

**Sound Insulation Test Report,
Produced in Compliance with Approved Document E,
Guidance to the Building Regulations.**

Test Reference Number: DRUK/SIT/MJP/PRH/0199
Date of Test: 24th September 2025
Date of Report: 26th September 2025
Test Location: Pilsworth Road
Heywood
Oldham
OL10 3AD

Report Prepared for: R & M Property Group Ltd
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Sale
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Test Conducted by: Mark Pimlett
Report Prepared by: Debbie Griffin
Report Authorised by: Robert Smith

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1.0 **Summary**

Druk Limited was commissioned by R and M Property Group Ltd in Sale to conduct sound insulation tests to establish whether the airborne and impact sound insulation, as appropriate, of the tested walls and floors separating the flats within the Pilsworth Road development in Heywood, complied with the sound insulation performance requirements contained within Approved Document E (ADE).

As the Pilsworth Road development comprises new build dwellings, it would fall within the "Purpose built dwelling houses and flats" category detailed in Approved Document E.

The results of the sound insulation tests have demonstrated that the airborne and impact sound insulation, as appropriate, of the tested walls and floors separating the flats within the Pilsworth Road development in Heywood, complied with the sound insulation performance requirements contained within ADE and so may be regarded as having 'passed' the tests.

Report prepared by:



Debbie Griffin

Report authorised by:



Robert Smith

2.0 Introduction

Druk Limited was commissioned by R and M Property Group Ltd in Sale to conduct sound insulation tests, in accordance with the requirements of the Building Regulations Approved Document E (ADE) 2003 edition (including the 2004, 2010, 2013 and 2015 amendments), guidance to the Building Regulations 2010. The tests were conducted to establish whether the airborne and impact sound insulation, as appropriate, of the tested walls and floors separating the flats within the Pilsworth Road development in Heywood, complied with the sound insulation performance requirements contained within Approved Document E (ADE).

3.0 Sound Insulation Performance Standards

3.1 Approved Document E, 2003 edition

Approved Document E (ADE) "Resistance to the Passage of Sound", 2003 edition, (amended in 2004, 2013 and 2015) provides guidance as to how the requirements of the Building Regulations 2010, as they relate to sound insulation, may be met. The Approved Document details specific sound insulation performance requirements that are required for separating elements, walls and floors, in a number of situations, namely: dwelling houses and flats whether 'purpose built' or 'formed by material change of use' and rooms for residential purposes which may be either 'purpose built' or 'formed by material change of use'. The specific sound insulation performance requirements that should be achieved by either 'purpose built' separating elements or those formed by 'material change of use' are detailed in Tables 0.1a and 0.1b of Section 0 in Approved Document E.

3.2 Requirements for the Tested Elements

As the Pilsworth Road development in Heywood comprises eight new build flats, it would fall within the "Purpose built dwelling houses and flats" category detailed in Table 0.1a of Approved Document E. As such, the sound insulation performance of the separating walls and floors should comply with the criteria highlighted (emboldened) in the table below.

Sound Insulation Performance Criteria

Dwelling Houses and Flats		
Situation	Airborne sound insulation, $D_{nT,w} + C_{tr}$ dB (Minimum Value)	Impact sound insulation, $L'_{nT,w}$ dB (Maximum Value)
Purpose Built		
Walls	45	-
Floors and stairs	45	62

With respect to airborne sound insulation, the quoted performance standard is a minimum requirement, therefore the obtained test result should exceed, or as a minimum equal, the requirement.

For impact sound insulation the quoted performance standard is a maximum level, therefore the obtained test result should not exceed this performance standard.

4.0 Sound Test Details

4.1 Description of the Tested Flats

The Pilsworth Road development comprises eight new built flats arranged over the ground and first floors **of the development**. The **dwellings are** of timber frame construction with timber party floors. (See appendix 1 photograph 1).

The development is not believed to fall within the 'historic' building category as defined within ADE.

4.2 Test Details

The sound insulation tests were conducted between 10:00 - 12:30 hours on the 24th September 2025.

All the measurements were made by Mr. Mark Pimlett of Druk Limited, 87 St Albans Road, Halifax West Yorkshire. Druk Limited is a UKAS accredited testing laboratory No. 4507, for the purposes of pre-completion sound insulation testing, to demonstrate compliance with the requirements of Approved Document E (2003 edition incorporating the 2004, 2010, 2013 and 2015 amendments), accreditation number 4507.

The sound insulation tests and all measurements made in connection with the tests were undertaken in accordance with the suggested procedures detailed in BS EN ISO 140 parts 4 and 7:1998: 'Field Measurements of Airborne Sound Insulation Between Rooms' and 'Field Measurements of Impact Sound Insulation Between Rooms', respectively. The results of the tests were analysed in accordance with the requirements of BS EN ISO 717 parts 1 and 2:1997: 'Rating of Sound Insulation in Buildings and of Building Elements – Airborne Sound Insulation' and 'Rating of Sound Insulation in Buildings and of Building Elements – Impact Sound Insulation', respectively.

In addition all the procedures contained in Annex B of Approved Document E, guidance to the Building Regulations, were followed.

4.3 Equipment

The equipment, detailed in the table overleaf, was used throughout the sound insulation tests.

All the equipment used is calibrated by a UKAS accredited calibration laboratory and the calibration certificates are available on request.

With reference to the impact sound insulation test, the correct tapping machine hammer drop heights were checked and set, as necessary, before the tests.

The sound level meter was calibrated before and on completion of the tests, with no significant deviation being observed.

Sound Insulation Testing Equipment

Equipment Description	Manufacturer	Type Number	Serial Number	Date of Calibration	Calibration Certificate Numbers
Sound Level Meter	Rion	NA28	30152101	7 th February 2024	06588/2, 06588/3 & 06588/4
Acoustic Calibrator	Rion	NC 74	35046847	28 th January 2025	07066/1
Tapping Machine	ANV	TM 02	TM 02017	19 th February 2025	07126/1
Noise Sources	Yamaha	DXR 10 mk2	BECZ01046	-	
Pink Noise Sources	Neutrik/Mini Instruments	MR2	G2P-RAEUM-GO	-	

* Please note, in the case of a tapping machine the calibration is more correctly referred to as a verification of performance with reference to the requirements detailed in ISO 140 part 7

4.4 Testing Procedures

The field testing of separating elements for airborne sound insulation involves the generation and measurement of a controlled 'level' of noise in one of the pair of rooms (the source room) under test and measuring the resulting noise level in the other room (the receiving room), separated by the element that is under test. In both rooms a minimum of ten individual and randomly selected measurement positions are used, such that a representative assessment of the noise level within the entire volume of the two rooms is made. In both rooms, spatial and temporal averaging of the noise levels is carried out, in each of the ten measurement positions, by manually rotating the microphone through a complete circular path.

Once the source and receiving room noise measurements have been made, corrections are applied to the measured noise levels to account for the effects of both extraneous background noise and the effects of acoustic absorption within the receiving room. With reference to the acoustic absorption of the receiving room, this is determined from measurements of the reverberation time.

Measurements of reverberation time are made within the receiving rooms only; the measurements are made by generating a continuous wide band 'pink' noise signal, for a predetermined time period, after which the signal is turned off and the noise decay within the room is timed. The reverberation time is established by using one noise source position and measuring up to 18 separate decays in a number of randomly selected microphone positions, with multiple measurements being made in each of the measurement positions.

The corrected source and receiving room noise measurements are used to calculate the Standardised Level Differences (D_{nT}) for the individual third octave bands between

100 – 3150Hz; these are then compared with reference values to determine the Weighted Standardised Level Difference ($D_{nT,w}$). In addition, a spectrum adaptation term, the C_{tr} , is calculated which is then added to the Weighted Standardised Level Difference in order to obtain the single figure ‘rating’ that is compared with the sound insulation performance requirements detailed in ADE.

Impact sound insulation measurements apply to separating floor structures only, they are intended to provide an indication of the floor’s ability to attenuate impact noise such as footfalls. The impact sound insulation is evaluated using a tapping machine which comprises five, 500 gramme, hammers that fall through 40mm at a rate of ten impacts per second.

The resulting noise, from the operation of the tapping machine, is measured in the receiving room only. The obtained noise levels from the receiving room are corrected for extraneous background noise and the effects of acoustic absorption using the method described above, finally allowing the Standardised Impact Sound Pressure Level (L'_{nT}) to be calculated for the individual third octave bands between 100 – 3150Hz. The L'_{nT} values are then compared with reference values to determine the Weighted Standardised Impact Sound Pressure Level ($L'_{nT,w}$) which is compared with the sound insulation performance requirements detailed in ADE.

At the time of the sound insulation tests the flats were complete, unoccupied, unfurnished and had been provided with carpets and soft floorings.

4.5 Test Procedure Deviations

The following deviations from the test procedures specified in BS EN ISO 140 parts 4:1998 and the guidance contained with ADE were noted.

With reference to the floor test between the bedroom of Plot 3 and Plot 7 living room/kitchen, the receiving room was larger than the source room. As such the guidance relating to the source and receiving room positions, contained within BS EN ISO 140 part 14 “Acoustics – Measurement of Sound Insulation in Buildings and of Building Elements; Guidelines for Special Situations in the Field”, was followed and the lower and smaller room was used as the source room in this room combinations.

With respect to the impact sound insulation test between Plot 7 living room/kitchen and Plot 3 bedroom, as the soft floor coverings had been stuck down the upper surface of the structural floor, the impact sound insulation test **in this area** was conducted through the soft floor covering. **With reference to the carpeted areas, the carpet was rolled back to permit the tapping machine to act directly on the deck below.**

Turning to the airborne sound test across the wall separating plots 2 and 3, an approximate 175 – 200mm step existed between the two plots with plot 3 being the higher of the two plots.

4.6 Sampling Frequency

As the development comprises eight new build flats, in accordance with the sampling regime detailed within Section 1 of ADE, tests to one separating wall and floor between the flats were conducted.

In addition, the results presented in this report relate to the sample of elements presented at the time of testing by the client.

4.7 Arrangement of the Tested Elements

The source and receiving rooms were as detailed below.

Airborne Sound Insulation Test - Walls

Source Room	Volume, m ³	Receiving Room	Volume, m ³
Plot 3, Living Room/Kitchen	60	Plot 2, Living Room/Kitchen	60
Plot 3, Bedroom 1	38	Plot 2, Bedroom 1	38

Airborne Sound Insulation Test - Floors

Source Room	Volume, m ³	Receiving Room	Volume, m ³
Plot 3, Living Room/Kitchen	60	Plot 7, Bedroom 1	34
Plot 3, Bedroom 1	38	Plot 7, Living Room/Kitchen	69

Impact Sound Insulation Test - Floors

Source Room	Volume, m ³	Receiving Room	Volume, m ³
Plot 7, Bedroom 1	34	Plot 3, Living Room/Kitchen	60
Plot 7, Living Room/Kitchen*	69	Plot 3, Bedroom 1*	38

*Tested on vinyl

4.8 Background Noise

The tabular presentation of both the D_{nT} and L'_{nT} values on the test certificates included in the Appendices may be accompanied by the presence of either a single asterisk '*' or a double asterisk '**' alongside each of the frequency values. The presence of the asterisks denote that the D_{nT} or L'_{nT} values have been 'background' noise corrected as per the requirements of Section 6.6 and 5.6 of BS EN ISO 140 parts 4 and 7:1998 respectively. The presence of a single asterisk indicates that the measured 'signal' level has been corrected according to equation 8 or 5, of BS EN ISO 140 parts 4 and

7:1998 respectively, whereas the presence of a double asterisk indicates that the 1.3dB correction has been applied.

At the time of the sound insulation tests the principal contributor to the background noise climate was noise from the live construction site.

4.9 Separating Wall Construction

The following information was provided by the client.

A twin independent timber frame construction comprising two 89mm timber studs, one of which had received a 9mm OSB sheathing board, with a cavity fully filled with mineral fibre. Both room faces of the timber studs had been lined with two layers of 15mm Fireline plasterboard.

This construction is similar to a type 4 wall construction as detailed in Section 2 of ADE.

4.10 Separating Floor Construction

The following information was provided by the client.

A new walking comprising an 18mm T & G deck supported on a cradle and batten system, was placed over an 18mm timber sub-deck fixed to the timber joists with mineral fibre placed within the inter-joist space. A new ceiling comprising of two layers of 15mm SoundBloc, fixed to the joists via resilient bars, with mineral fibre placed within the 300mm void, was provided below.

This construction is similar to a type 3 floor construction as detailed in Section 3 of ADE.

4.11 Flanking Wall Construction

The flanking walls comprised the inner plasterboard lining of the external timber frame wall.

5.0 Results

The results of the sound insulation tests are reproduced in the tables below and overleaf, graphical presentation of the results may be found within Appendices 2, 3 and 4.

Airborne Sound Insulation Test Results - Walls

Test N°	Source room	Receiving room	Measured performance $D_{nT,w} + C_{tr}$ dB	ADE Minimum performance $D_{nT,w} + C_{tr}$ dB	ADE, 'Pass' or 'Fail'
1.1	Plot 3, Living Room/Kitchen	Plot 2, Living Room/Kitchen	68	45	'Pass'
1.2	Plot 3, Bedroom 1	Plot 2, Bedroom 1	60	45	'Pass'

Airborne Sound Insulation Test Results – Floors

Test N°	Source room	Receiving room	Measured performance $D_{nT,w} + C_{tr}$ dB	ADE Minimum performance $D_{nT,w} + C_{tr}$ dB	ADE, 'Pass' or 'Fail'
2.1	Plot 3, Living Room/Kitchen	Plot 7, Bedroom 1	52	45	'Pass'
2.2	Plot 3, Bedroom 1	Plot 7, Living Room/Kitchen	50	45	'Pass'

Impact Sound Insulation Test Results - Floors

Test N°	Source room	Receiving room	Measured performance $L'_{nT,w}$ dB	ADE Maximum performance $L'_{nT,w}$ dB	ADE, 'Pass' or 'Fail'
3.1	Plot 7, Bedroom 1	Plot 3, Living Room/Kitchen	54	62	'Pass'
3.2	Plot 7, Living Room/Kitchen*	Plot 3, Bedroom 1*	53	62	'Pass'

*Tested on vinyl

6.0 Discussion

The results of the sound insulation tests have demonstrated that the airborne and impact sound insulation, as appropriate, of the tested walls and floors separating the flats within the Pilsworth Road development in Heywood, complied with the sound insulation performance requirements contained within ADE and so may be regarded as having 'passed' the tests.

Appendix 1: Photograph**Photograph 1:** Front Elevation of the site at Pilsworth Road, Heywood

Appendix 2: Airborne Sound Insulation Result Certificates – Walls

Calculation of the Standardised Level Difference According to ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Client: R&M Property
Test Location: Pilsworth Road, Heywood, Oldham
Transmission Direction: Horizontal via Wall

Date of Test: 24th September 2025

Description of test arrangement and direction of measurement :
 Plot 3, Living Room/Kitchen to Plot 2, Living Room/Kitchen

Wall Construction (notional)
 Type 4

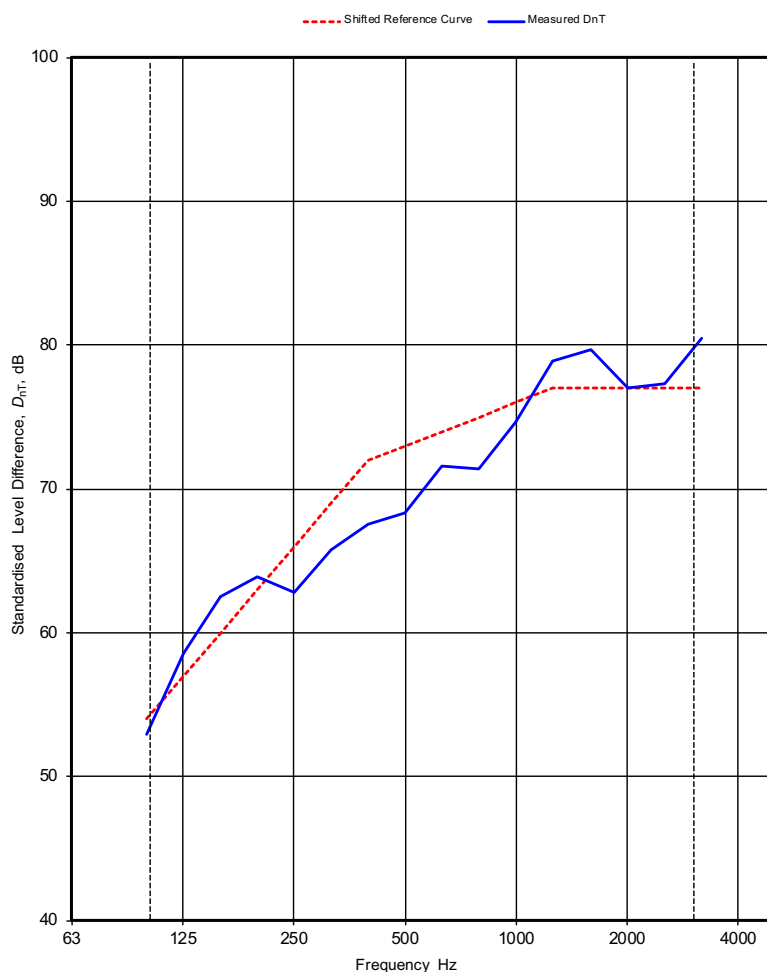
Source Room
Volume, m³: 60

Receiver Room
Volume, m³: 60

Frequency, Hz	D_{nT} dB
50	
63	
80	
100	52.9
125	58.6
160	62.5
200	63.9
250	62.8 *
315	65.8 *
400	67.6 *
500	68.3 *
630	71.6 **
800	71.4 **
1000	74.7 **
1250	78.9 **
1600	79.7 **
2000	77.0 **
2500	77.3 **
3150	80.5 **
4000	
5000	

* background adjusted measurement

** background corrected measurement



Rating According to ISO 717-1

$D_{nT,w} (C:C_{tr}) = 73 \quad (-1 \quad -5) \text{ dB}$

Overall Result,
 $D_{nT,w} + C_{tr}, \text{dB} =$
68

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N°: 0199.1.1

Test Institute: **Druk** Ltd, 87 St Albans Road
 Halifax HX3 0ND

Date of Certificate: 24.09.2025

Tester Name: M Pimlett

Calculation of the Standardised Level Difference According to ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Client: R&M Property
Test Location: Pilsworth Road, Heywood, Oldham
Transmission Direction: Horizontal via Wall

Date of Test: 24th September 2025

Description of test arrangement and direction of measurement :
 Plot 3, Bedroom 1 to Plot 2, Bedroom 1

Wall Construction (notional)
 Type 4

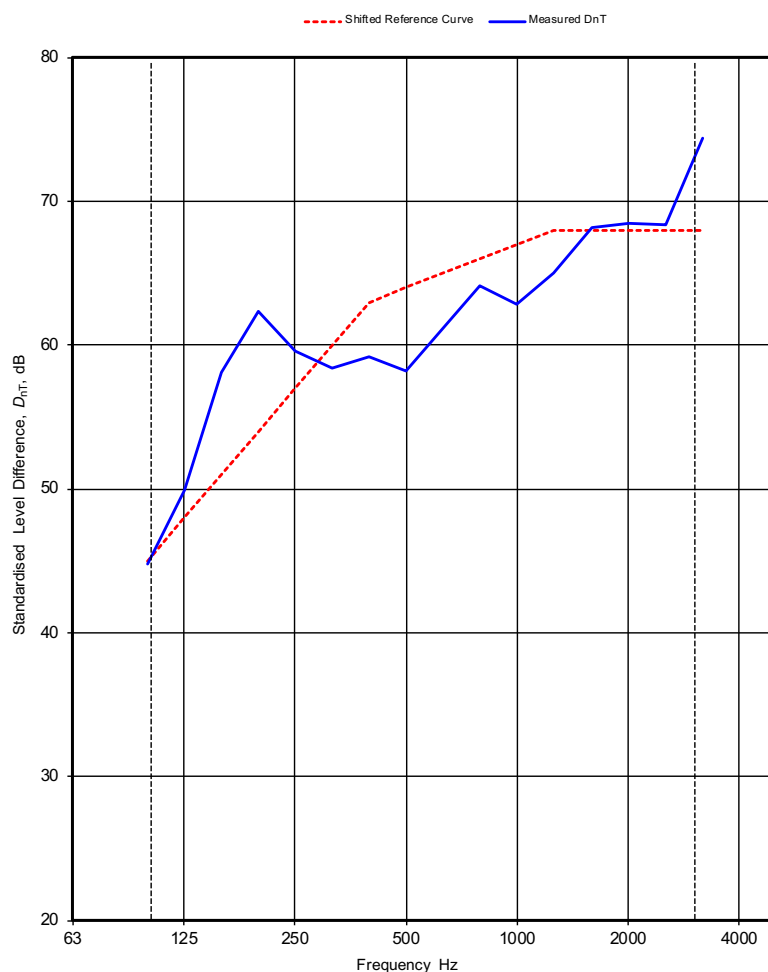
Source Room
Volume, m³: 38

Receiver Room
Volume, m³: 38

Frequency, Hz	D_{nT} dB
50	
63	
80	
100	44.8
125	49.9
160	58.1
200	62.4
250	59.6
315	58.4 *
400	59.2 *
500	58.2
630	61.2
800	64.1
1000	62.9
1250	65.0
1600	68.2
2000	68.5
2500	68.4 *
3150	74.4 *
4000	
5000	

* background adjusted measurement

** background corrected measurement



Rating According to ISO 717-1

$D_{nT,w} (C:C_{tr}) = 64 \quad (-1 \quad -4) \text{ dB}$

Overall Result,
 $D_{nT,w} + C_{tr}, \text{dB} =$
60

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N°: 0199.1.2

Test Institute: **Druk** Ltd, 87 St Albans Road
 Halifax HX3 0ND

Date of Certificate: 24.09.2025

Tester Name: M Pimlett

Appendix 3: Airborne Sound Insulation Result Certificates – Floors

Calculation of the Standardised Level Difference According to ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Client:R&M Property

Test Location:Pilsworth Road, Heywood, Oldham

Transmission Direction:Vertical via Floor

Date of Test:24th September 2025

Description of test arrangement and direction of measurement :
Plot 3, Living Room/Kitchen to Plot 7, Bedroom 1

Floor Construction (notional)
Type 3

Source Room

Volume, m³:60

Receiver Room

Volume, m³:34

Frequency, Hz	D _{nT} dB
50	
63	
80	
100	34.1
125	37.8
160	43.8
200	47.5
250	52.8
315	56.2
400	61.9
500	67.0
630	71.6*
800	73.5*
1000	77.3*
1250	79.0*
1600	79.3**
2000	77.1**
2500	78.2**
3150	81.6**
4000	
5000	

* background adjusted measurement

** background corrected measurement

Standardised Level Difference, D_{nT}, dB

Frequency Hz

Shifted Reference Curve

Measured DnT

Rating According to ISO 717-1

D_{nT,w} (C:C_{tr}) = 62 (-4 -10) dB

Overall Result, D_{nT,w} + C_{tr}, dB = 52

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N^o:0199.2.1

Test Institute: **Druk** Ltd, 87 St Albans Road
Halifax HX3 0ND

Date of Certificate:24.09.2025

Tester Name: M Pimlett

DRUK Limited, 87 St Albans Road, Halifax, HX3 0ND

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Calculation of the Standardised Level Difference According to ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Client: R&M Property
Test Location: Pilsworth Road, Heywood, Oldham
Transmission Direction: Vertical via Floor

Date of Test: 24th September 2025

Description of test arrangement and direction of measurement :
 Plot 3, Bedroom 1 to Plot 7, Living Room/Kitchen

Floor Construction (notional)

Type 3

Source Room

Volume, m³: 38

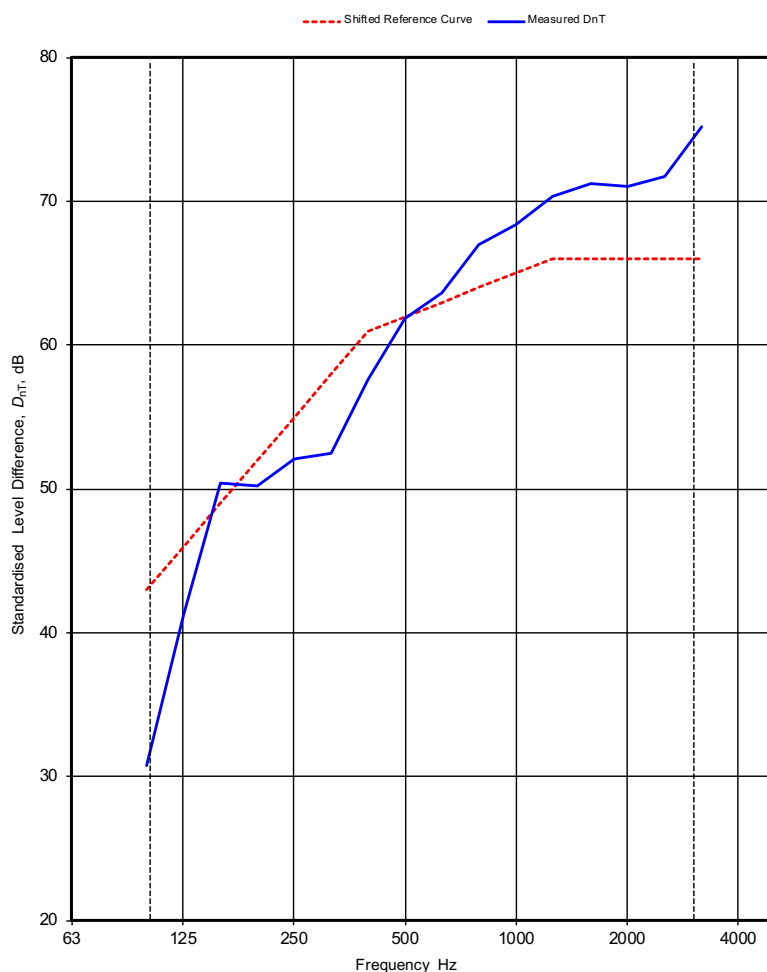
Receiver Room

Volume, m³: 69

Frequency, Hz	D_{nT} dB
50	
63	
80	
100	30.8
125	41.2
160	50.4
200	50.2
250	52.1
315	52.5
400	57.6
500	61.9
630	63.6
800	67.0
1000	68.4
1250	70.4
1600	71.2
2000	71.0
2500	71.7
3150	75.2
4000	
5000	

* background adjusted measurement

** background corrected measurement



Rating According to ISO 717-1

$D_{nT,w} (C:C_{tr}) = 62 \quad (-4 \quad -12) \text{ dB}$

Overall Result,
 $D_{nT,w} + C_{tr}, \text{dB} =$
50

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N^o: 0199.2.2

Test Institute: **Druk** Ltd, 87 St Albans Road
 Halifax HX3 0ND

Date of Certificate: 24.09.2025

Tester Name: M Pimlett

Appendix 4: Impact Sound Insulation Result Certificates – Floors

Calculation of the Standardised Impact Sound Pressure Level to ISO 140-7

Field Measurements of Impact sound insulation of floors

Client: R&M Property
Test Location: Pilsworth Road, Heywood, Oldham
Transmission Direction: Vertical via Floor

Date of Test: 24th September 2025

Description of test arrangement and direction of measurement :
 Plot 7, Bedroom 1 to Plot 3, Living Room/Kitchen

Floor Construction (notional)
 Type 3

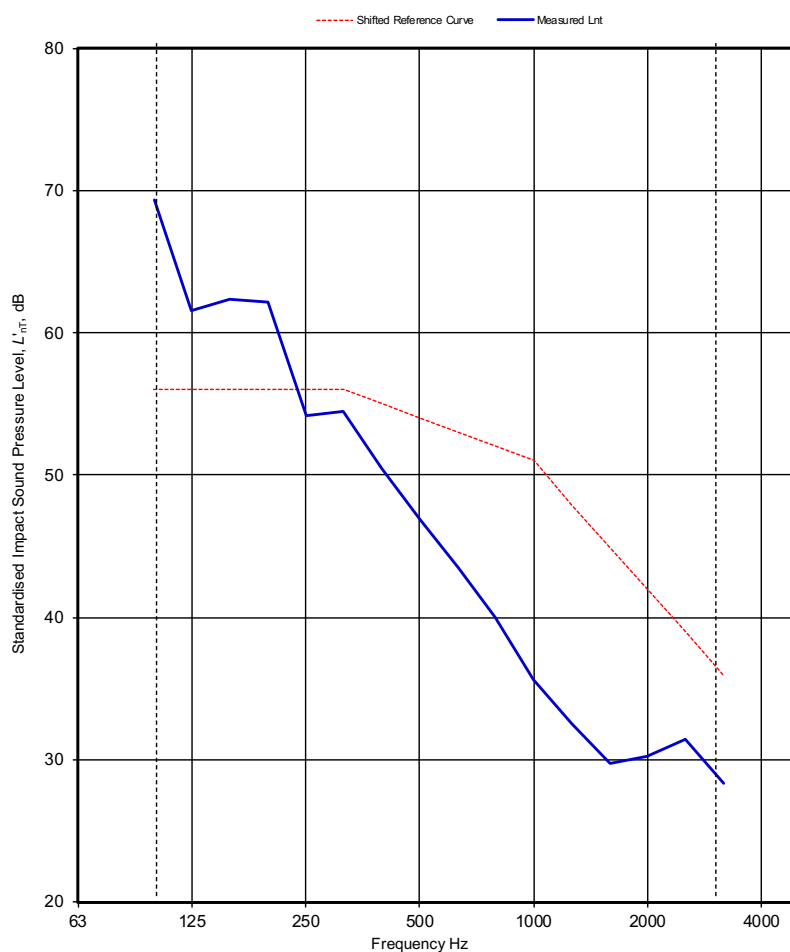
Source Room
Volume, m³: 34

Receiver Room
Volume, m³: 60

Frequency, Hz	L'_{nT} dB
50	
63	
80	
100	69.4
125	61.6
160	62.4
200	62.2
250	54.2
315	54.5
400	50.5
500	46.9
630	43.5
800	40.0
1000	35.6
1250	32.5
1600	29.7
2000	30.2
2500	31.4
3150	28.3
4000	
5000	

* background adjusted measurement

** background corrected measurement



Rating According to ISO 717-2

$L'_{nT,w} =$ **54**

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N°: 0199.3.1

Test Institute: **Druk** Ltd, 87 St Albans Road
 Halifax HX3 0ND

Date of Certificate: 24.09.2025

Tester Name: M Pimlett

Calculation of the Standardised Impact Sound Pressure Level to ISO 140-7

Field Measurements of Impact sound insulation of floors

Client: R&M Property
Test Location: Pilsworth Road, Heywood, Oldham
Transmission Direction: Vertical via Floor

Date of Test: 24th September 2025

Description of test arrangement and direction of measurement :
 Plot 7, Living Room/Kitchen to Plot 3, Bedroom 1

Floor Construction (notional)
 Type 3

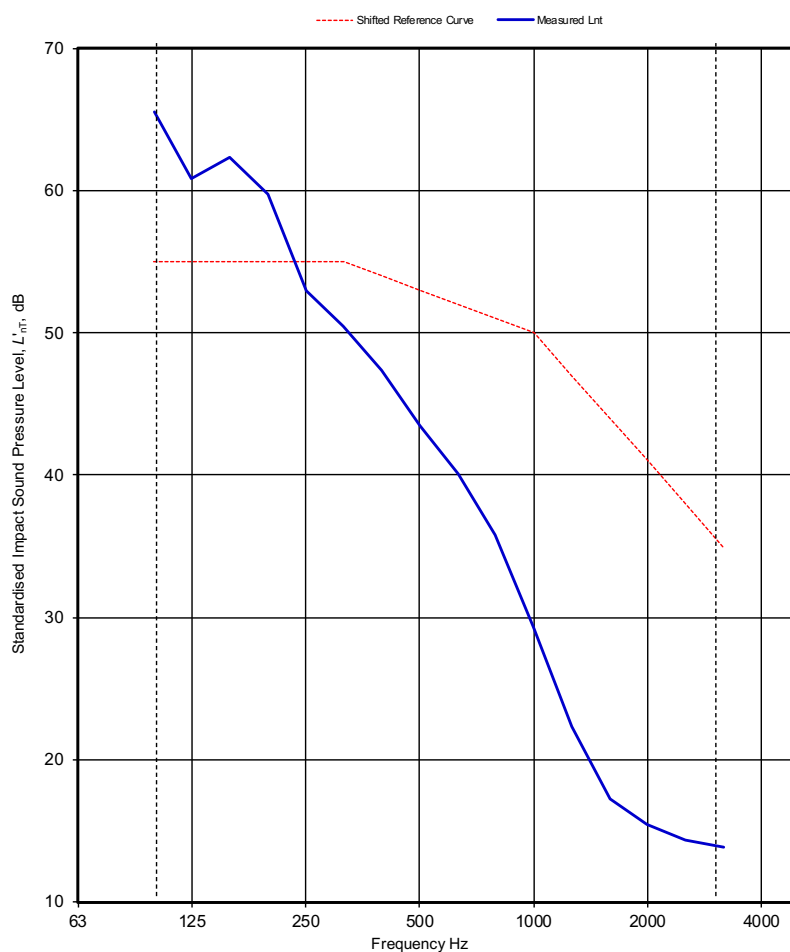
Source Room
Volume, m³: 69

Receiver Room
Volume, m³: 38

Frequency, Hz	L'_{nT} dB
50	
63	
80	
100	65.5
125	60.9
160	62.3
200	59.8
250	53.0
315	50.5
400	47.4
500	43.5
630	40.1
800	35.8
1000	29.3
1250	22.3
1600	17.2
2000	15.5
2500	14.4
3150	13.9
4000	
5000	

* background adjusted measurement

** background corrected measurement



Rating According to ISO 717-2

$L'_{nT,w} =$ **53**

Evaluation based on field measurement results obtained by an engineering method

Test Certificate N°: 0199.3.2

Test Institute: **Druk** Ltd, 87 St Albans Road
 Halifax HX3 0ND

Date of Certificate: 24.09.2025

Tester Name: M Pimlett