



FIELD TESTS FOR COMPLIANCE WITH
SOUND INSULATION REQUIREMENTS
FOR FLOORS & WALLS

Project:

Willow Park
Petersfield Road
Portsmouth
PO9 2HU

Client:

RJ Morrall Ltd
Tinneys Firs Cottage
The Drove, Woodfalls
Salisbury, Wilts, SP5 2LL

Prepared by:

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Acoustic Associates South West Ltd
Bampfylde House
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Report Date:

25th June 2019



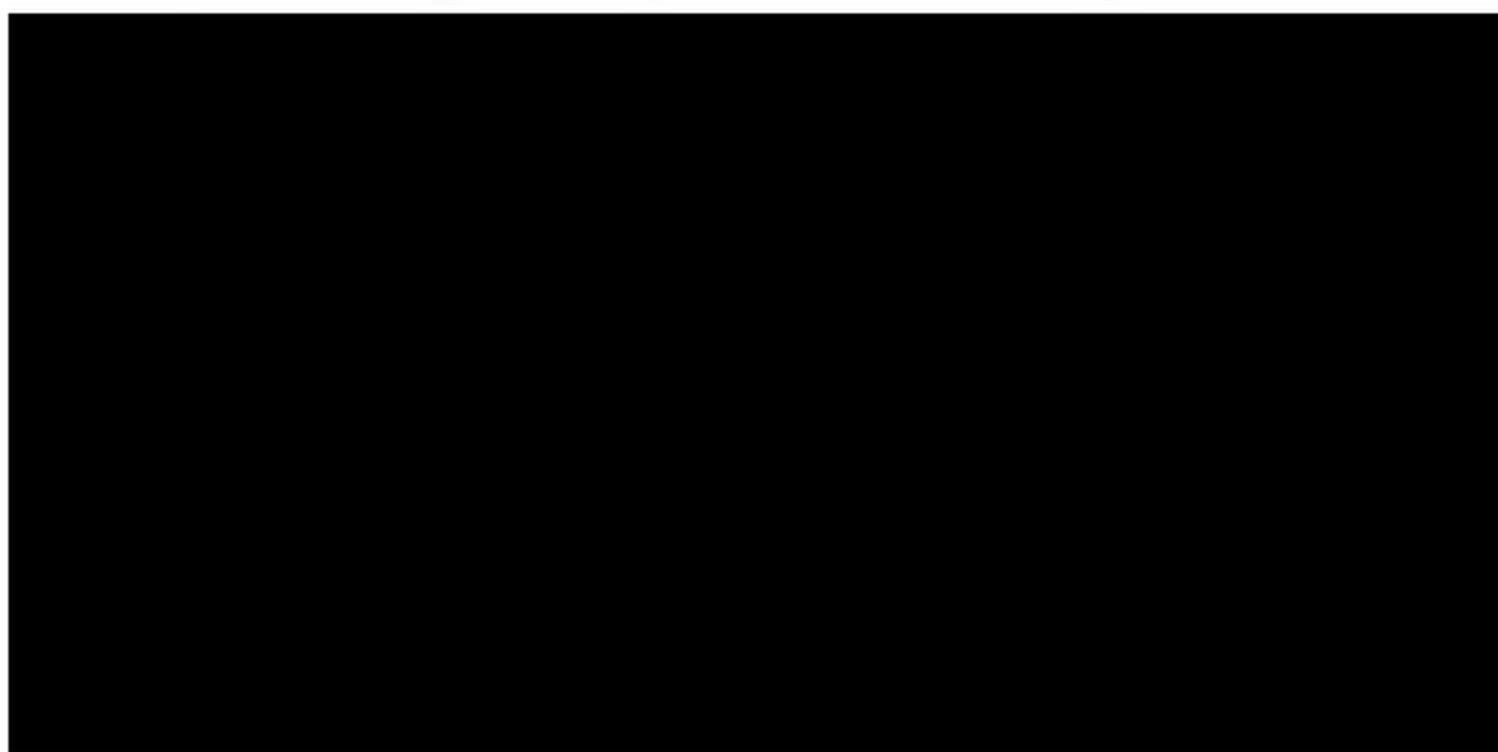


Notice to Building Control Officer

Certification of Test Results.

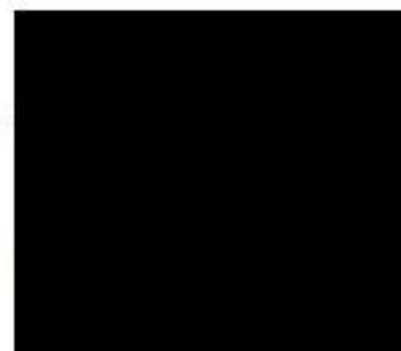
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The online verification (certification) system means that Building Control Bodies will need to follow the steps below to verify the results quoted in the relevant test report:



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Author: John Hammond
Reviewed: Peter Ashford
Date: 25th June 2019



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1 SUMMARY

1. This is an ANC Registered Test Report with the unique registration number: 202 / 58320. The person named in this report as conducting the tests was registered on the ANC Register at the time that the testing was undertaken.
2. The tests detailed in this report were carried out on 18th & 24th June 2019; to check the acoustic performance of the party walls & floors between 31 new Flats constructed at Willow Park, Petersfield Road, Portsmouth, PO9 2HU.
3. The tests detailed in this report have been carried out in full accordance with ISO 140-4 and ISO 140-7^{1,2}.
4. The report also compares the results achieved with the levels prescribed in Approved Document E of The Building Regulations 2003⁵ in order to check for compliance. All the procedures in Annex B of Approved Document E of The Building Regulations have been followed.
5. Approved Document E states that the individual values of airborne sound insulation ($D_{nT,w} + C_{tr}$) should be not less than 45 dB for walls and floors in New properties. The values achieved for impact sound insulation ($L'_{nT,w}$) should not be more than 62 dB.
6. The following test types were carried out:

Test Type:	No. of Room-pair Tests	Required performance	Measured Performance	Pass Or fail
Horizontal Airborne (Walls)	6	≥ 45 dB $D_{nT,w} + C_{tr}$	53, 56, 53, 58, 53, 53 dB $D_{nT,w} + C_{tr}$	PASS
Vertical Airborne (Floors)	6	≥ 45 dB $D_{nT,w} + C_{tr}$	47, 45, 45, 45, 45, 45 dB $D_{nT,w} + C_{tr}$	PASS
Vertical Impact (Floors)	6	≤ 62 dB $L'_{nT,w}$	53, 52, 41, 58, 56, 60 dB $L'_{nT,w}$	PASS

The results show that the airborne & impact sound insulation performance of the party walls & floors tested meets the minimum requirements of the Building Regulations, Document E 2003.

2. TEST REPORT

2.1 General

Client: RJ Morrall Ltd
Tinneys Firs Cottage
The Drove, Woodfalls
Salisbury, Wilts, SP5 2LL

Site: Willow Park, Petersfield Road, Portsmouth, PO9 2HU.

Site Conditions: Mainly Clean & Empty Rooms.

Background Noise: Dominant noise source - local & site traffic outside.

Type of Property: 31 Flats – New Build.

Test conducted by: John Hammond TechIOA
Acoustic Associates South West Ltd
Bampfylde House
Poltimore
Devon
EX4 0AF

Date of tests: 18th & 24th June 2019

2.2 Element Construction

Party Walls: 12.5mm Soundbloc – 19mm Plasterboard – 89mm Timber Stud – 90mm Mineral Wool – 50mm Cavity – 90mm Mineral wool – 89mm Timber Stud – 19mm Plasterboard – 12.5mm Soundbloc.

Party Floors: Screedboard – Resilient Layer – 15mm OSB – Timber Joists – 100mm Mineral wool – Resilient Bars – 2 x 15mm Soundbloc – Plaster Skim.

Equipment:

Equipment Description	Type Number	Manufacturer	Serial Number	Date of Last Calibration	Calibration Cert No.
SLM	118	Norsonic	31591	06/04/2018	TCRT18/1300
Preamplifier	1206	Norsonic	30751	06/04/2018	TCRT18/1300
Microphone	1225	Norsonic	68831	06/04/2018	TCRT18/1300
Calibrator	GA 607	Castle	036821	04/04/2018	TCRT18/1296
2 x PA	K162	dB Technologies		N/A	N/A
2 x Source	MR1	Minirator		N/A	N/A
Tapping Hammer	TP2	Sound Solutions	TP02040	18/04/2018	TP02040/04/18
Starting Pistol	Olympic 6	BBM	-	-	-

2.3 Test Method

The survey was conducted between pairs of rooms, following the guidance set out in BS EN ISO 140 1998, part 4, "Measurement of sound insulation in building and of building elements - field measurements of airborne sound insulation between rooms", and BS EN ISO 140 1998, part 7, "Measurement of sound insulation in building and of building elements - field measurements of impact sound insulation between rooms". For clarification, the test procedure also followed clarification issued by BRE, namely method 3, as described below.

For the airborne sound insulation tests, two loudspeakers were set up, facing into the corners of the source room on one side of the partition under test. A separate white noise signal was then played through each PA. Attended source and receiver room measurements were taken using six static microphone positions; measured over a minimum of 6 seconds (as defined in ISO 140:7 Section 6.3.2). The tester remained still during each measurement and within the room throughout the measurements.

For the impact noise tests, a standard tapping machine was positioned in the source room. The hammer produces a steady impact noise by repeatedly dropping a number of cam-driven weights onto the floor from a fixed height - the tapping machine is equipped with a 'spacer' and adjustable feet so that the drop-height can be checked before each test. Attended receiver room measurements were taken using six static microphone positions; measured over a minimum of 6 seconds (as defined in ISO 140:4 Section 6.3.2). The tester remained still during each measurement and within the room throughout the measurements. The tapping hammer was then moved to a minimum of three further positions with a total of six noise levels recorded for each test set.

A minimum of six measurements of the Reverberation Time (3 microphone positions with 2 measurements at each) in each receiving room were made using the impulse method (starting pistol), the values once calculated using reverse Schroeder integration; then being used to normalise the measured airborne sound level differences, in accordance with the recommendations of the British Standards. Background noise levels were recorded in each receiving room immediately following the receive measurements, these were taken in the same positions over a minimum of 6 seconds each using start/pause to create one averaged representative background noise measurement. This is done to ensure that the measured levels from the loudspeaker or tapping hammer were sufficiently above extraneous noise sources, such as rain noise or traffic. Where necessary, an adjustment was made to account for high background levels, as prescribed in the Standards.

Data was subsequently analysed using an ANC compliant spread-sheet each relevant part of BS EN ISO 140 -4 & 140 -7 has been adhered to and rated in full accordance with ISO 717 -1 & 717 -2 as well as Annex B of ADE 2003.

2.4 Exceptions to the requirements of Annex B of the Building Regulations

Section of Annex B	Requirement	Areas of non compliance	Procedure Carried Out
B2.11	Test rooms to have a volume of 25m ³ if possible	None.	N/A
B2.12	Test rooms to be unfurnished	None.	N/A
B2.13/2.14	Impact tests to be conducted on floor without soft covering unless it is an integral part of the approved specification	3.03 Tap on Carpet	Tested
B2.15	In unequal rooms, the larger room should be used as the source room	None	N/A
B2.16	Doors/windows should be closed	None	N/A
B2.17	Kitchen units, cupboards etc should have their doors open and be unfilled	None	N/A

3. RESULTS

3.1 General

Results of the measurements, in terms of single-figure ratings, are provided below. They are provided as Weighted Standardised Level Differences $D_{nT,w} + C_{tr}$ (for airborne sound) as required by BS EN ISO 140-4¹ and Weighted Standardised Impact Sound Pressure Levels $L'_{nT,w}$ (for impact sound) as required by BS EN ISO 140-7². They are also defined in ISO 717-1&2^{3,4}, which deal with airborne and impact insulation respectively.

On the following pages, the graphical results are presented, together with the underlying data from which the single-figure ratings are calculated.

Approved Document E of The Building Regulations: 'Resistance to the passage of sound' sets out the following requirements for new & converted dwellings:

Requirements of Document E 2003	Party Walls - Airborne Insulation $D_{nT,w} + C_{tr}$	Party Floors - Airborne Insulation $D_{nT,w} + C_{tr}$	Party Floors - Impact Insulation $L'_{nT,w}$
New Builds	Min 45 dB	Min 45 dB	Max 62 dB
Conversions	Min 43 dB	Min 43 dB	Max 64 dB

It is noted that airborne sound insulation is measured as a difference in sound levels across a partition. Therefore, a larger difference represents a better level of insulation, and the Regulations state the requirements as a minimum acceptable difference. In contrast, impact sound insulation is measured as an absolute level in the receiving room, due to the standard tapping hammer on the floor above. In this situation, a lower noise level represents a better level of insulation and the Regulations therefore specify a maximum allowable level.

3.2 Separating Walls (airborne sound):

Ref. No.	Source Room		Receiving Room		$D_{nT,w} + C_{tr}$ (dB)		Pass/Fail
	Description	Vol m ³	Description	Vol m ³	Required Value	Measured Value	
6906/1.01	22 Living room / Kitchen	68	21 Living room / Kitchen	56	≥45	53	Pass
6906/1.02	31 Living room / Kitchen	58	30 Bedroom	32	≥45	56	Pass
6906/1.03	23 Bedroom	32	24 Bedroom	30	≥45	53	Pass
6906/1.04	18 Living room / Kitchen	88	17 Bedroom	32	≥45	58	Pass
6906/1.05	17 Living room / Kitchen	88	16 Living room / Kitchen	88	≥45	53	Pass
6906/1.06	13 Living room / Kitchen	88	14 Bedroom	28	≥45	53	Pass

3.3 Separating Floors (airborne sound):

Ref. No.	Source Room		Receiving Room		$D_{nT,w} + C_{tr}$ (dB)		Pass/ Fail
	Description	Vol m ³	Description	Vol m ³	Required Value	Measured Value	
6906/2.01	22 Living room / Kitchen	68	11 Living room / Kitchen	68	≥45	47	Pass
6906/2.02	31 Living room / Kitchen	58	20 Living room / Kitchen	58	≥45	45	Pass
6906/2.03	23 Bedroom	32	12 Bedroom	32	≥45	45	Pass
6906/2.04	18 Living room / Kitchen	88	7 Living room / Kitchen	88	≥45	45	Pass
6906/2.05	17 Living room / Kitchen	88	6 Living room / Kitchen	88	≥45	45	Pass
6906/2.06	13 Living room / Kitchen	88	2 Living room / Kitchen	88	≥45	45	Pass

3.4 Separating Floors (impact sound):

Ref. No.	Source Room		Receiving Room		$L'_{nT,w}$ (dB)		Pass/ Fail
	Description	Vol m ³	Description	Vol m ³	Required Value	Measured Value	
6906/3.01	22 Living room / Kitchen	68	11 Living room / Kitchen	68	≤62	53	Pass
6906/3.02	31 Living room / Kitchen	58	20 Living room / Kitchen	58	≤62	52	Pass
6906/3.03	23 Bedroom	32	12 Bedroom	32	≤62	41	Pass
6906/3.04	18 Living room / Kitchen	88	7 Living room / Kitchen	88	≤62	58	Pass
6906/3.05	17 Living room / Kitchen	88	6 Living room / Kitchen	88	≤62	56	Pass
6906/3.06	13 Living room / Kitchen	88	2 Living room / Kitchen	88	≤62	60	Pass

4. REFERENCES

1. BS EN ISO 140-4:1998: *Field measurements of airborne sound insulation between rooms*
2. BS EN ISO 140-7: 1998: *Field measurements of impact insulation between rooms.*
3. BS EN ISO 717-1: 1997: *Rating of sound insulation in buildings and of building elements. Part 1: Airborne Sound Insulation.*
4. BS EN ISO 717-2: 1997: *Rating of sound insulation in buildings and of building elements. Part 2: Impact Sound Insulation.*
5. The Building Regulations 2000 (as amended 2003). Approved Document E: Resistance to the Passage of Sound.

5. GLOSSARY OF TERMS

$D_{nT,w}$ **Weighted Standardised Level Difference.** A single-figure value of airborne sound insulation performance, derived according to procedures in BS EN ISO 717-2, based on the D_{nT} values at different frequencies (100-3150 Hz).

D_{nT} **Standardised Level Difference.** A frequency-dependent measurement of airborne sound insulation, calculated using the following formula:

$$D_{nT} = L_1 - L_2 + 10\log(T/T_0) \text{ dB}$$

Where: L_1 is the energy-averaged sound pressure level due to the white noise source measured in the source room using fixed point technique.
 L_2 is the energy-averaged sound pressure level measured in the receiving room using fixed point technique.
 T is the mean receiving room reverberation time (derived from T_{20} , secs).
 T_0 is the reference reverberation time (= 0.5s for dwellings).

C_{tr} **Spectrum Adaptation Term** calculated in accordance with BS EN ISO 717-2, to characterise airborne sound insulation with respect to typical outdoor noise sources (A-weighted urban traffic noise).

$L'_{nT,w}$ **Weighted Standardised Impact Sound Pressure Level.** A single-figure value of impact sound insulation, performance, derived according to BS EN ISO 717-2, based on the L_{nT} values at different frequencies (100Hz- 3150 Hz).

L'_{nT} **Standardised Impact Sound Pressure Level.** A frequency dependent measurement of impact sound insulation, calculated using the following formula:

$$L'_{nT} = L_1 + 10\log(T/T_0) \text{ dB}$$

Where: L_1 is the mean sound pressure level due to the tapping machine measured in the receiving room using fixed point technique.
 T is the mean receiving room reverberation time (derived from T_{20} , secs).
 T_0 is the reference reverberation time (= 0.5s for dwelling)

6. TEST CERTIFICATES (on following page's)

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

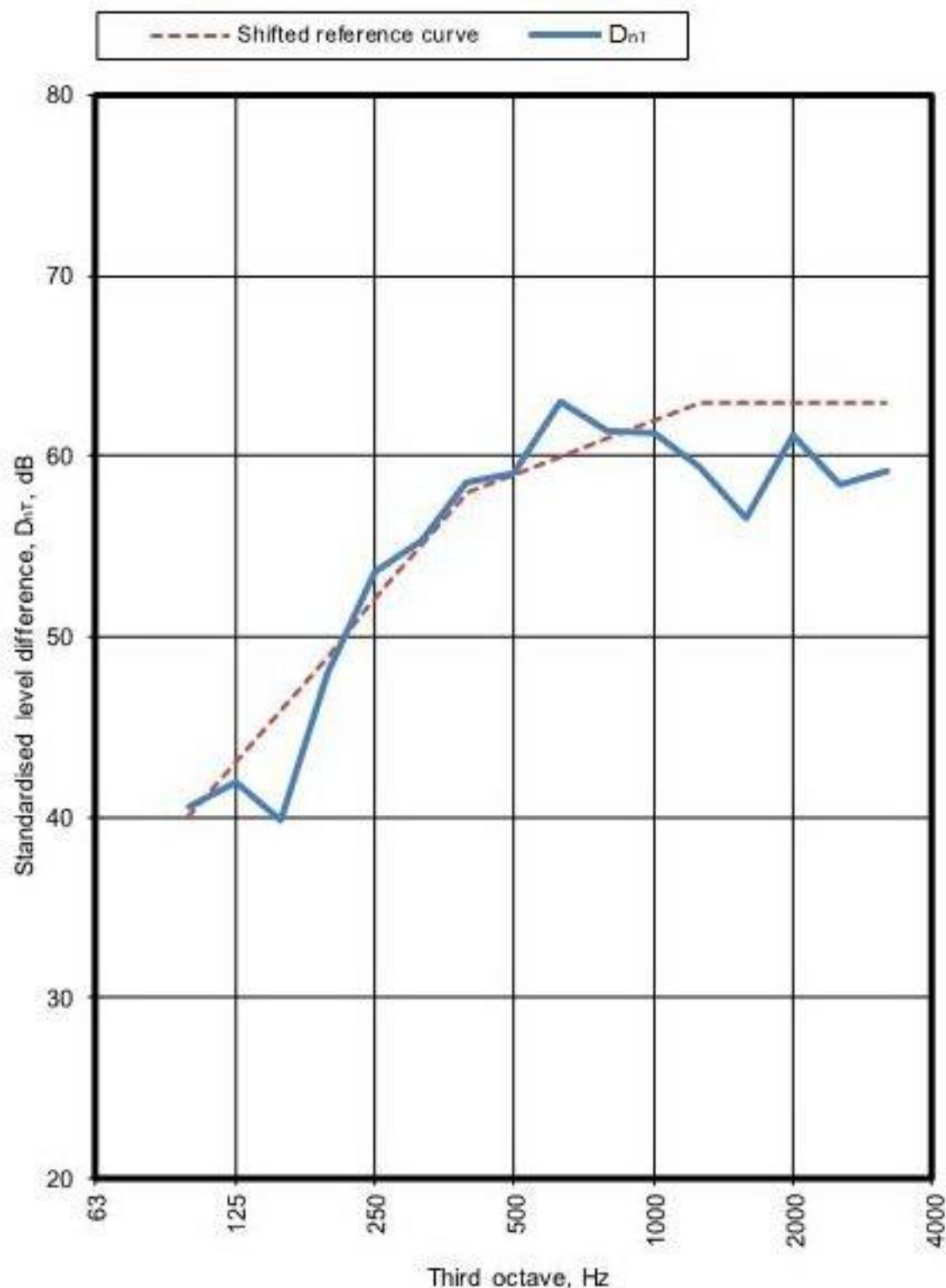
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 22 Living room / Kitchen and Flat 21 Living room / Kitchen

Source room volume (m³): 68

Receiving room volume (m³): 56

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	40.6
125	41.9
160	39.8
200	48.0
250	53.6
315	55.3
400	58.6
500	59.1
630	63.0
800	61.4
1000	61.3
1250	59.4
1600	56.6
2000	61.2
2500	58.4
3150	59.2
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 59 (-2;-6)

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

No. of test report: 6906/1.01

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

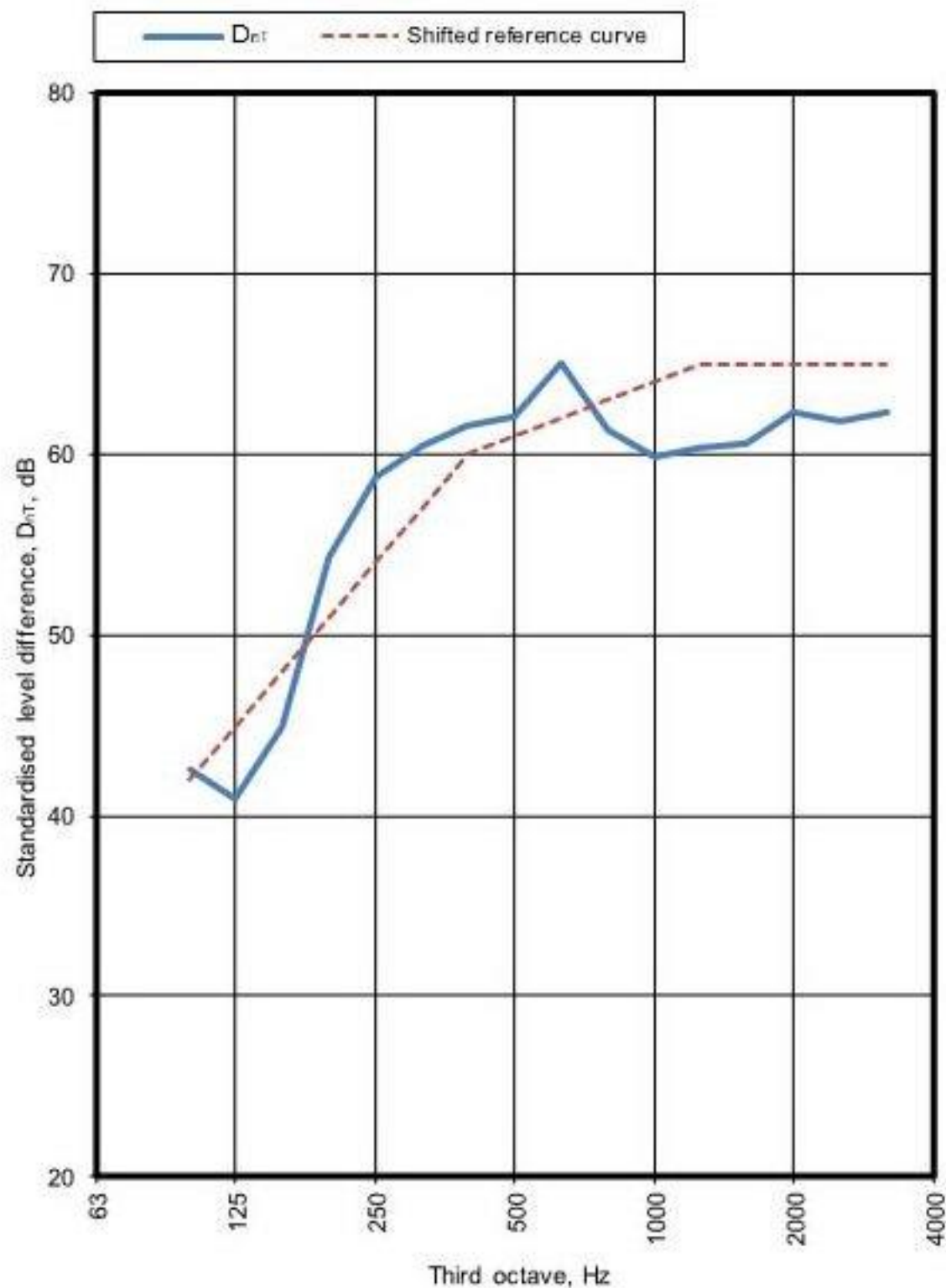
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 31 Living room / Kitchen and Flat 30 Bedroom

Source room volume (m³): 58

Receiving room volume (m³): 32

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	42.6
125	40.9
160	44.9
200	54.3
250	58.8
315	60.5
400	61.6
500	62.1
630	65.0
800	61.4
1000	59.8
1250	60.3
1600	60.6
2000	62.3
2500	61.9
3150	62.3
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 61 (-2;-5)

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

No. of test report: 6906/1.02

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

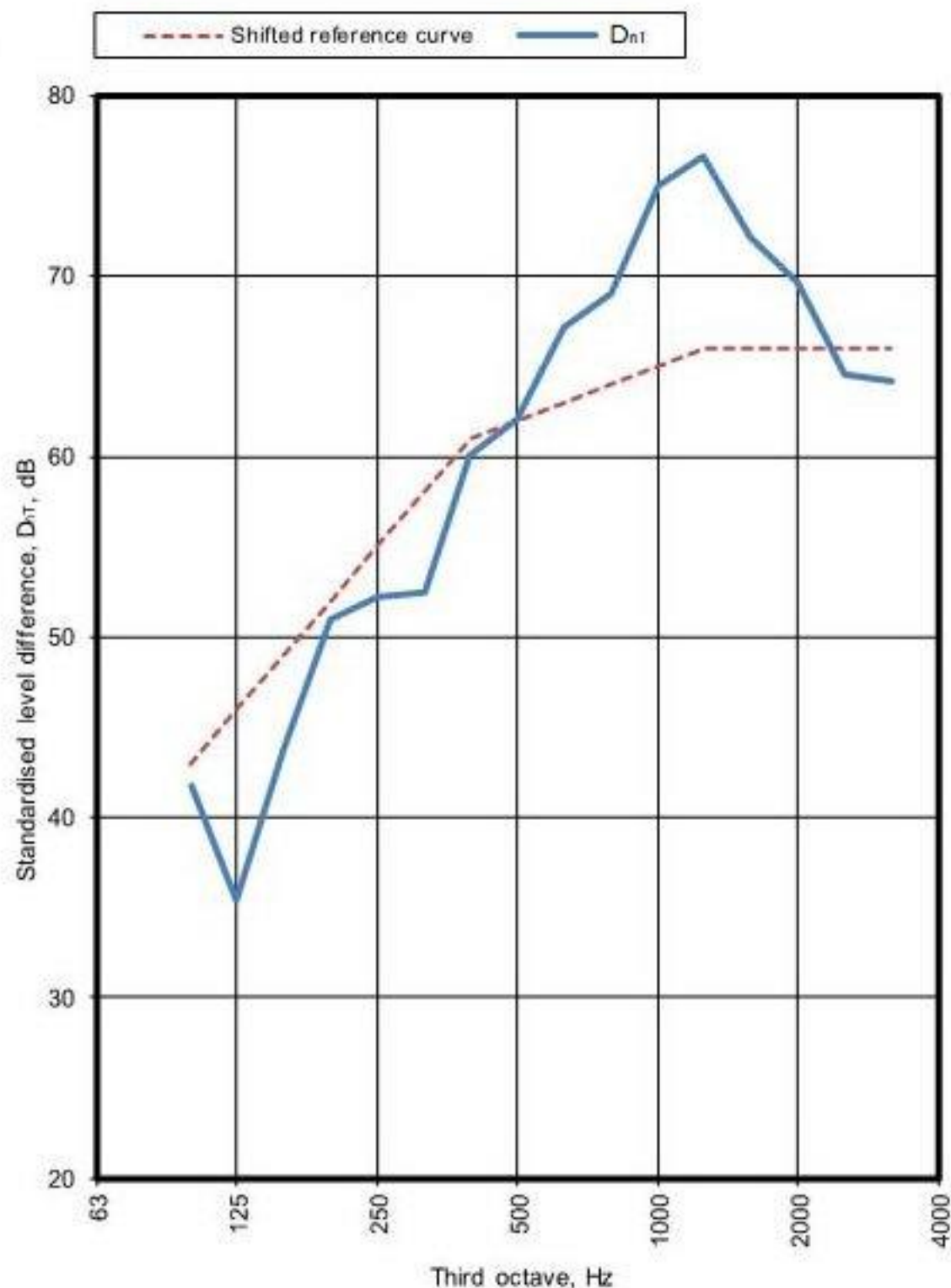
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 23 Bedroom and Flat 24 Bedroom

Source room volume (m³): 32

Receiving room volume (m³): 30

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	41.7
125	35.4
160	43.7
200	51.0
250	52.2
315	52.5
400	60.1
500	62.1
630	67.2
800	69.0
1000	75.0
1250	76.6
1600	72.1
2000	69.7
2500	64.5
3150	64.2
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) : 62 (-4;-9)

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

No. of test report: 6906/1.03

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

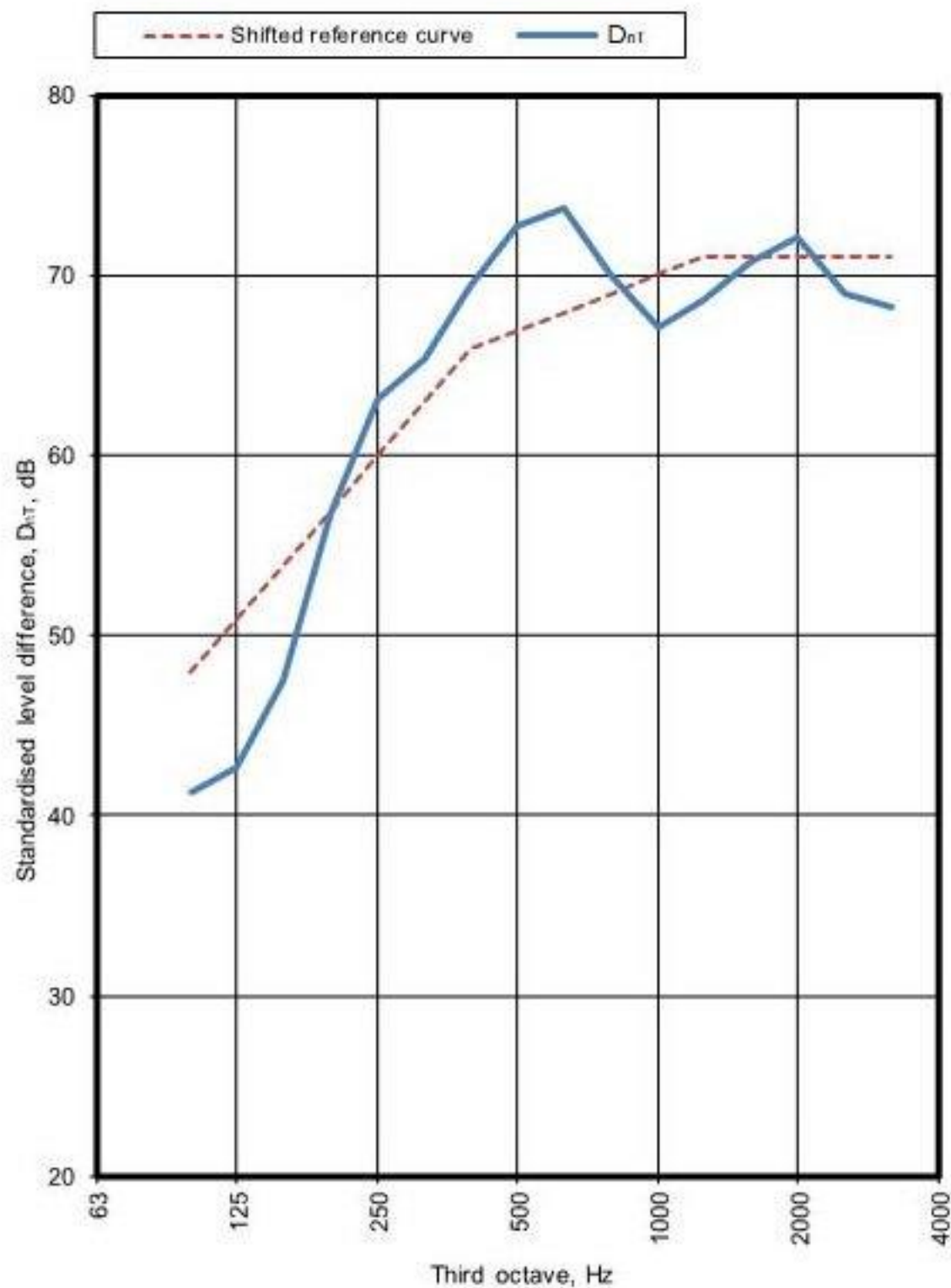
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 18 Living room / Kitchen and Flat 17 Bedroom

Source room volume (m³): 88

Receiving room volume (m³): 32

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	41.3
125	42.7
160	47.6
200	56.8
250	63.1
315	65.4
400	69.4
500	72.8
630	73.7
800	70.0
1000	67.1
1250	68.6
1600	70.8
2000	72.1
2500	69.0
3150	68.3
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) = 67 (-3;-9)

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

No. of test report: 6906/1.04

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

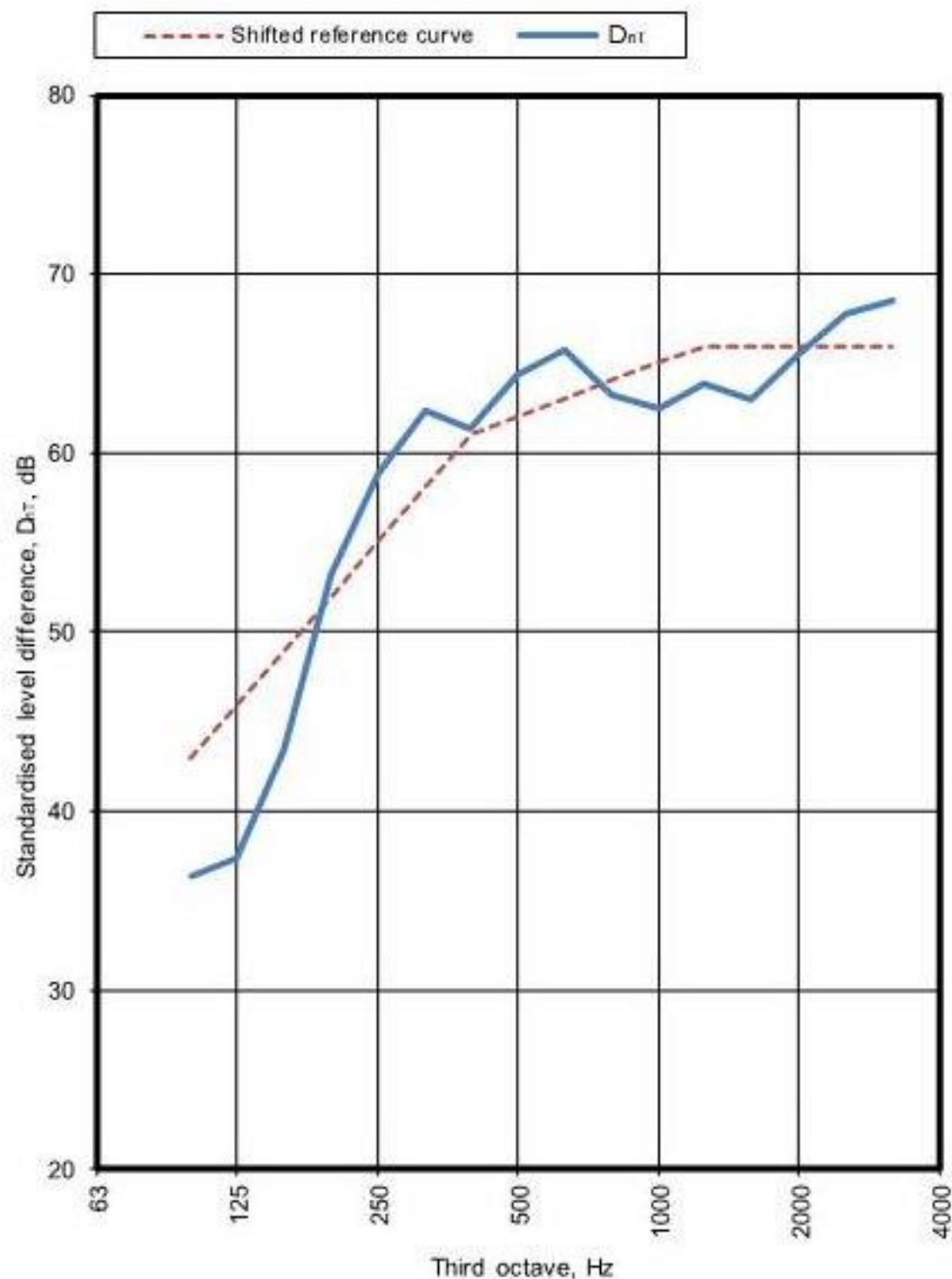
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 17 Living room / kitchen and Flat 16 Living room / Kitchen

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	36.4
125	37.4
160	43.4
200	53.2
250	58.9
315	62.3
400	61.3
500	64.4
630	65.8
800	63.2
1000	62.5
1250	63.9
1600	63.0
2000	65.5
2500	67.8
3150	68.5
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) = 62 (-3;-9)

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

No. of test report: 6906/1.05

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

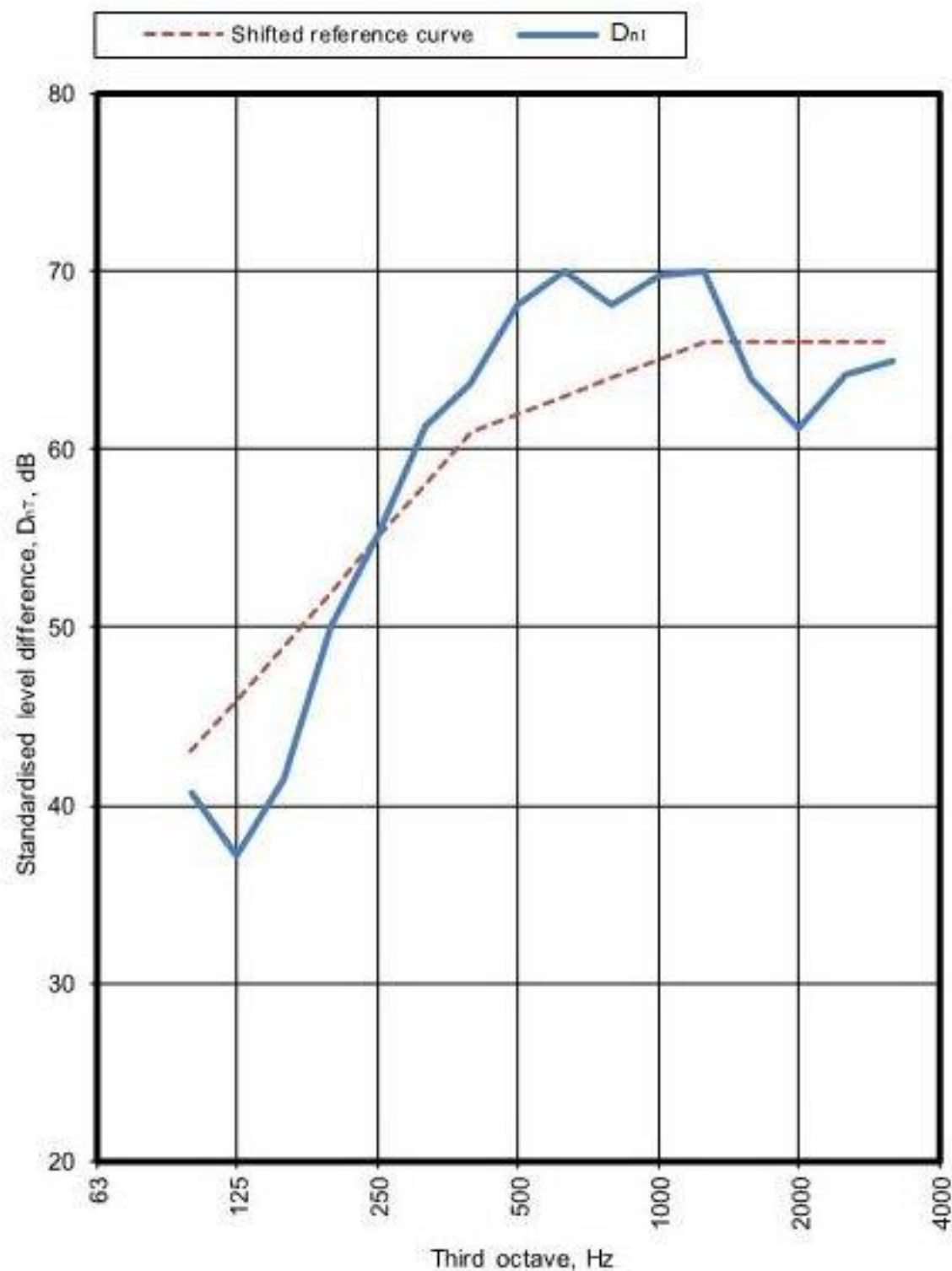
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Wall between Flat 13 Living room / Kitchen and Flat 14 Bedroom

Source room volume (m³): 88

Receiving room volume (m³): 28

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	40.7
125	37.2
160	41.5
200	50.0
250	55.2
315	61.3
400	63.7
500	68.2
630	70.1
800	68.1
1000	69.8
1250	70.0
1600	64.0
2000	61.2
2500	64.2
3150	65.0
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 62 (-3;-9)

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

No. of test report: 6906/1.06

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature:

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

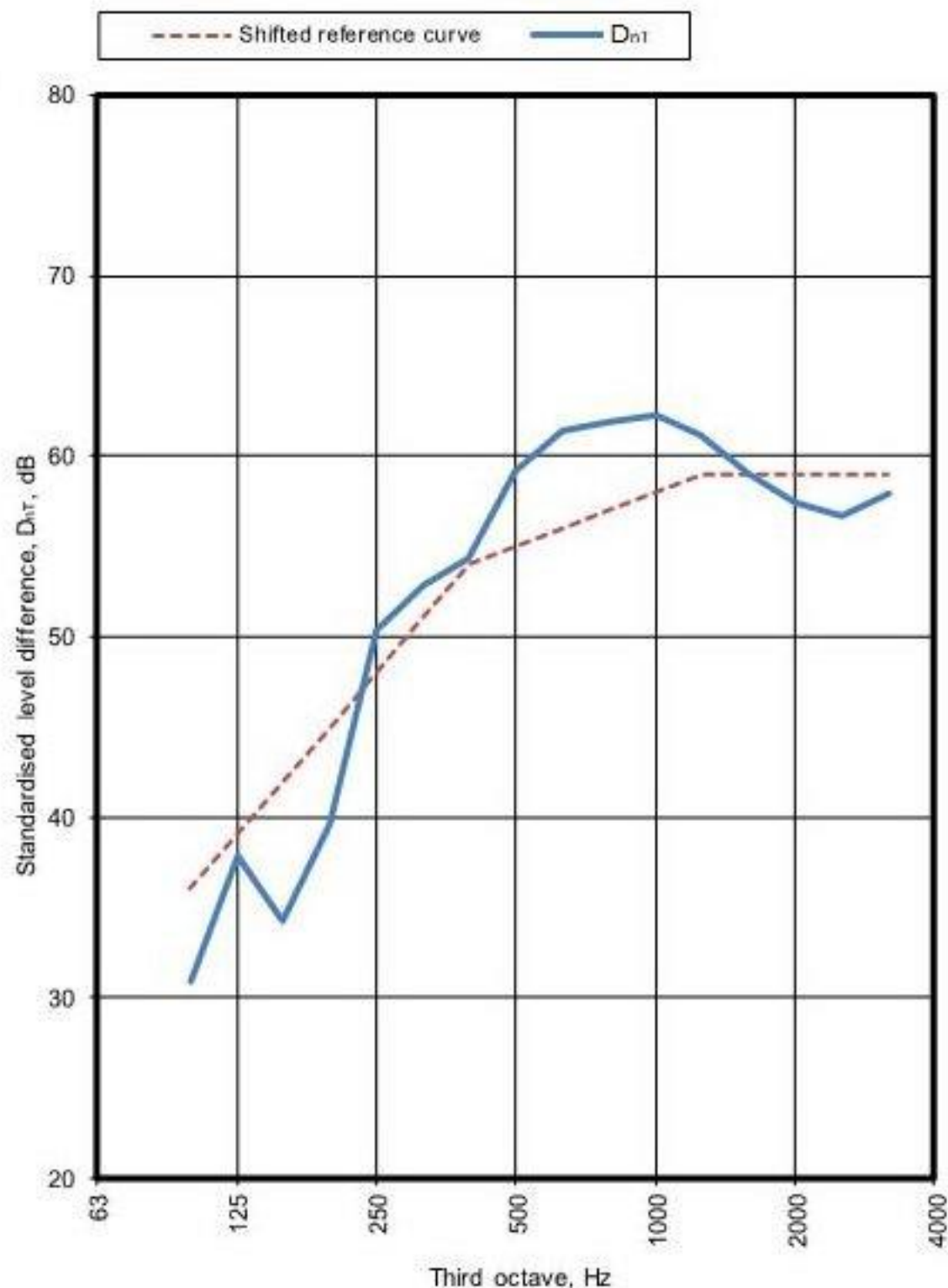
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 22 Living room / Kitchen and Flat 11 Living room / Kitchen

Source room volume (m³): 68

Receiving room volume (m³): 68

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	30.9
125	37.9
160	34.3
200	39.6
250	50.4
315	52.9
400	54.4
500	59.2
630	61.4
800	61.9
1000	62.3
1250	61.2
1600	59.1
2000	57.4
2500	56.7
3150	57.9
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 55 (-2;-8)

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

No. of test report: 6906/2.01

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

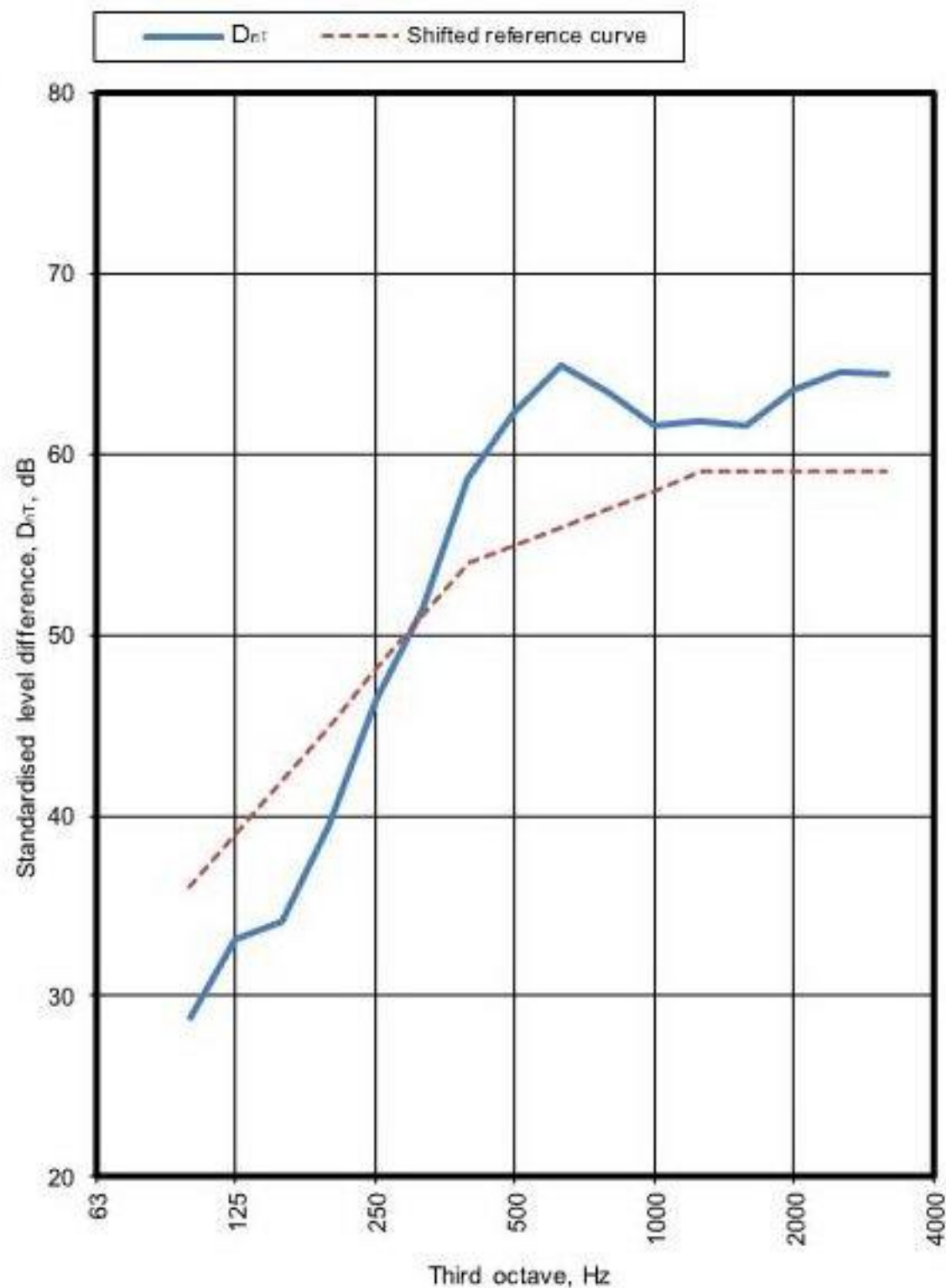
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 31 Living room / Kitchen and Flat 320 Living room / Kitchen

Source room volume (m³): 58

Receiving room volume (m³): 58

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	28.8
125	33.2
160	34.1
200	39.4
250	46.4
315	51.4
400	58.6
500	62.3
630	64.9
800	63.5
1000	61.6
1250	61.9
1600	61.6
2000	63.6
2500	64.6
3150	64.4
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 55 (-3;-10)

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

No. of test report: 6906/2.02

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 24/06/2019

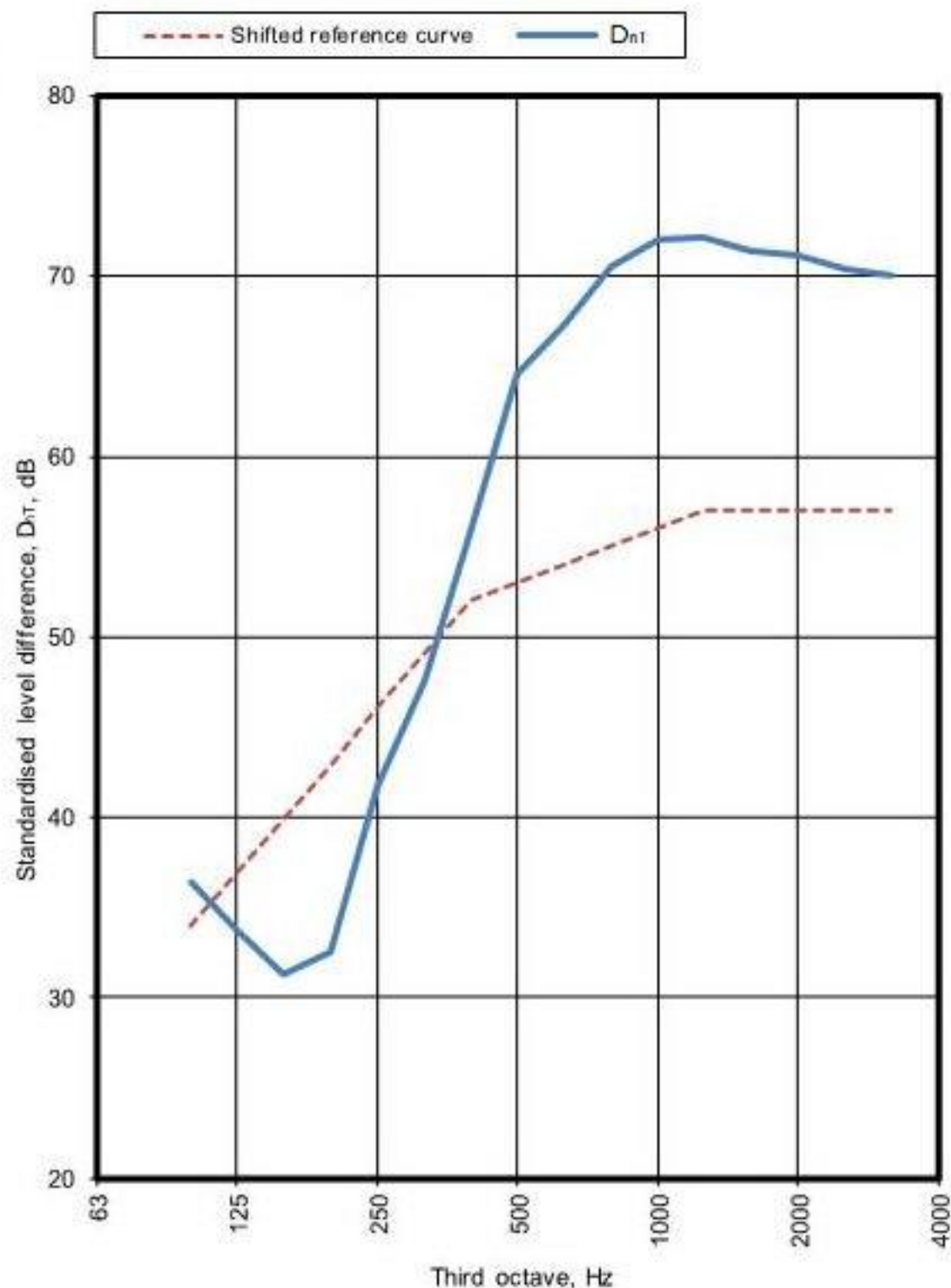
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 23 Bedroom and Flat 12 Bedroom

Source room volume (m³): 32

Receiving room volume (m³): 32

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	36.4
125	33.8
160	31.3
200	32.6
250	41.8
315	47.6
400	55.7
500	64.6
630	67.3
800	70.5
1000	72.0
1250	72.2
1600	71.4
2000	71.2
2500	70.4
3150	70.0
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) : 53 (-3;-8)

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

No. of test report: 6906/2.03

Name of test institute: Acoustic Associates South West Ltd

Date: 24/06/2019

Signature:

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

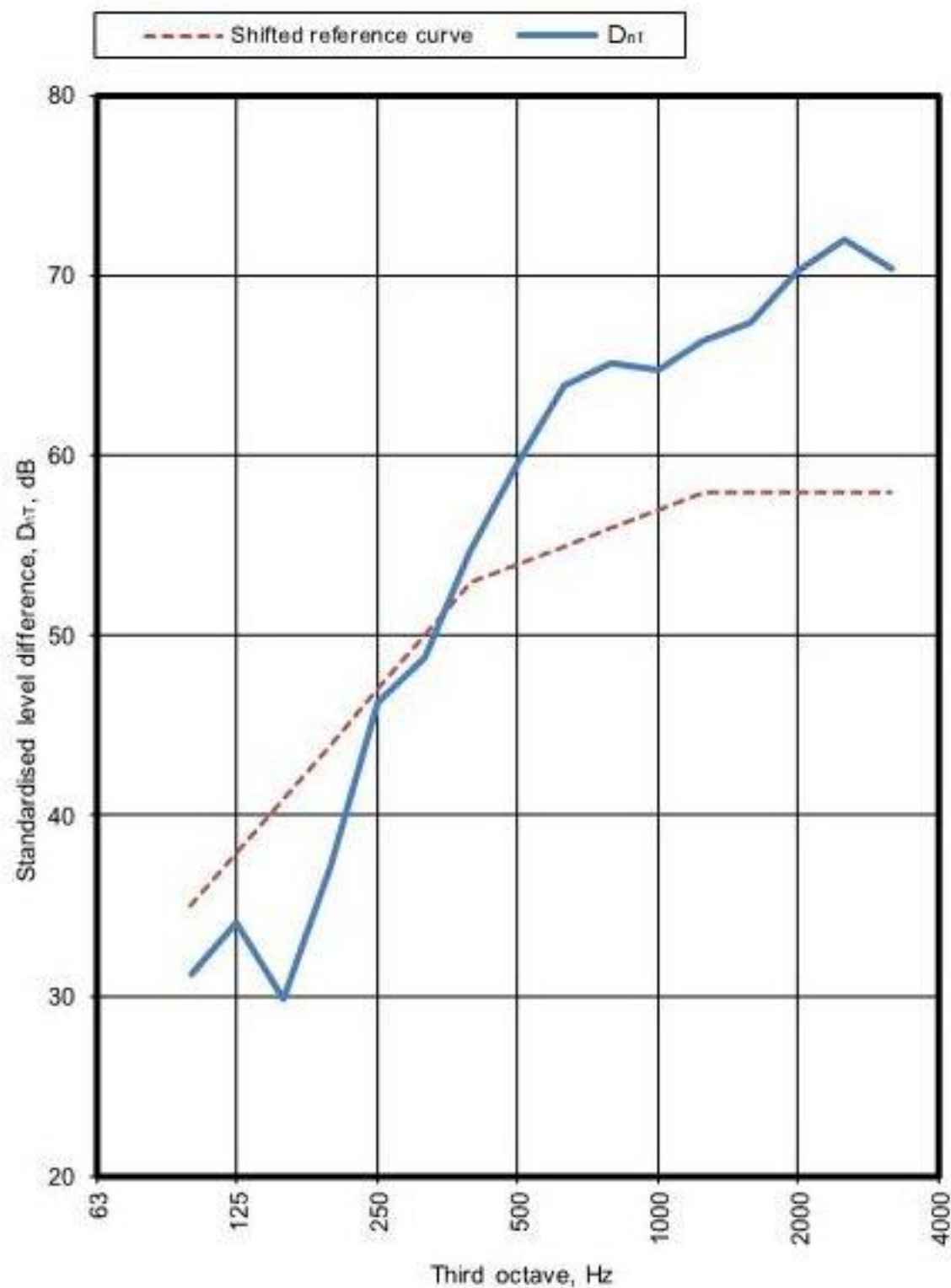
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 18 Living room / Kitchen and Flat 7 Living room / Kitchen

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	31.2
125	34.1
160	29.8
200	37.2
250	46.3
315	48.8
400	54.6
500	59.5
630	63.9
800	65.1
1000	64.7
1250	66.4
1600	67.4
2000	70.2
2500	72.0
3150	70.4
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) = 54 (-4;-9)

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

No. of test report: 6906/2.04

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

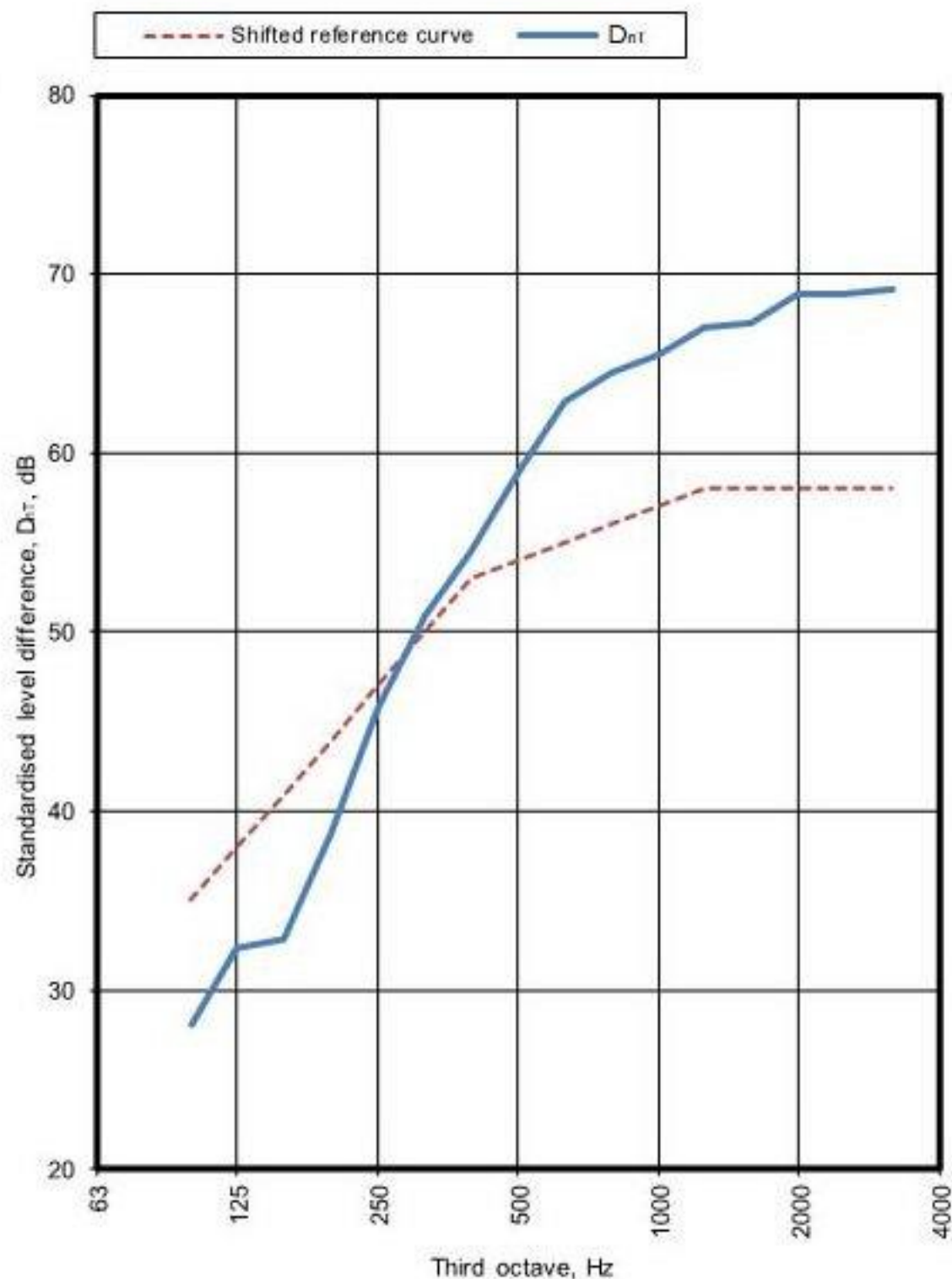
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 17 Living room / kitchen and Flat 6 Living room / Kitchen

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	D _{nt} (1/3 octave) dB
50	
63	
80	
100	28.1
125	32.3
160	32.9
200	38.8
250	45.8
315	50.9
400	54.5
500	58.8
630	62.9
800	64.5
1000	65.5
1250	67.0
1600	67.2
2000	68.9
2500	68.9
3150	69.2
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nt,w} (C; C_{tr}) = 54 (-3;-9)

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

No. of test report: 6906/2.05

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

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

Client: RJ Morrall Ltd

Date of test: 18/06/2019

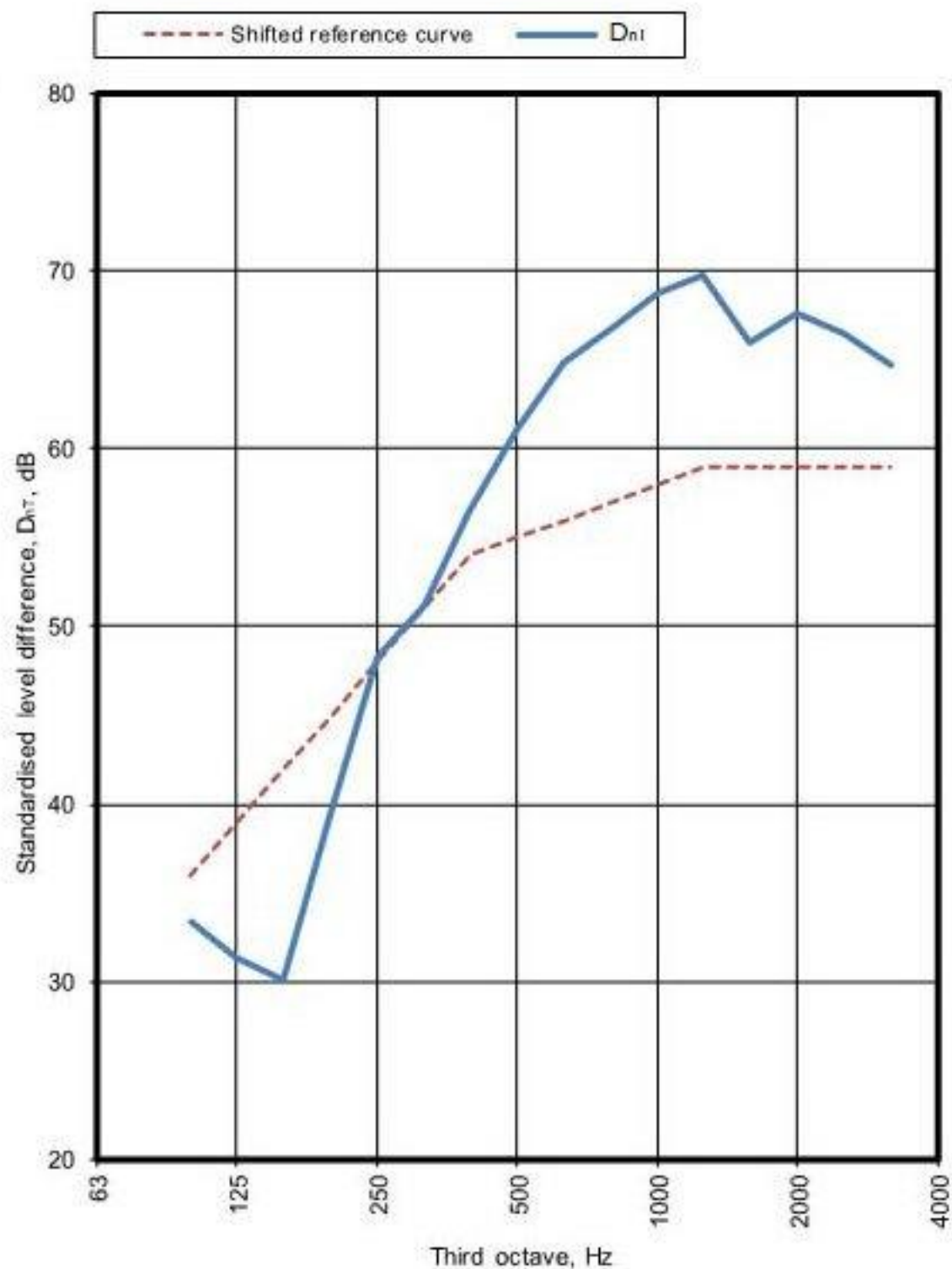
Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 13 Living room / Kitchen and Flat 2 Living room / Kitchen

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	D _{nT} (1/3 octave) dB
50	
63	
80	
100	33.4
125	31.3
160	30.1
200	39.5
250	48.3
315	51.2
400	56.5
500	61.0
630	64.8
800	66.8
1000	68.8
1250	69.8
1600	66.0
2000	67.6
2500	66.5
3150	64.7
4000	
5000	



* limit of measurement ($\geq$ Value)

Rating according to ISO 717-1

D_{nT,w} (C; C_{tr}) = 55 (-4;-10)

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

No. of test report: 6906/2.06

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

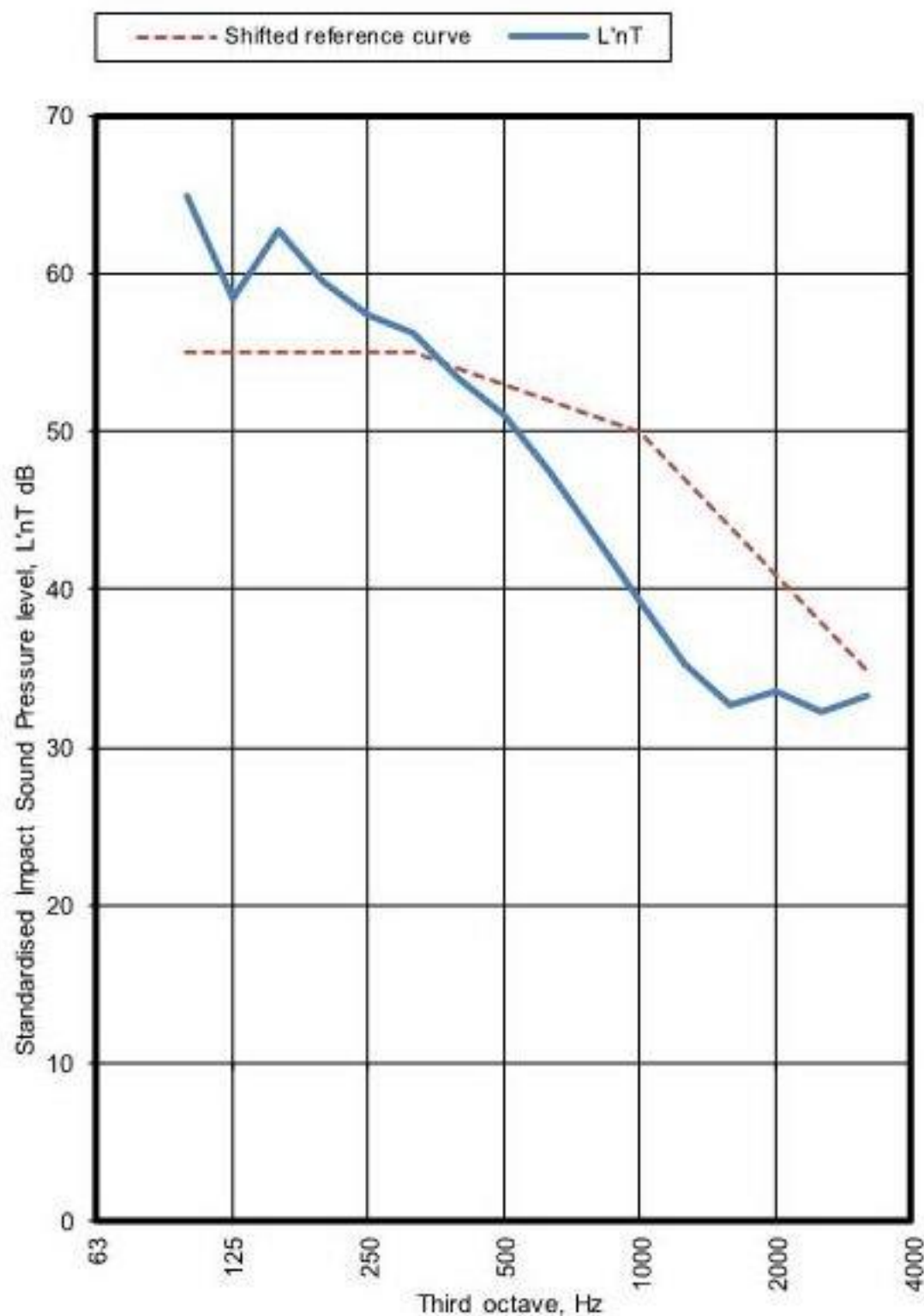
Object: Floor between Flat 22 Living room / Kitchen and Flat 11 Living room / Kitchen

Construction: Type 3

Source room volume (m³): 68

Receiving room volume (m³): 68

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	64.9
125	58.5
160	62.7
200	59.6
250	57.4
315	56.3
400	53.4
500	51.0
630	47.5
800	43.6
1000	39.3
1250	35.3
1600	32.7
2000	33.6
2500	32.2
3150	33.2
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 53

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

No. of test report: 6906/3.01

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

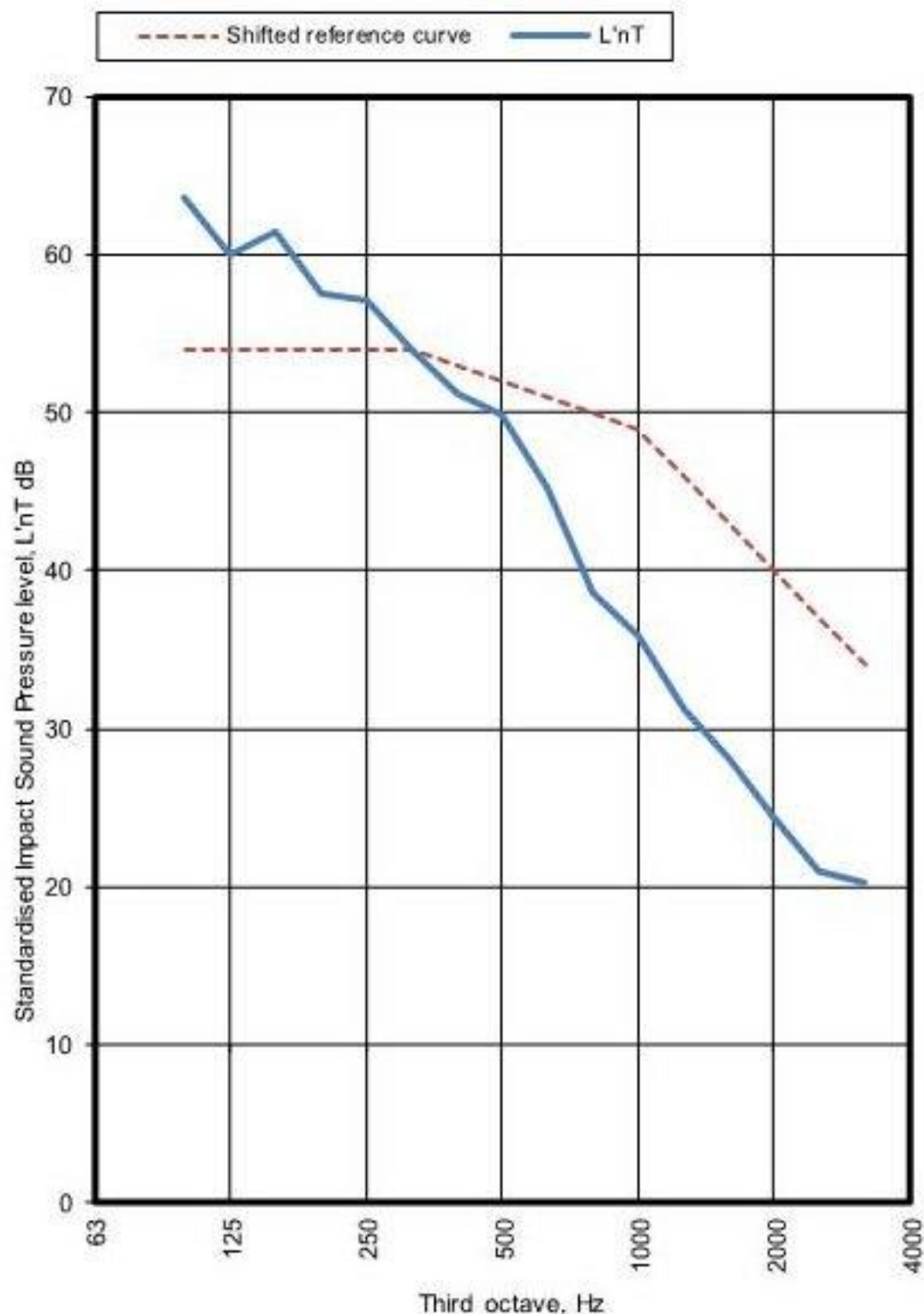
Object: Floor between Flat 31 Living room / Kitchen and Flat 320 Living room / Kitchen

Construction: Type 3

Source room volume (m³): 58

Receiving room volume (m³): 58

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	63.7
125	60.0
160	61.4
200	57.5
250	57.1
315	54.0
400	51.2
500	49.9
630	45.2
800	38.6
1000	35.9
1250	31.3
1600	28.1
2000	24.4
2500	21.0
3150	20.2
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 52

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

No. of test report: 6906/3.02

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature:

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

Object: Floor between Flat 23 Bedroom and Flat 12 Bedroom

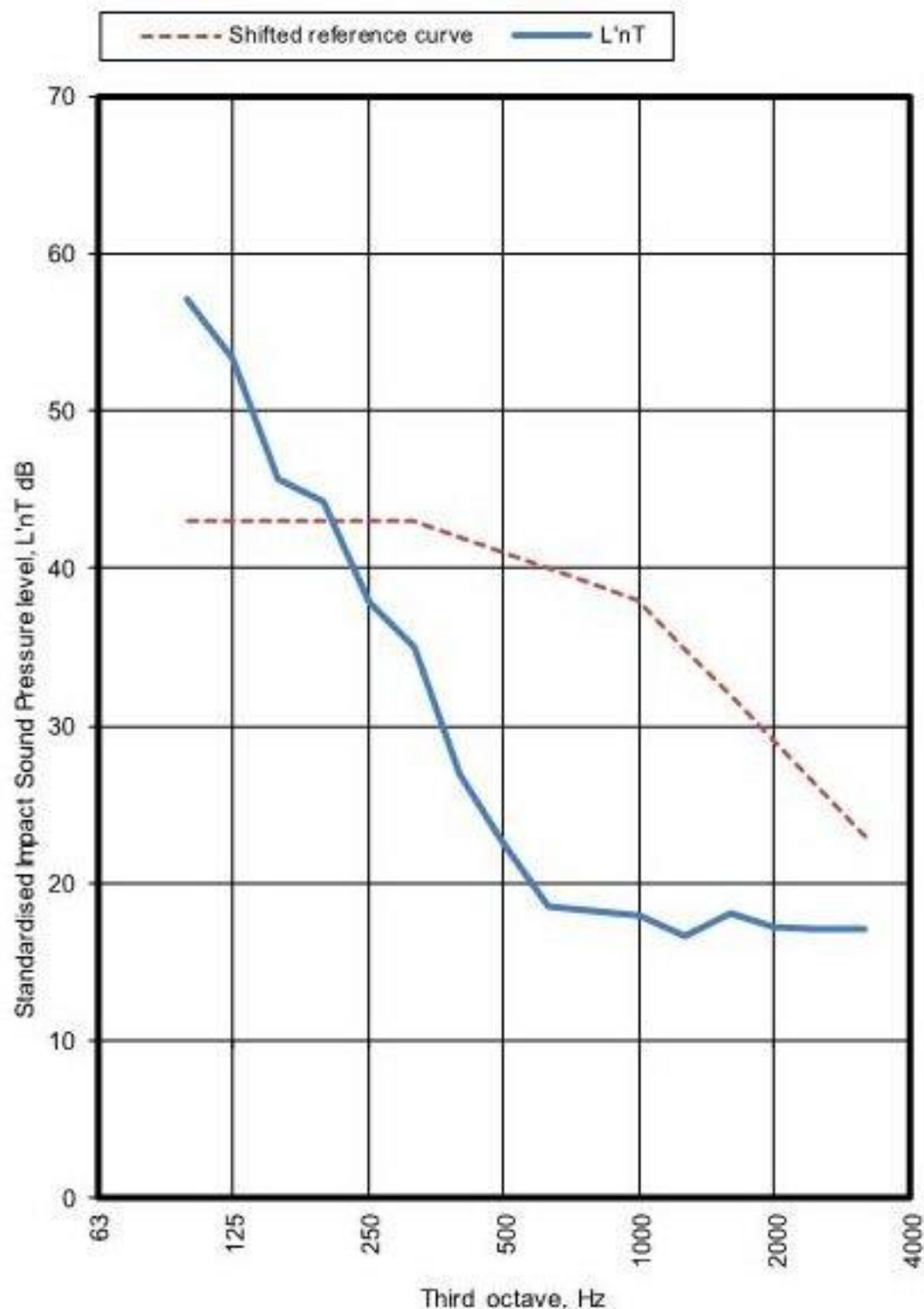
(Tap on Carpet)

Construction: Type 3

Source room volume (m³): 32

Receiving room volume (m³): 32

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	57.2
125	53.4
160	45.7
200	44.3
250	37.9
315	35.0
400	26.9
500	22.5
630	18.5
800	18.3
1000	17.9
1250	16.7
1600	18.1
2000	17.2
2500	17.0
3150	17.1
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 41

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

No. of test report: 6906/3.03

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature:

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

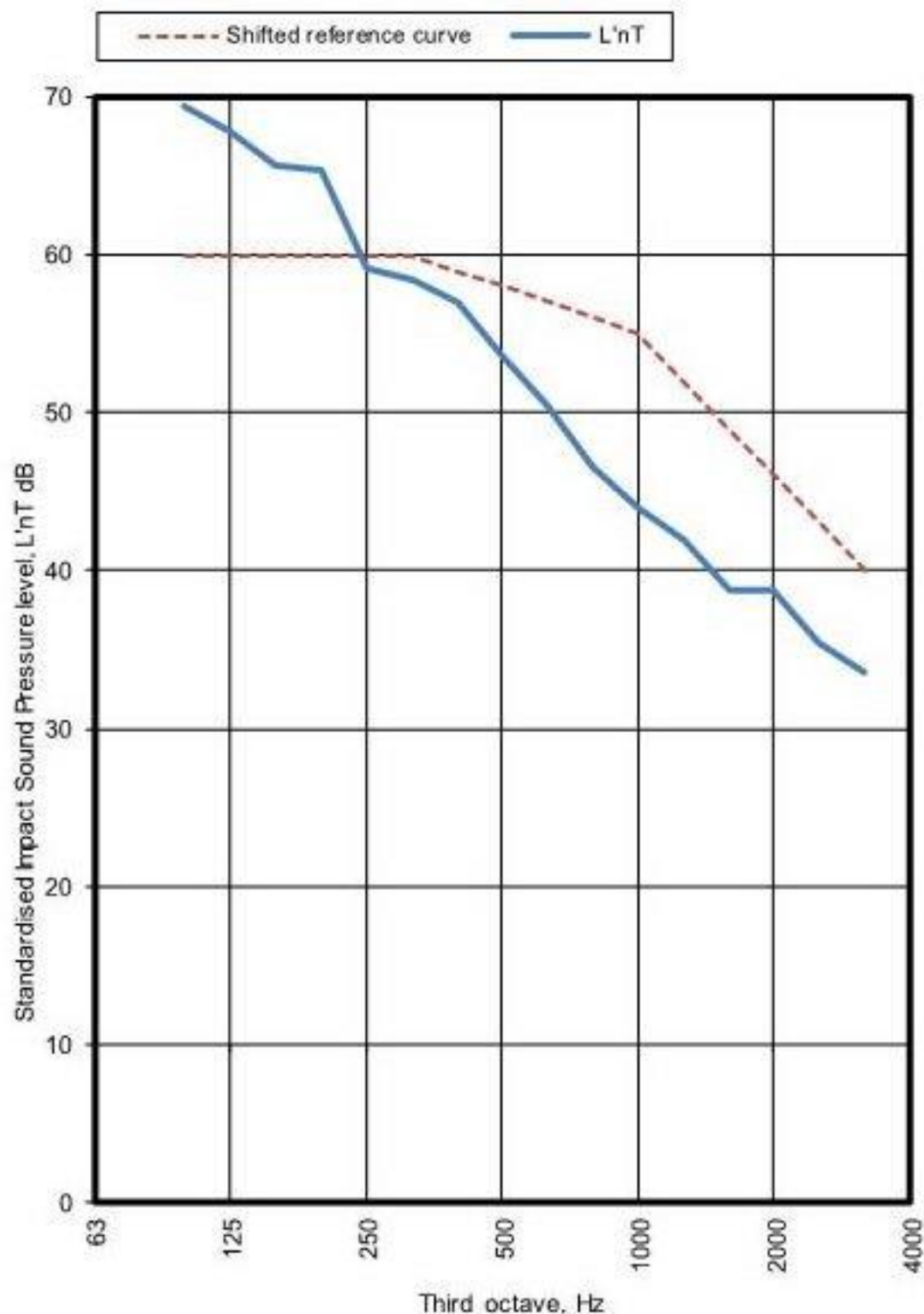
Object: Floor between Flat 18 Living room / Kitchen and Flat 7 Living room / Kitchen

Construction: Type 3

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	69.4
125	67.9
160	65.7
200	65.3
250	59.2
315	58.4
400	57.0
500	53.6
630	50.5
800	46.6
1000	44.0
1250	41.9
1600	38.7
2000	38.8
2500	35.4
3150	33.6
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 58

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

No. of test report: 6906/3.04

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

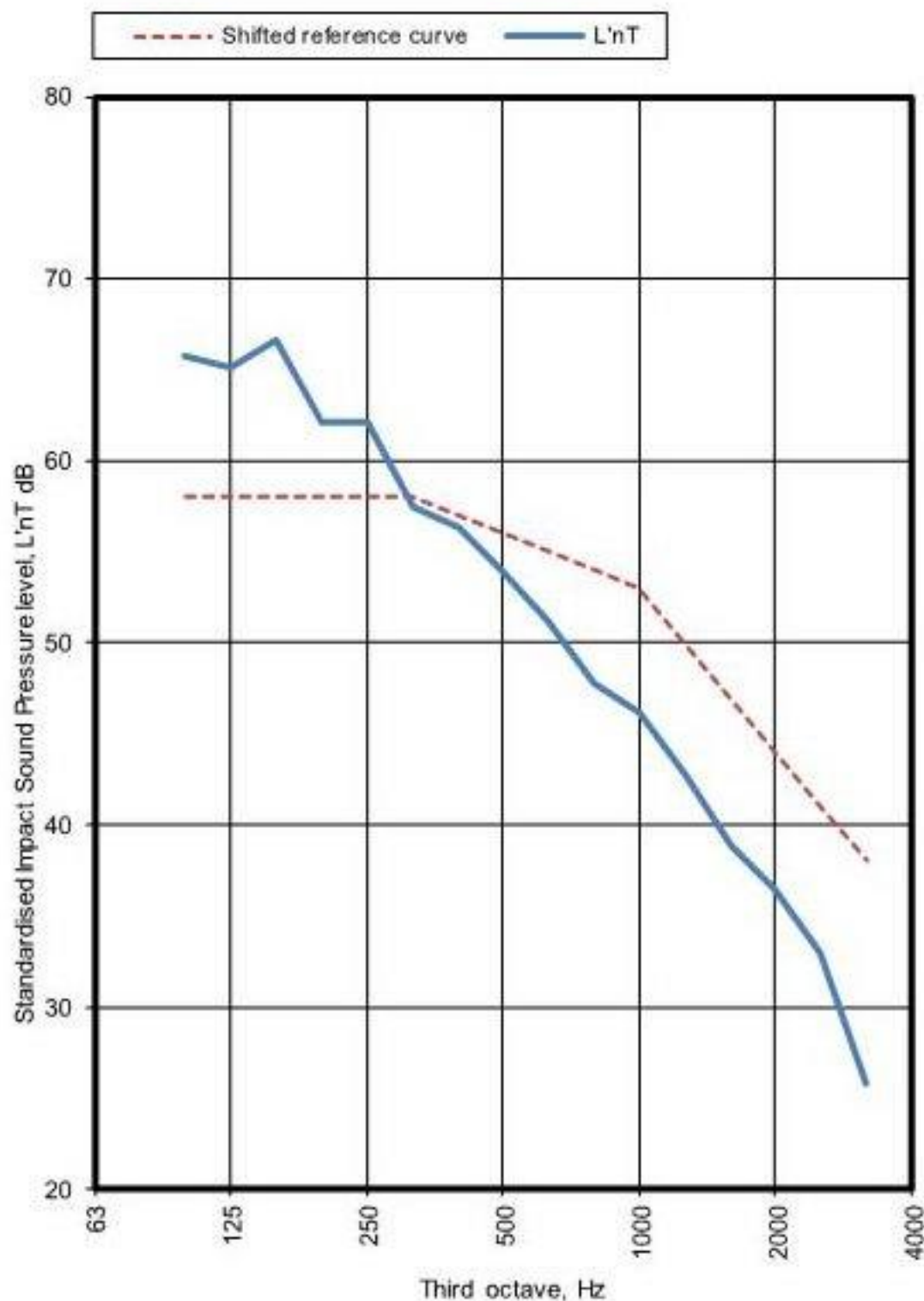
Object: Floor between Flat 17 Living room / kitchen and Flat 6 Living room / Kitchen

Construction: Type 3

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	65.8
125	65.1
160	66.6
200	62.1
250	62.1
315	57.4
400	56.3
500	53.9
630	51.2
800	47.8
1000	46.2
1250	42.8
1600	38.9
2000	36.5
2500	33.0
3150	25.8
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 56

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

No. of test report: 6906/3.05

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]

Standardized impact sound pressure levels according to ISO 140-7 Field measurements of impact sound insulation of floors

Client: RJ Morrall Ltd

Date of test: 18/06/2019

Project: Willow Park, Petersfield Road, Portsmouth, PO9 2HU

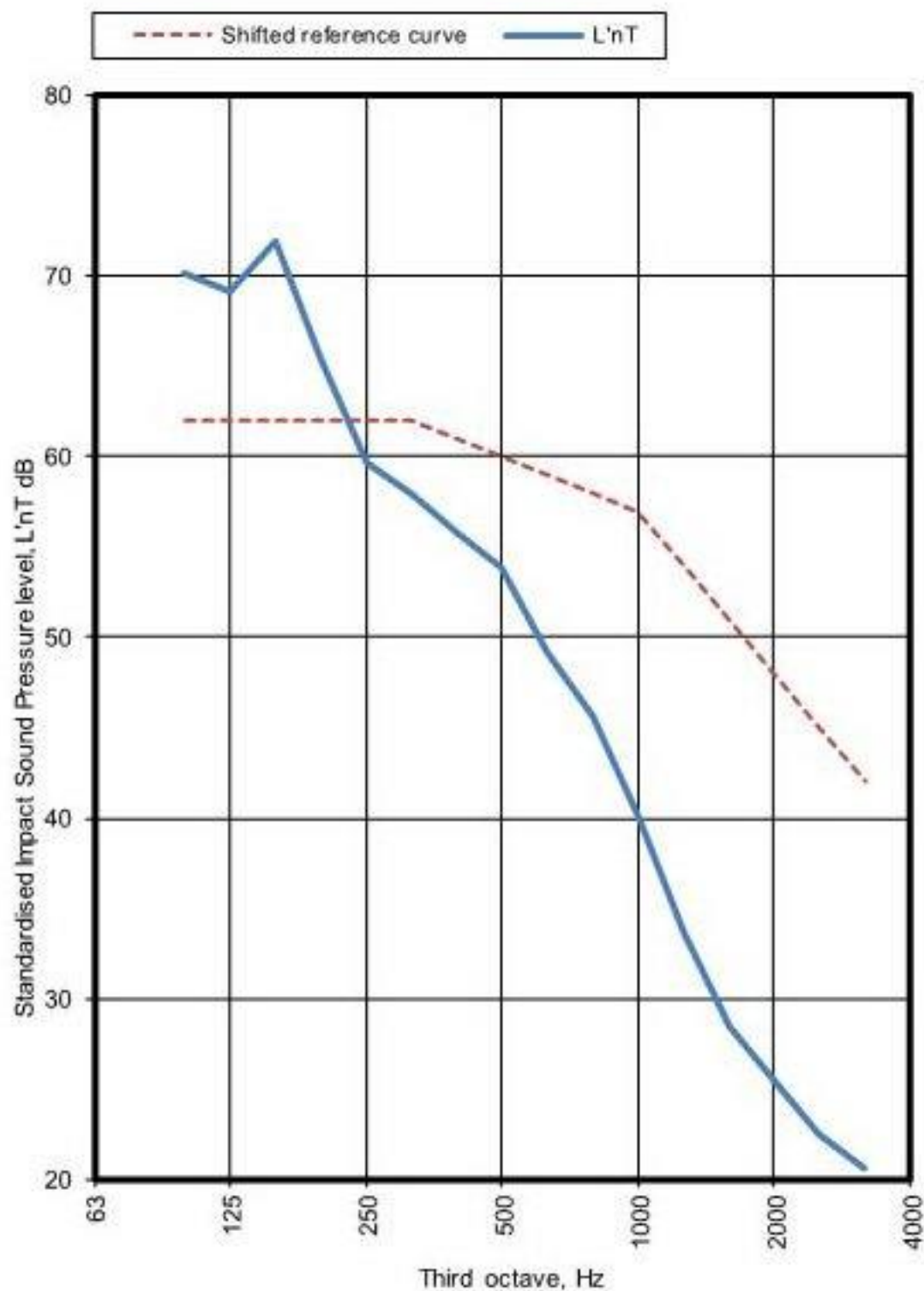
Object: Floor between Flat 13 Living room / Kitchen and Flat 2 Living room / Kitchen

Construction: Type 3

Source room volume (m³): 88

Receiving room volume (m³): 88

Frequency f Hz	L'nT (1/3 octave) dB
50	
63	
80	
100	70.2
125	69.2
160	71.9
200	65.4
250	59.7
315	57.9
400	55.8
500	53.9
630	49.2
800	45.6
1000	40.1
1250	33.6
1600	28.4
2000	25.5
2500	22.5
3150	20.6
4000	
5000	



* limit of measurement ($\leq$ Value)

Rating according to ISO 717-1

L'nT,w = 60

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

No. of test report: 6906/3.06

Name of test institute: Acoustic Associates South West Ltd

Date: 19/06/2019

Signature: [Redacted]