



SOUND INSULATION TEST REPORT

Sound Insulation testing in accordance with Test
Standards BS EN ISO 140-4 & BS EN ISO 140-7

Report Reference Number: 28423

Report Date: 12/05/2023

Abstract

Sound Insulation Testing is the process of measuring how much noise a building element, normally a wall or a floor, stops from travelling through to a neighbouring property.

This report describes the process taken and the results obtained from the sound insulation testing at 52 Albert Avenue, Manchester, M25 0LX.

Competent Tester

Testing was conducted by Andy Todd who is a member of the SITMA Sound Insulation Testing Registered Testers Scheme, Registration Number: 7175

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The SITMA Registered Testers' Scheme

This report was conducted by a tester that is registered with the SITMA Registered Testers' Scheme for Sound Insulation Testers. More information on the scheme, the lodgement system, quality control and auditing are discussed below.

Scheme Member Conducting this test

The tester that conducted your testing was:	Andy Todd	
Linked to:	Noise Control Solutions Limited, 44 Heyes Road, , Orrell, WN5 8RJ.	

Entry Requirements

In order to enter the SITMA Registered Testers' Scheme, testers are required to either:

- Have completed the Institute of Acoustics Certificate of Competence in Building Acoustics Measurements (CCBAM), or
- Have been assessed by SITMA to hold suitable, demonstrable evidence of competence in sound insulation testing

Audit Requirements

Each tester is audited at least twice a year, completely unannounced. This is achieved by the tester logging their job onto the SITMA portal **in advance of testing taking place**.

Audits are carried out by independent SITMA employees who have been trained in accordance with BS EN ISO 19011:2018 and have extensive background in Sound Insulation Testing.

Each tester will be able to issue you with their SITMA audit documentation from their last audit alongside this report, if requested.

SITMA Portal

The SITMA Portal, besides logging every job for every tester, is used to generate reports, just like this one. The portal does not take pre-calculated information, it takes the raw data from the sound level meter and calculates each individual test itself, before producing this report. This ensures that no test data has been amended by any tester prior to the information being uploaded.

SITMA Accreditation

SITMA will shortly have achieved BS EN ISO/IEC 17024:2012 accreditation from UKAS (Application number 10579). SITMA has completed the Initial Audit and is awaiting final confirmation.

Calibration Requirements

SITMA holds some of the strictest calibration requirements in the world for sound insulation testing, with each sound level meter and tapping machine requiring UKAS calibration every 2 years and the microphone calibrator requiring calibration every 12 months. If the tester does not hold correctly calibrated equipment, the SITMA portal will not let them produce this report.

Complaints

You should speak directly with the tester if you wish to make a complaint. If your complaint is not handled to your satisfaction, you are then welcome to make a complaint directly to the SITMA registered testers' scheme in line with our complaints process PUS013.

TO CHECK THIS REPORT IS VALID

1. Head to this site: <https://sitma.bcta.group/>
2. Use these credentials:
 - a. Report Reference Number:
 - i. 28423
 - b. Job Postcode:
 - i. M25 0LX

Simplified Test Results

Certificate Number	Plot & Source Room	Plot & Receive Room	Target $D_{nT,w}+C_{tr}$ or $L'_{nT,w}$	Result $D_{nT,w}+C_{tr}$ or $L'_{nT,w}$	Pass / Fail
115352	Unit 52 Other	House 50 Living Room	43	60	PASS
115353	Unit 52 Other	House 50 Living Room 2	43	63	PASS
115354	Unit 52 Other	Flat 52 Kitchen / Living Room	43	51	PASS
115355	Unit 52 Other	Flat 52 Bedroom 1	43	61	PASS
115356	Flat 52 Kitchen / Living Room	Unit 52 Other	64	47	PASS
115357	Flat 52 Bedroom 1	Unit 52 Other	64	29	PASS

Testing Methodology

Airborne Sound Insulation Tests

Measurements of Standardised Level Difference (D_{nT}) were conducted in accordance with BS EN ISO 140-4:1998.

Level measurements in the Source & Receive Rooms (L_1 & L_2)

The noise was generated in the source room by placing an active loudspeaker, which produces a steady spectrum of pink noise, in an external corner of the room but at least 0.5m away from any reflective surface.

The noise level was measured in both the source room and receive room, sampling as much of the room as possible. The sound level meter was always kept 0.7m away from any reflective surface as to not artificially increase or decrease noise levels into the microphone.

The measurements were taken at one-third octave band intervals from 100 to 3150 Hertz using an average time of 30 seconds. The speaker was then moved to a corner junction on two internal walls and the measurements were repeated. The measurements in each room were arithmetically averaged. For separating walls the speaker should be in a corner opposite the test wall.

Background Measurements in Receive Room (L_b)

Where noise levels were measured in the receive room, the background noise level was also measured with the source room speaker turned off to ensure the background noise level did not influence the result. The background noise level is measured over a time period that accurately reflects the background noise measurement at the time of the test. This is normally between 6 & 30 seconds and can vary between the first and second background measurements.

Reverberation Time Measurements (T_2 , T_{20})

A minimum of 6 reverberation time measurements were also taken in the receive room to accurately define the level of influence the diffuse field has on the microphone, ensuring that an increase in soft or hard surfaces does not impact the overall test result.

A minimum of 6 reverberation times were measured in each room using a minimum of 3 microphone positions at each of 2 loudspeaker positions in accordance with BS EN ISO 354:2003 (also complies with BS EN 20354:1993)

Impact Sound Insulation Tests

Impact Sound Insulation was conducted to BS EN ISO 140-7:1998

Measurements of standardised impact Sound Pressure Level (L'_{nT}) were conducted in accordance with BS EN ISO 140-7:1998.

Level Measurements in the Receive Room

Level measurements were acquired in the receive room using a tapping machine, which has a set of 5 steel hammers to produce impact noise on the separating floor surface.

The tapping machine was orientated at 45 degrees to the main floor axis.

The noise level was measured in the receive room at 2 microphone positions at one-third octave band intervals from 100 to 3150 Hertz using an average time of at least 6 seconds for each of 4 tapping machine positions, creating 8 individual measurement readings.

Measurements were always taken at least 0.7m away from any reflective or absorptive surfaces.

Background Measurements in Receive Room (L_b)

Where noise levels were measured in the receive room, the background noise level was also measured with the tapping machine turned off. This is to ensure the background noise level did not influence the result. The background noise level is measured over a time period that accurately reflects the background noise measurement at the time of the test. This is normally between 6 & 30 seconds and can vary between the first and second background measurements.

Reverberation Time Measurements (T_2 , T_{20})

A minimum of 6 reverberation times were measured in each room using a minimum of 3 microphone positions at each of 2 loudspeaker positions in accordance with BS EN ISO 354:2003 (also complies with BS EN 20354:1993)

These measurements are often the same readings as the airborne test when measured in the same group of tests where the receive room is the same and the test(s) carried out on the same day.

Calculation Methodology

Airborne Sound Insulation Tests

Background Noise Correction ('Corrected L_2 ')

Any receive room noise measurements that are within 6dB of the background measurements are corrected by logarithmically averaging the difference to correct the receive room measurement. The correction is applied up to 10dB, where a maximum correction of 1.6dB is applied. Any background noise level greater than 10dB over the L_2 measurement will appear to reduce the sound insulation at that frequency.

Level Difference (' D ')

The difference between the source and 'corrected' receive room measurement is calculated for each speaker position and 2 differences averaged to obtain ' D ' for each frequency measured. These are calculated separately for Speaker Position 1 and Speaker Position 2

Standardised Level Difference (' D_{nT} ')

The result is standardised by adding 10 times the logarithm of half the reverberation time at each frequency to give the standardized level difference (D_{nT}) at each frequency. These are calculated separately for Speaker Position 1 and Speaker Position 2 and are arithmetically averaged to produce final $D_{nT,S}$.

Weighted Standardized Level Difference (' $D_{nT,w}$ ')

The $D_{nT,S}$ are then compared to the standard reference curve as defined in BS EN ISO 717-1:1997 to give a single figure result of $D_{nT,w}$.

Weighted Standardized Level Difference with Spectrum Adaption (' $D_{nT,w} + C; C_{tr}$ ')

The spectrum adaptation terms ($C; C_{tr}$) are then calculated in accordance with BS EN ISO 717-1:1997.

Precision

All measurements are taken to 0.1dB precision, except reverberation times which are taken to 0.01 seconds precision.

Impact Sound Insulation Tests

Background Noise Correction ('Corrected L_2 ')

Any receive room noise measurements that are within 6dB of the background measurements are corrected by logarithmically averaging the difference to correct the receive room measurement. The correction is applied up to 10dB, where a maximum correction of 1.6dB is applied. Any background noise level greater than 10dB over the L_2 measurement will appear to reduce the sound insulation at that frequency.

Normalized Impact Sound Pressure Level (' L'_{nT} ')

The result is normalized by adding 10 times the logarithm of half the reverberation time at each frequency to the 'corrected' L_2 to give the Standardized Impact Sound Pressure Level (L'_{nT}) at each frequency.

Weighted Standardized Impact Sound Pressure Level (' $L'_{nT,w}$ ')

The $L'_{nT,w}$ are then compared to the standard reference curve as defined in BS EN ISO 717-2:1997 to give a single figure result.

Precision

All measurements are taken to 0.1dB precision, except reverberation times which are taken to 0.01 seconds precision.

Sampling Regime

Testing was conducted using a sampling regime in accordance with Approved Document E 2003 [as amended] (ADE), ensuring each construction type was tested on the project, not necessarily each plot.

It is assumed that each construction type is constructed consistently. If this is not the case, and deviations of the construction type occur, further testing will be required to comply with the requirements of Approved Document E 2003 [as amended] to the Building Regulations.

ADE requires that sets of tests are carried out on one in ten of each construction type or sub-group. Each set of tests on houses is made up of two airborne sound insulation tests (Two Tests). Each set of tests on flats is made up of two airborne tests on walls and two airborne and two impact tests on floors (Six Tests).

The location of the sets of tests are selected at random by the tester except where specifically requested the Approved Inspector or specialist input from Robust Details.

Rooms were tested unfurnished unless testing is specifically requested in a furnished room. Testing is conducted using the larger room as the source room, with a tolerance of 10% of volume being acceptable either way. Doors, windows and trickle vents must be closed and kitchen units, cupboard doors, wardrobes etc shall be open for the duration of the test when they have been installed against the separating wall under test.

For impact testing, the tests are always conducted on the separating floor that has received Building Control Approval.

It is only ever acceptable to test on a soft floor covering where that covering is an integral part of a Type 1 concrete floor as defined by ADE and cannot physically be lifted by the testers own hands.

Occasionally, rooms may have an awkward layout, such as a stagger, be significant in length (>10m) or contain internal barriers. These requirements are defined in EN ISO 140-14:2004 which all testers hold a copy of as a mandatory entry requirement into the SITMA scheme. Where a test has an awkward layout, the testing method from BS EN ISO 140-14:2004 will be defined in the report and sketches held internally.

Deviations

Background Noise Levels

Background noise levels are often an unavoidable part of testing as testing must take place on a live building site. Though a correction is applied within the calculation, high background noise levels may result in the wall/floor under test not achieving its full potential. Situations can occur where background noise levels are not high but the sound insulation performance of the separating floor or wall is so good that the measured levels are close to the prevailing background levels. The equipment used cannot distinguish between background noise levels and the noise from the speaker.

Deviations Related to the test

If any deviation from the testing method was necessary, details of the deviation are indicated on each individual test certificate (appended to this report). Where deviations were avoidable, or tests have been conducted on a 'trial' basis, these will be highlighted at the bottom of each certificate.

Calibration

Calibration

The calibration certificates are appended to this report under Appendix B. The summary of calibrated equipment used is shown below:

Item	Calibration from	Calibration expiry	Certificate Number
XL2 SLM	06 Dec 2021	06 Dec 2023	UCRT21/2486
1275784	17 Nov 2022	17 Nov 2023	UCRT22/2376
EOS Tapper	22 Jun 2022	22 Jun 2024	UCRT22/1797

Test Results

Airborne Wall Tests – Material Change of Use by Andy Todd

Certificate Number	Plot & Source Room	Source Room Volume	Plot & Receive Room	Receive Room Volume	Target $D_{nT,w}+C_{tr}$	Result $D_{nT,w}+C_{tr}$	Pass / Fail
115352	Unit 52 Other	120.0m ³	House 50 Living Room	45.0m ³	>= 43 dB	>= 60 dB	Pass
	Construction: Generic Masonary Block: TBC						
	Deviations: Receive Room furnished						
115353	Unit 52 Other	120.0m ³	House 50 Living Room 2	42.0m ³	>= 43 dB	>= 63 dB	Pass
	Construction: Generic Masonary Block: TBC						
	Deviations: Receive Room furnished						

Airborne floor Tests – Material Change of Use by Andy Todd

Certificate Number	Plot & Source Room	Source Room Volume	Plot & Receive Room	Receive Room Volume	Target $D_{nT,w}+C_{tr}$	Result $D_{nT,w}+C_{tr}$	Pass / Fail
115354	Unit 52 Other	120.0m ³	Flat 52 Kitchen / Living Room	82.0m ³	>= 43 dB	>= 51 dB	Pass
	Construction: Generic Timber Joist: TBC						
	Deviations: Receive Room furnished						
115355	Unit 52 Other	120.0m ³	Flat 52 Bedroom 1	40.0m ³	>= 43 dB	>= 61 dB	Pass
	Construction: Generic Timber Joist: TBC						
	Deviations: Receive Room furnished						

Impact floor Tests – Material Change of Use by Andy Todd

Certificate Number	Plot & Source Room	Source Room Volume	Plot & Receive Room	Receive Room Volume	Target $L'_{nT,w}$	Result $L'_{nT,w}$	Pass / Fail
115356	Flat 52 Kitchen / Living Room	82.0m ³	Unit 52 Other	120.0m ³	<= 64 dB	<= 47 dB	Pass
	Construction: Generic Timber Joist: TBC						
	Deviations:						
115357	Flat 52 Bedroom 1	40.0m ³	Unit 52 Other	120.0m ³	<= 64 dB	<= 29 dB	Pass
	Construction: Generic Timber Joist: TBC						
	Deviations: Source Room furnished, Impact Test - Soft floor covering						

Appendix A – Individual Certificates

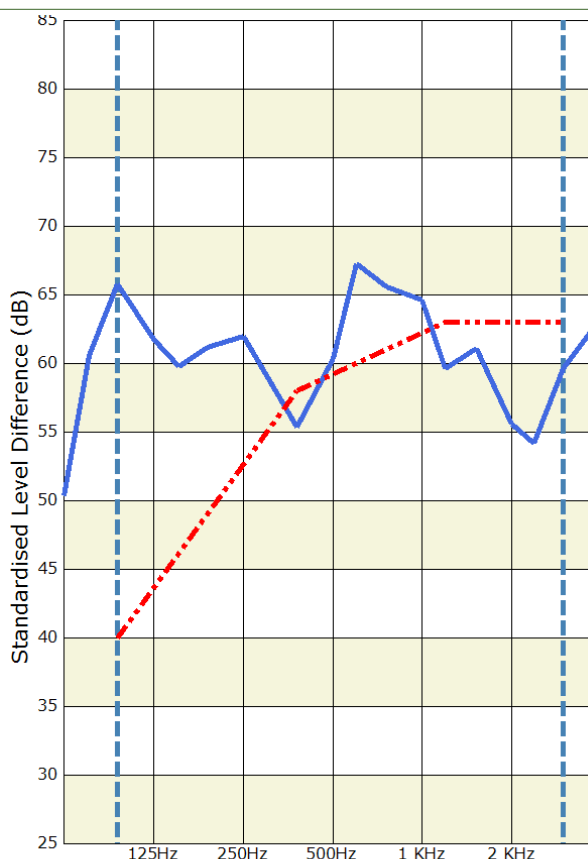
Test Type	Source Room	Partition	Receiver Room
Airborne sound insulation	Unit 52 Other	WB0001**	House 50 Living Room
Airborne sound insulation	Unit 52 Other	WB0001**	House 50 Living Room 2
Airborne sound insulation	Unit 52 Other	FT0001**	Flat 52 Kitchen / Living Room
Airborne sound insulation	Unit 52 Other	FT0001**	Flat 52 Bedroom 1
Impact sound insulation	Flat 52 Kitchen / Living Room	FT0001**	Unit 52 Other
Impact sound insulation	Flat 52 Bedroom 1	FT0001**	Unit 52 Other

Registered Sound Insulation Test Certificate

Test No:	115352	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Airborne (Wall)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat
Source Room:		Partition:		Receiver Room:	
Description:		Unit 52 Other		WB0001**	
Volume / Area		120.0m ³		18.0m ²	
				45.0m ³	

Frequency (Hz)	D_{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	37.4	
63 Hz*	50.4	
80 Hz*	60.6	X
100 Hz	65.8	X
125 Hz	61.8	X
160 Hz	59.8	X
200 Hz	61.2	X
250 Hz	62	X
315 Hz	59.1	
400 Hz	55.4	
500 Hz	60.4	
630 Hz	67.3	
800 Hz	65.6	X
1 KHz	64.6	X
1.25 KHz	59.6	
1.6 KHz	61.1	
2 KHz	55.6	
2.5 KHz	54.2	
3.15 KHz	59.6	
4 KHz*	63.4	X
5 KHz*	65.8	X

Evaluation based on field measurement using results obtained by an engineering method



1/3rd Octave Band Frequency (Hz)

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-1

$D_{nT,w}$ (C; C_{tr}) [dB]: 59 (-1, 1) dB
 $D_{nT,w} + C_{tr}$ [dB]: 60 dB
 Minimum Pass Level [dB]: 43 dB

PASS

Adverse Aggregated Deviations [dB]: 27.5

Partition Detail: TBC

Test Exceptions (if any): Receive Room furnished

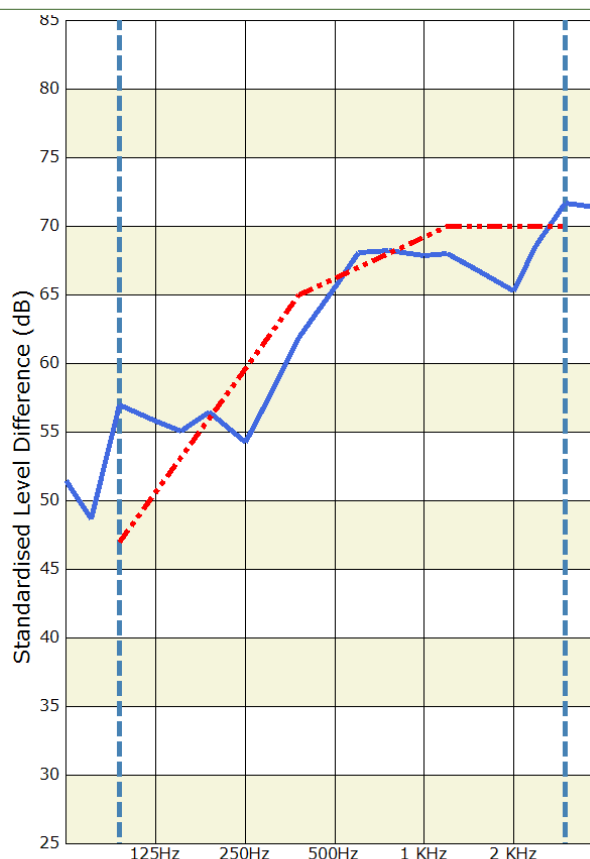
AIRBORNE SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
 BS EN ISO 140 - Part 4:1998: Acoustics - measurement of sound in buildings and of building elements
 BS EN ISO 717 - Part 1:1997: Acoustics - rating of sound in buildings and of building elements

Registered Sound Insulation Test Certificate

Test No:	115353	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Airborne (Wall)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat
Source Room:		Partition:		Receiver Room:	
Description:		Unit 52 Other		WB0001**	
Volume / Area		120.0m ³		15.0m ²	
				42.0m ³	

Frequency (Hz)	D_{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	48.2	
63 Hz*	51.5	
80 Hz*	48.7	
100 Hz	57	
125 Hz	55.8	
160 Hz	55.1	
200 Hz	56.5	
250 Hz	54.3	
315 Hz	57.5	
400 Hz	61.9	
500 Hz	65.6	X
630 Hz	68.1	
800 Hz	68.2	
1 KHz	67.9	
1.25 KHz	68	X
1.6 KHz	66.8	X
2 KHz	65.3	X
2.5 KHz	68.6	X
3.15 KHz	71.7	X
4 KHz*	71.3	X
5 KHz*	70.7	X

Evaluation based on field measurement using results obtained by an engineering method



1/3rd Octave Band Frequency (Hz)

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-1

$D_{nT,w}$ (C; C_{tr}) [dB]: 66 (-1, -3) dB
 $D_{nT,w} + C_{tr}$ [dB]: 63 dB
 Minimum Pass Level [dB]: 43 dB

PASS

Adverse Aggregated Deviations [dB]: 25.1

Partition Detail:TBC

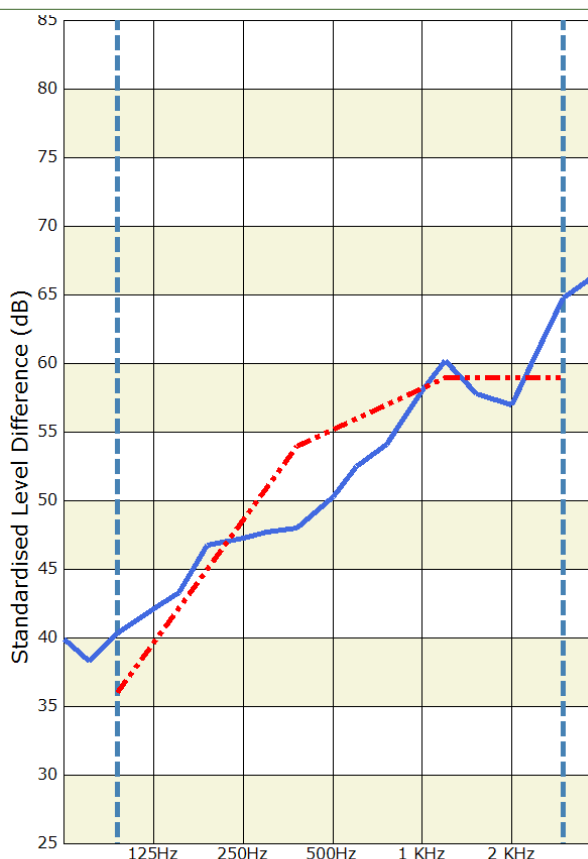
Test Exceptions (if any): Receive Room furnished

AIRBORNE SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
 BS EN ISO 140 - Part 4:1998: Acoustics - measurement of sound in buildings and of building elements
 BS EN ISO 717 - Part 1:1997: Acoustics - rating of sound in buildings and of building elements

Registered Sound Insulation Test Certificate

Test No:	115354	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Airborne (Floor)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat
Source Room:		Partition:		Receiver Room:	
Description:		Unit 52 Other		FT0001**	
Volume / Area		120.0m ³		30.0m ²	
				82.0m ³	

Frequency (Hz)	D_{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	36	
63 Hz*	39.9	
80 Hz*	38.3	
100 Hz	40.4	
125 Hz	42.1	
160 Hz	43.3	
200 Hz	46.8	
250 Hz	47.3	
315 Hz	47.7	
400 Hz	48	
500 Hz	50.3	
630 Hz	52.5	
800 Hz	54.1	
1 KHz	58	
1.25 KHz	60.2	
1.6 KHz	57.8	
2 KHz	57	
2.5 KHz	60.4	
3.15 KHz	64.8	
4 KHz*	66.8	X
5 KHz*	67.7	X



Evaluation based on field measurement using results obtained by an engineering method

1/3rd Octave Band Frequency (Hz)

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-1

$D_{nT,w}$ (C; C_{tr}) [dB]: 55 (-1, -4) dB
 $D_{nT,w} + C_{tr}$ [dB]: 51 dB
Minimum Pass Level [dB]: 43 dB

PASS

Adverse Aggregated Deviations [dB]: 24.3

Partition Detail: TBC

Test Exceptions (if any): Receive Room furnished

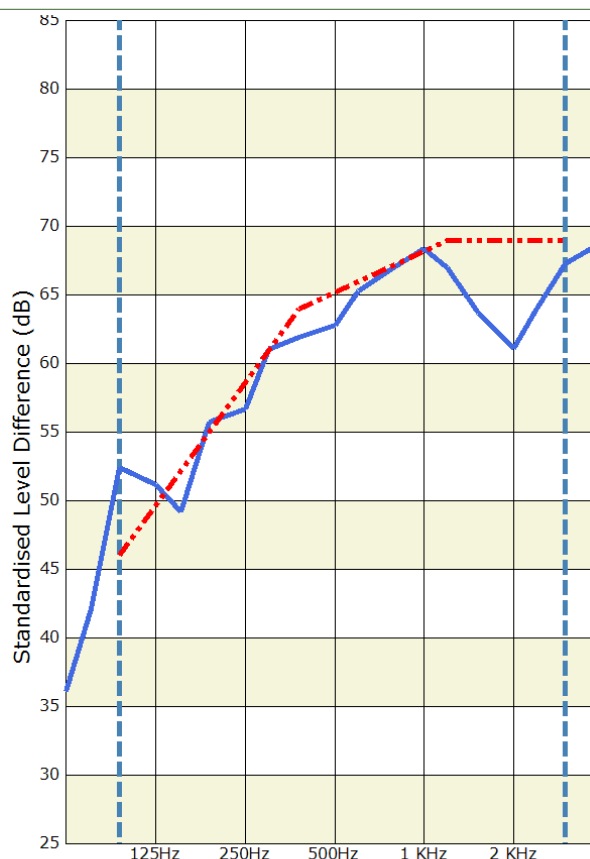
AIRBORNE SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
BS EN ISO 140 - Part 4:1998: Acoustics - measurement of sound in buildings and of building elements
BS EN ISO 717 - Part 1:1997: Acoustics - rating of sound in buildings and of building elements

Registered Sound Insulation Test Certificate

Test No:	115355	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Airborne (Floor)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat
Source Room:		Partition:		Receiver Room:	
Description:		Unit 52 Other		Flat 52 Bedroom 1	
Volume / Area		120.0m ³		14.0m ²	
		40.0m ³			

Frequency (Hz)	D_{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	36.8	
63 Hz*	36.1	
80 Hz*	42.1	X
100 Hz	52.4	
125 Hz	51.2	
160 Hz	49.2	
200 Hz	55.7	
250 Hz	56.7	
315 Hz	61	
400 Hz	61.9	X
500 Hz	62.8	X
630 Hz	65.3	X
800 Hz	66.8	X
1 KHz	68.4	X
1.25 KHz	67	X
1.6 KHz	63.7	X
2 KHz	61.1	X
2.5 KHz	63.9	X
3.15 KHz	67.3	X
4 KHz*	68.9	X
5 KHz*	68.7	X

Evaluation based on field measurement using results obtained by an engineering method



1/3rd Octave Band Frequency (Hz)

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-1

$D_{nT,w}$ (C; C_{tr}) [dB]: 65 (-2, -4) dB
 $D_{nT,w} + C_{tr}$ [dB]: 61 dB
 Minimum Pass Level [dB]: 43 dB

PASS
 Adverse Aggregated Deviations [dB]: 31.3

Partition Detail: TBC

Test Exceptions (if any): Receive Room furnished

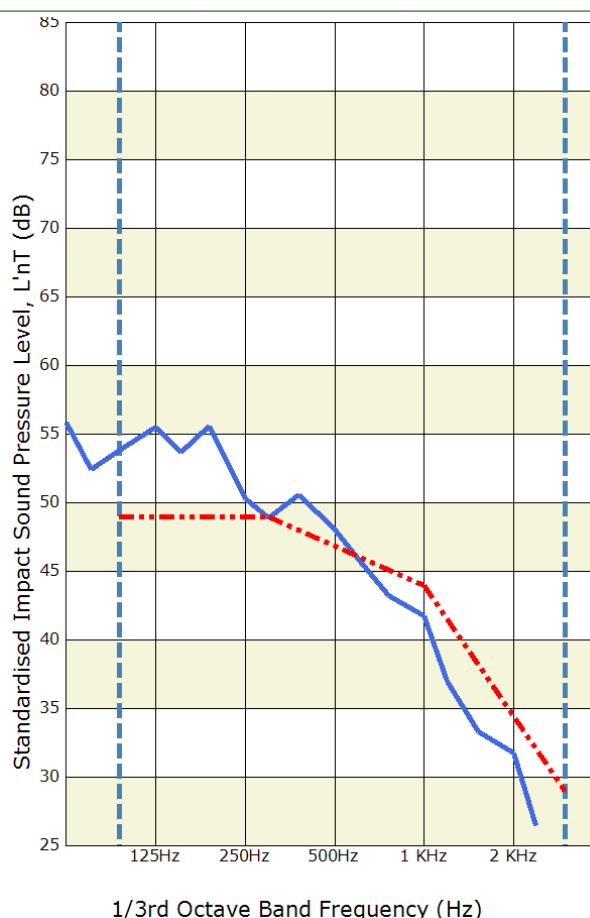
AIRBORNE SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
 BS EN ISO 140 - Part 4:1998: Acoustics - measurement of sound in buildings and of building elements
 BS EN ISO 717 - Part 1:1997: Acoustics - rating of sound in buildings and of building elements

Registered Impact Test Certificate

Test No:	115356	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Impact (Floor)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat

	Source Room:	Partition:	Receiver Room:
Description:	Flat 52 Kitchen / Living Room	FT0001**	Unit 52 Other
Volume / Area	82.0m ³	30.0m ²	120.0m ³

Frequency (Hz)	L _{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	52.9	
63 Hz*	55.9	
80 Hz*	52.4	
100 Hz	53.8	
125 Hz	55.5	
160 Hz	53.7	
200 Hz	55.6	
250 Hz	50.3	
315 Hz	48.9	
400 Hz	50.6	
500 Hz	48	
630 Hz	45.9	
800 Hz	43.2	
1 KHz	41.8	
1.25 KHz	37	
1.6 KHz	33.3	
2 KHz	31.8	
2.5 KHz	26.5	
3.15 KHz	21.4	
4 KHz*	18.6	
5 KHz*	15.9	



Evaluation based on field measurement using results obtained by an engineering method

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-2

L_{nT,w} (CI) [dB]: 47 (0) dB
Maximum Pass Level [dB]: 64 dB

PASS
Adverse Aggregated Deviations [dB]: 27.5

Partition Detail:TBC

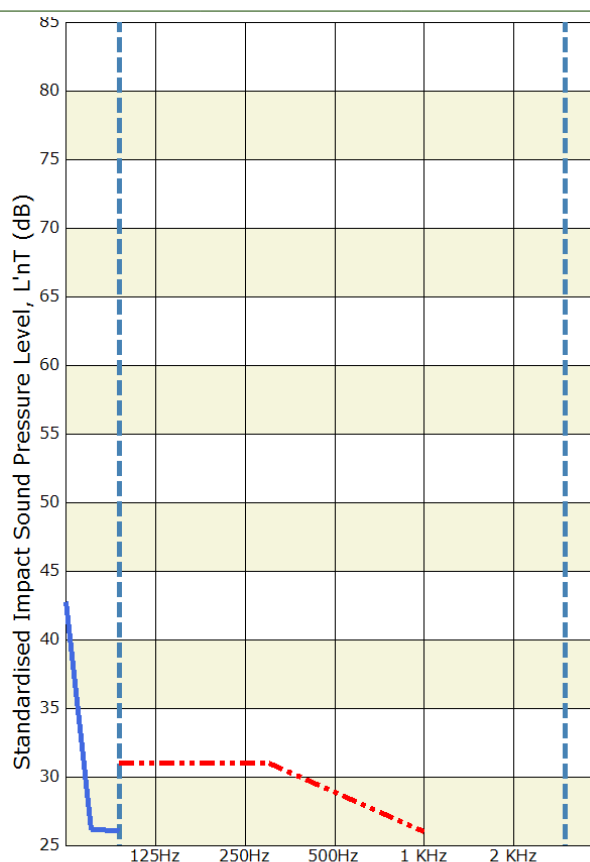
Test Exceptions (if any):

IMPACT SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
BS EN ISO 140 - Part 7:1998: Acoustics - measurement of sound in buildings and of building elements
BS EN ISO 717 - Part 2:1997: Acoustics - rating of sound in buildings and of building elements

Registered Impact Test Certificate

Test No:	115357	Test Job Ref:	28423	Test Org Name:	Noise Control Solutions Limited
Customer:	Samuel Bass			Test Type:	Impact (Floor)
Address:	52 Albert Avenue, , Manchester	Job Address:	52 Albert Avenue, , Manchester	Test Date:	12/05/2023
				Tester:	Andy Todd
				Site type:	Material Change of Use
Postcode:	M25 0LX	Postcode:	M25 0LX	Site Build:	Dwelling-House/Flat
Source Room:		Partition:		Receiver Room:	
Description:	Flat 52 Bedroom 1		FT0001**		Unit 52 Other
Volume / Area	40.0m ³		14.0m ²		120.0m ³

Frequency (Hz)	L _{nT} 1/3 Octave (dB)	BGnd Correction
50 Hz*	46.5	
63 Hz*	42.8	
80 Hz*	26.2	X
100 Hz	26.1	X
125 Hz	24.2	
160 Hz	22	X
200 Hz	21.1	X
250 Hz	22.8	X
315 Hz	21.5	
400 Hz	19.4	X
500 Hz	19.8	X
630 Hz	19.4	X
800 Hz	20.6	X
1 KHz	24.2	
1.25 KHz	24.1	
1.6 KHz	23.5	
2 KHz	23.1	
2.5 KHz	22.2	
3.15 KHz	23.5	
4 KHz*	23.8	
5 KHz*	21.9	



Evaluation based on field measurement using results obtained by an engineering method

*Outside scope of accreditation

Above graph shows frequency range according to the curve of reference values within BS EN ISO 717-2

L_{nT,w} (CI) [dB]: 29 (-9) dB
Maximum Pass Level [dB]: 64 dB

PASS
Adverse Aggregated Deviations [dB]: 31.4

Partition Detail:TBC

Test Exceptions (if any): Source Room furnished, Impact Test - Soft floor covering

IMPACT SOUND INSULATION TEST: Approved Document E (2003) including 2004, 2010, 2013, and 2015 Amendments
BS EN ISO 140 - Part 7:1998: Acoustics - measurement of sound in buildings and of building elements
BS EN ISO 717 - Part 2:1997: Acoustics - rating of sound in buildings and of building elements

Appendix B – UKAS Calibration Certificates



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 06 December 2021

Certificate Number: UCRT21/2486

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory

K. Mistry

Customer Noise Control Solutions Limited
44 Heyes Road
Orrell
WN5 8RJ

Order No.	NCSLCAL2021			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	Manufacturer	Instrument	Type	Serial No. / Version
	NTi	Sound Level Meter	XL2-TA	A2A-15792-E0
	NTi	Firmware		4.21
	NTi	Pre Amplifier	MA220	8243
	NTi	Microphone	MC230A	A16815
	Norsonic	Calibrator	Nor1251	33421
		Calibrator adaptor type if applicable		1443

Performance Class 1

Test Procedure TP 10. SLM 61672-3:2013

Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes

If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 03 December 2021

ANV Job No. UKAS21/12794

Date Calibrated 06 December 2021

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	06 December 2019	UCRT19/2328	0653

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 17 November 2022

Calibrated at & Certificate issued by:
ANV Measurement Systems

Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Certificate Number: UCRT22/2376

Page 1 of 2 Pages
Approved Signatory

K. Mistry

CUSTOMER Noise Control Solutions Limited
44 Heyes Road
Orrell
Lancashire
WN5 8RJ

ORDER No NCSLCal101122 **Job No** UKAS22/11718

DATE OF RECEIPT 16 November 2022

PROCEDURE Procedure TP 1 Calibration of Sound Calibrators

IDENTIFICATION Sound Calibrator Brüel & Kjær type 4230 serial number 1275784 with one-inch housing and adapter type DB 0311 for half-inch microphone

CALIBRATED ON 17 November 2022

PREVIOUS CALIBRATION Calibrated on 23 February 2021, Certificate No. UCRT21/1250 issued by this laboratory.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 23 June 2022

Certificate Number: UCRT22/1797

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Page 1 of 4 Pages
Approved Signatory

K. Mistry

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

CUSTOMER Noise Control Solution Limited
44 Heyes Road
Orrell
Lancashire
WN5 8RJ

ORDER No Andy Todd -Credit Card **Job No** UKAS22/06403

DATE OF RECEIPT 21 June 2022

PROCEDURE Calibration Engineer's Handbook section 31

IDENTIFICATION Tapping Machine SOURCESLINE type EOS serial no. NG E05 253

CALIBRATED ON 22 June 2022 to 23 June 2022

**PREVIOUS
CALIBRATION** None known

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