TEST RESULT	PASS/FAIL
AB1	Floor	Waiting Room	Kitchen	$\geq D_{nT,w} + C_{tr}$ 43dB	$D_{nT,w} + C_{tr}$ 39dB	Fail
AB2	Floor	Office	Bedroom	$\geq D_{nT,w} + C_{tr}$ 43dB	$D_{nT,w} + C_{tr}$ 41dB	Fail
AB4	Floor	Office	Bedroom	$\geq D_{nT,w} + C_{tr}$ 43dB	$D_{nT,w} + C_{tr}$ 46dB	Pass

NB Higher values of $D_{nT,w} + C_{tr}$ represent better sound insulation

3.4 ANC ONLINE LOGIN DETAILS

- 3.4.1 Full details of the test results can be accessed via the Association of Noise Consultants' online database. Please refer to the instructions on the 'Notice to Building Control Officers' page at the start of this report.

4.0 CONCLUSIONS

- 4.1 Sound insulation tests have been undertaken in the newly converted residential flat 26 at Prospect Street, Caversham, Reading RG4 8JG in accordance with the test procedures defined in Approved Document E 2003 of the Building Regulations 2010.
- 4.2 Rating of the airborne sound insulation of the floor has been derived in accordance with the measurement and rating procedures defined in BS EN ISO 140 Part 4 and BS EN ISO 717 Part 1, respectively.
- 4.3 The results of the airborne sound insulation tests of the floor as originally presented fail the requirements of Approved Document E 2003 of the Building Regulations 2010.
- 4.4 Following subsequent works undertaken, the results of the airborne sound insulation test of the floor between the office and bedroom meet the requirements of Approved Document E 2003 of the Building Regulations 2010.

Matt Sugden

M A Sugden
MIOA
Technical Director
ANC Registration No. 110-04



I G MacArthur
MIOA
Associate
ANC Registration No. 110-10

Airborne Sound Insulation Test

Figure :

AS13029/AB1

Standardised level difference according to ISO 140-4

Field measurements of airborne sound insulation between rooms

(NB Higher $D_{nT,w} + C_{tr}$ figures denote better sound insulation performance)

Construction Tested:

200mm timber joist with 18mm chipboard deck and
Cellesta DECKfon 26T flooring; 25mm resilient bar with 2
x 12.5mm plasterboard ceiling; 100mm Rockwool
Soundslab between joists

Rooms Tested From : **Waiting Room**
To : **Kitchen/diner**

95 m³
38 m³

Frequency Hz	D_{nT} dB
100	23.0
125	24.9
160	27.4
200	33.3
250	39.8
315	44.1
400	49.0
500	52.1
630	57.5
800	61.5
1k	63.7
1.25k	≥ 65.4
1.6k	≥ 65.3
2k	63.9
2.5k	65.1
3.15k	≥ 70.9

Shift Curve By:	-4 dB
Sum of Adverse Deviations =	26.6 dB
$C_{tr} =$	-9 dB
$D_{nT,w} =$	48 dB

$$D_{nT,w} + C_{tr} = 39 \text{ dB}$$

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Test Standard: BS EN ISO 140-4

Rating Standard: BS EN ISO 717-1

Test Date: 28/04/2023

Signature: Matt Sugden

Authorised Tester: M A Sugden (ANC tester number 110/4)

CSA Project Number: AS13029

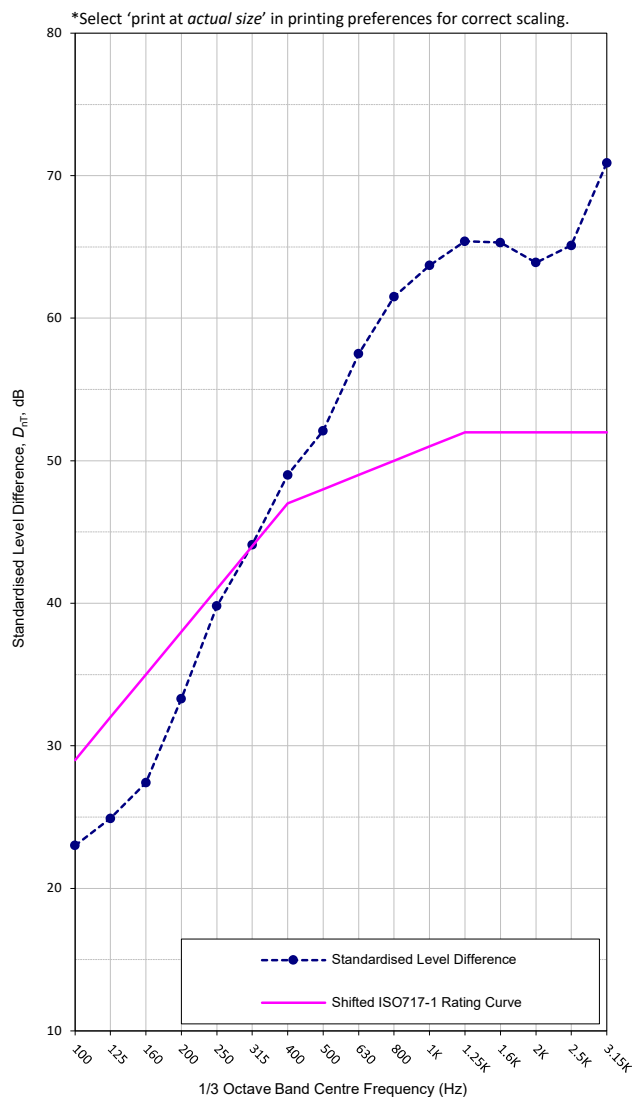
ANC Task Number: 76611

Client: McClure Fisher Family Pension 2010

Site: 26 Prospect Street, Caversham, Reading, RG4 8JG



Westgate House, 39-41 Romsey Rd, Winchester, SO22 5BE



Airborne Sound Insulation Test

Figure :

AS13029/AB2

Standardised level difference according to ISO 140-4

Field measurements of airborne sound insulation between rooms

(NB Higher $D_{nT,w} + C_{tr}$ figures denote better sound insulation performance)

Construction Tested:

200mm timber joist with 18mm chipboard deck and
Collecta DECKfon 26T flooring; 25mm resilient bar with 2 x
12.5mm plasterboard ceiling; 100mm Rockwool
Soundslab between joists

Rooms Tested From : **Office**
To : **Bedroom**

18 m³
37 m³

Frequency Hz	D_{nT} dB
100	24.0
125	30.1
160	29.6
200	34.6
250	37.1
315	41.8
400	47.8
500	52.5
630	57.9
800	62.0
1k	66.4
1.25k	68.6
1.6k	69.5
2k	66.1
2.5k	66.6
3.15k	75.0

Shift Curve By: -3 dB
Sum of Adverse Deviations = 28.0 dB
 C_{tr} = -8 dB
 $D_{nT,w}$ = 49 dB

$$D_{nT,w} + C_{tr} = 41 \text{ dB}$$

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Test Standard: BS EN ISO 140-4
Rating Standard: BS EN ISO 717-1
Test Date: 28/04/2023

Signature: Matt Suggden
Authorised Tester: M A Suggden (ANC tester number 110/4)

CSA Project Number: AS13029

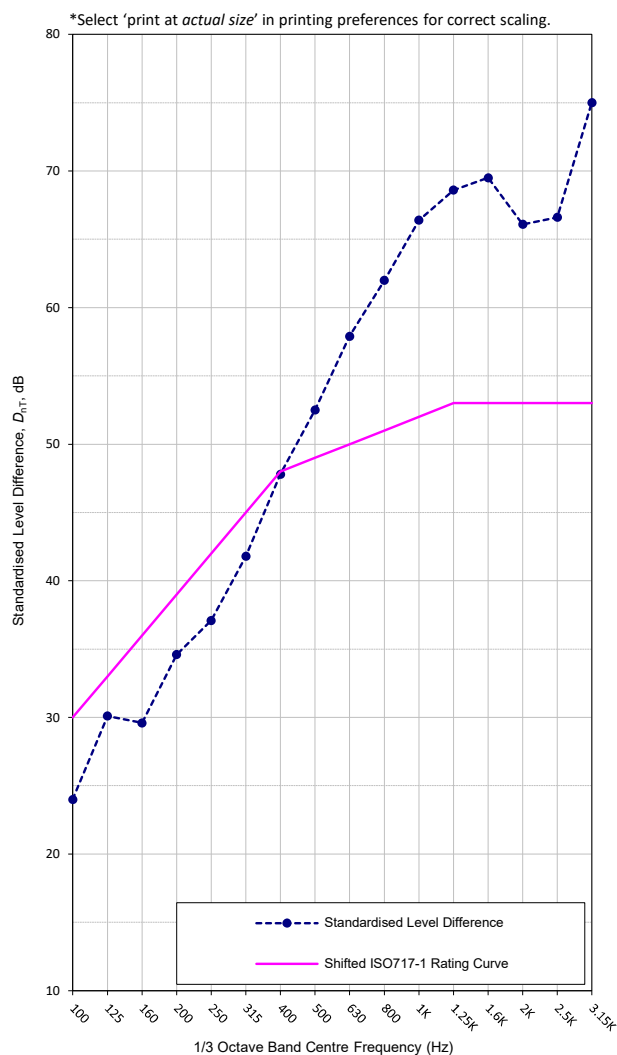
ANC Task Number: 76611

Client: McClure Fisher Family Pension 2010

Site: 26 Prospect Street, Caversham, Reading, RG4 8JG



Westgate House, 39-41 Romsey Rd, Winchester, SO22 5BE



Airborne Sound Insulation Test

Figure :

AS13029/AB4

Standardised level difference according to ISO 140-4

Field measurements of airborne sound insulation between rooms

(NB Higher $D_{nT,w} + C_{tr}$ figures denote better sound insulation performance)

Construction Tested:

200mm timber joist with 18mm chipboard deck and
Collecta DECKfon 26T flooring; 25mm resilient bar with 2 x
12.5mm plasterboard ceiling; 100mm Rockwool
Soundslab between joists. Additional Tecsound 10kg/m2
mass layer over floor and enhanced sealing of junction

Rooms Tested From : **Office**
To : **Bedroom**

18 m³
37 m³

Frequency Hz	D_{nT} dB
100	28.0
125	35.5
160	36.0
200	39.8
250	43.1
315	49.0
400	57.1
500	58.9
630	64.1
800	68.5
1k	71.1
1.25k	74.4
1.6k	≥ 75.5
2k	≥ 75.5
2.5k	≥ 77.7
3.15k	≥ 80.4

Shift Curve By: 3 dB
Sum of Adverse Deviations = 29.6 dB
 C_{tr} = -9 dB
 $D_{nT,w}$ = 55 dB

$$D_{nT,w} + C_{tr} = 46 \text{ dB}$$

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Test Standard: BS EN ISO 140-4
Rating Standard: BS EN ISO 717-1
Test Date: 05/06/2023

Signature: Matt Sugden
Authorised Tester: M A Sugden (ANC tester number 110/4)

CSA Project Number: AS13029

ANC Task Number: 76611

Client: McClure Fisher Family Pension 2010

Site: 26 Prospect Street, Caversham, Reading, RG4 8JG



Westgate House, 39-41 Romsey Rd, Winchester, SO22 5BE

