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# PLOTS 19-24 AT PARKMOUNT ROAD, MANCHESTER M9 4AJ
# SOUND INSULATION TESTING

**ANC REGISTERED TASK NO: 160151. PASSWORD: PVPP2Q**

| | |
|---|---|
| On behalf of: | **John Southworth** |
| Report no: | **P25-132-R01v1** |
| Date: | **30 July 2025** |

# PLOTS 19-24 AT PARKMOUNT ROAD, MANCHESTER M9 4AJ
# SOUND INSULATION TESTING

## ANC REGISTERED TASK NO: 160151. PASSWORD: PVPP2Q

| Report number | Prepared by | Prepared for |
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| Version | Date | Author | Checked by | Notes |
|---|---|---|---|---|
| 1 | 30.07.25 | D Thurstan BSc MIOA<br>Principal Consultant | G Bowland BSc MIOA<br>Technical Director | Initial issue |
| | | | | |

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# 1. SITE & TESTING DETAILS

1.1 Hepworth Acoustics Limited is registered under the Association of Noise Consultants' Registration Scheme to carry out pre-completion sound insulation testing (ANC Registered Organisation No. 116). The testing was carried out by David Thurstan who is an approved tester (No. 116/15).

1.2 This report is an ANC Registered Report with the unique registration number 160151.

## Site Details

1.3 The details of the development at which the sound insulation testing was carried out are as follows:

| | |
|---|---|
| Site address: | Parkmount Road, Manchester M9 4AJ |
| Development type: | Purpose built flats |
| No. of dwellings: | 6 |

## Testing Details

1.4 The test details are as follows:

| | |
|---|---|
| Test date(s): | 28 July 2025 |
| No. separating walls tested: | 0: None present |
| No. of separating floors tested: | 2 |
| Step or stagger between test rooms: | None |
| Cupboards, wardrobes etc: | All open during testing |
| Background noise due to: | Distant road traffic |
| Furnishing: | All test rooms unfurnished |
| Floor coverings: | No final floor coverings in place |

1.5 The building is not considered as an 'historic building' as defined in Approved Document E (2003 edition incorporating 2004, 2010, 2014 and 2015 amendments) of the Building Regulations. Therefore, the existing building construction does not limit the sound insulation treatment at the development.

1.6 Details of the constructions, test rooms and room volumes are given on the charts in Appendix D.

1.7 We understand that the party floors tested are built of the following constructions:

- 28mm Cellecta T&G Screedboard 28 acoustic flooring over 18mm OSB-3 flooring laid 253mm metal web Posi-joist with 100mm mineral wool insulation in between the joists. Ceiling formed of 2 x 15mm gypsum based board fitted to 30mm metal resilient bars at 400mm centres, perpendicular to floor joist.

1.8 The construction details are based on information provided by the client.

1.9 The tests detailed in this report have been carried out in full accordance with ISO 140-4 and ISO 140-7. All the relevant procedures described in Annex B of Approved Document E of the Building Regulations have been followed, except were stated otherwise in Section 2.

1.10 Measurements were made using the static/fixed microphone method following the advice provided in the ANC "Testers' Manual for sound insulation testing in dwellings 2025", version 2.1, with guidance from sections 'Airborne test procedure 1' and 'Impact test procedure 5'.

1.11 The background noise level was due to distant road traffic noise, and any extraneous noise was excluded during the measurements.

1.12 A glossary of the technical terms used in this report is provided in Appendix A. A full description of the testing methods can be found in Appendix B.

## Equipment

1.13 Details of the equipment used during the sound insulation tests are shown in Table 1. Current calibration for the equipment can be provided upon request.

**Table 1: Details of equipment used during sound insulation tests**

| Equipment description | Manufacturer | Type number | Serial number | Date of last calibration | Calibration certificate number |
|---|---|---|---|---|---|
| Sound level meter | Brüel & Kjær | Type 2250 | 3011706 | 14/08/2024 | Cert of Conformance |
| Pre-amp | Brüel & Kjær | ZC0032 | 25849 | | |
| Microphone | Brüel & Kjær | Type 4189 | 3099654 | | |
| Calibrator | Brüel & Kjær | Type 4231 | 2385250 | 25/04/2025 | TCRT25/1342 |
| Tapping machine | Brüel & Kjær | Type 3207 | 2559456 | 27/03/2025 | TCRT25-1271 |
| Amplified loudspeaker | JBL | EON710 | 15067911873 | N/A | N/A |
| Pink noise source | TMSOFT | Noise Generator (Android) | N/A | N/A | N/A |

# 2. ASSESSMENT OF MEASURED SOUND INSULATION PERFORMANCE

## Deviations from Testing Methodology of Annex B of Approved Document E

2.1 The sound insulation testing detailed in this report have been carried out in full accordance with the testing methodology of Annex B of Approved Document E of the Building Regulations.

## Sound Insulation Test Results

2.2 The results of the sounds insulation tests are details in Appendix D and are summarised in Table 2.

**Table 2: Sound insulation test results**

| ANC registered test no. | Source room | Receiver room | Test type & required sound insulation | Measured sound insulation | Pass/fail |
|---|---|---|---|---|---|
| 1161601511[1] | Plot 22 Kitchen/Dining (43m$^3$) | Plot 21 Bedroom (18m$^3$) | Airborne – Floor 45 dB $D_{nT,w} + C_{tr}$ (minimum) | 52 dB $D_{nT,w} + C_{tr}$ | Pass |
| 1161601512[1] | Plot 22 Kitchen/Dining (43m$^3$) | Plot 21 Bedroom (18m$^3$) | Impact – Floor 62 dB $L'_{nT,w}$ (maximum) | 52 dB $L'_{nT,w}$ | Pass |
| 1161601513[1] | Plot 20 Kitchen/Dining (43m$^3$) | Plot 19 Bedroom (18m$^3$) | Airborne – Floor 45 dB $D_{nT,w} + C_{tr}$ (minimum) | 52 dB $D_{nT,w} + C_{tr}$ | Pass |
| 1161601514[1,2] | Plot 20 Kitchen/Dining (43m$^3$) | Plot 19 Bedroom (18m$^3$) | Impact – Floor 62 dB $L'_{nT,w}$ (maximum) | 54 dB $L'_{nT,w}$ | Pass |

1. Receiver room smaller than the recommended volume of 25m$^3$ in Approved Document of the Building regulations
2. Receiver room measurements are influenced by the background noise level (the limit of measurement)

2.3 The airborne and/or impact sound insulation tests were carried out using source and receiver rooms with volumes less than the recommended minimum of 25m$^3$, as these were some of the only rooms suitable for testing.

## Conclusion

2.4 The results in Table 2 show that the tested party floors meet the minimum requirements for sound insulation as specified in Approved Document E (2003 edition incorporating 2004, 2010, 2014 and 2015 amendments) of the Building Regulations for purpose built flats.

2.5 The results of all tests have been registered for certification under the Association of Noise Consultants Registration Scheme and can be viewed online following the instructions provided in Appendix C, using the task number and password PVPP2Q.

## APPENDIX A: GLOSSARY OF TERMS

$L_{eq,T}$ **Equivalent Continuous Sound Level:** An average of the total sound pressure measured over a specified time period ($T$). In other words, $L_{eq,T}$ is the level of a steady sound which has the same total sound pressure as the real fluctuating noise, measured over the same time period.

$T$ **Reverberation time:** The measured reverberation time in a receiver room in seconds.

$T_0$ **Reference reverberation time:** A reverberation time of 0.5s

**Airborne Sound Insulation Testing**

$D$ **Level Difference:** A field measurement of the airborne sound level difference between adjacent spaces, including in-situ sound transfer via flanking transmission paths in addition to the direct sound transmission through the separating partition (e.g. a wall/floor). The Level Difference metric ($D$) is given for a stated frequency band.

$D_{nT}$ **Standardised Level Difference**: Standardised to a receiver room reverberation time of 0.5 seconds, $D_{nT} = D + 10 \log (T/T_0)$

$D_{nT,w}$ **Weighted Standardised Level Difference:** A frequency weighted single figure value of the standardised level difference ($D_{nT}$).

$C_{tr}$ **Spectral Adaptation Term:** This is used to correct the $D_{nT,w}$ in order top reflect low frequency sound insulation performance of the wall or floor tested.

**Impact Sound Insulation Testing**

$L$ **Impact Sound Pressure Level:** Effectively L = receiver level corrected background level.

$L'_{nT}$ **Standardised Impact Sound Pressure Level:** Standardised to a receiver room reverberation time of 0.5 seconds, $L'_{nT} = L + 10 \log (T/T_0)$

$L'_{nT,w}$ **Weighted Standardised Impact Sound Pressure Level:** A single figure generated by comparing the $L'_{nT}$ with a reference curve. The reference curve is shifted in 1dB steps until the sum of adverse deviation of the test curve, compared to the reference curve, is as large as possible, but no more than 32.0 dB. The value of the shifted reference curve at 500Hz is taken as the $L'_{nT,w}$. N.B. As $L'_{nT,w}$ for impact transmission represents an absolute level, an improvement generates a smaller figure.

# APPENDIX B: TESTING METHODOLOGY

Testing was carried out in accordance with the relevant sections of the methodology detailed below.

## Airborne Sound Insulation Tests

Airborne sound insulation measurements involve generating a high noise level on one side of the test sample (source room) and then measuring the difference in noise levels between the source and receiver rooms. The testing was carried out in full accordance with the requirements of the BS EN ISO 140-4:1998: "Field Measurements of Airborne Sound Insulation between Rooms". All the relevant procedures described in Annex B of Approved Document E of the Building Regulations have been followed, except if/where noted in Section 2 of this report.

Any airborne tests were carried out using a Brüel & Kjær 2250 Class 1 Sound Level Meter loaded with Building Acoustics Software, Room Acoustics Software and Reverberation Time Software. A calibration check was carried out before and after the noise measurements and there was no variation in the calibration level. A calibration check was carried out before and after the noise measurements and there was no variation in the calibration level.

Pink noise was produced at high volume in the source room and the resultant diffuse sound field was measured at five locations in the source room and the transmitted sound was measured at five locations in the receiver room. The source was then moved to a new position and a further five source room and receiver room measurements were taken. Therefore, a total number of ten source room and ten receiver room measurements were collected. Measurements were taken for a minimum of six seconds at each position in the source and receiver rooms, a total averaging time of 30 seconds for each loudspeaker position. Testing was carried out with all source room and receiver room doors and windows closed.

Background $L_{eq,T}$ noise levels were recorded in the receiver room without the sound source operating. A total of five background measurements were made at five positions for six seconds each, a total averaging time of 30 seconds. Where applicable, corrections for background noise have been made in accordance with BS EN ISO 140-4, Para 6.6.

Receiver room reverberation time (RT) calculations were made using the interrupted noise method. The built-in pink noise generator and RT calculation algorithms within the B&K 2250 sound level meter were used, set to 4 seconds. A total of six RT measurements were made comprising three measurements at two different loudspeaker positions, in line with the engineering method as described in ISO 3382 Part 2:2008 "Acoustics – Measurement of room acoustic parameters – Reverberation time in ordinary rooms". The results of the measurements in each room were averaged to establish the RT of the room.

All of the above measurements were made over sixteen third-octave bands 100 Hz to 3150 Hz inclusive.

## Impact Sound Insulation Tests

Impact sound insulation measurements involve running a specialised tapping machine on a floor in the source room and measuring the resultant noise level in the receiving room below. The testing of party floors was carried out in full accordance with the requirements of the BS EN ISO 140-7:1998: "Field Measurements of Impact Sound Insulation of Floors". All the relevant procedures described in Annex B of Approved Document E of the Building Regulations have been followed, except if/where noted in Section 2 of this report.

Any impact tests were carried out using a Brüel & Kjær 2250 Class 1 Sound Level Meter loaded with Building Acoustics Software, Room Acoustics Software and Reverberation Time Software. A calibration check was carried out before and after the noise measurements and there was no variation in the calibration level.

A Brüel & Kjær Type 3207 tapping machine was used as the source for the impact testing. For the tests, the tapping machine was placed in four positions in the source room. Measurements of the impact sound pressure level generated by the tapping machine were measured at a total of eight microphone positions in the receiver room, a total averaging time of 48 seconds. Measurements were taken for a minimum of six seconds at each position in the source room. Testing was carried out with all source room and receiver room doors and windows closed.

Background $L_{eq,T}$ noise levels were recorded in the receiver room without the sound source operating. A total of five background measurements were made at five positions for six seconds each. Where applicable, corrections for background noise have been made in accordance with BS EN ISO 140-7, Para 5.6.

Receiver room reverberation time (RT) calculations were made using the interrupted noise method. The built-in pink noise generator and RT calculation algorithms within the B&K 2250 sound level meter were used, set to 4 seconds. A total of six RT measurements were made comprising three measurements at two different loudspeaker positions, in line with the engineering method as described in ISO 3382 Part 2:2008 "Acoustics – Measurement of room acoustic parameters – Reverberation time in ordinary rooms". The results of the measurements in each room were averaged to establish the RT of the room.

All of the above measurements were made over sixteen third-octave bands 100 Hz to 3150 Hz inclusive.

## Sound Insulation Test Results Calculation and Rating

The results of any airborne sound insulation tests have been standardised and rated in accordance with the requirements of EN ISO 717 Part 1: 1997 "Rating of sound insulation in buildings and of building elements - Field measurement of airborne sound insulation between rooms".

Where the difference between the signal level and the background noise level in the receiver room is less than or equal to 6 dB the measurement is considered to be unreliable and is deemed the limit of measurement. Therefore, in such cases, the signal level is estimated by applying a fixed correction of -1.3 dB. Values which are the limit of measurement are identified on the appropriate test chart (with either the symbol "≥" on an airborne test or symbol "≤" on an impact test).

The results of any impact sound insulation tests have been standardised and rated in accordance with the requirements of EN ISO 717 Part 2: 1997 "Rating of sound insulation in buildings and of building elements - Field measurement of impact sound insulation of floors".

The single number indices for $D_{nT,w}$, and $C_{tr}$, and $L'_{nT,w}$ have been calculated using in-house spreadsheets to ensure that the level differences obtained from each source position have been arithmetically averaged as required in Annex B, Paragraph B2.6 of Approved Document E.

## APPENDIX C: ONLINE VERIFICATION OF RESULTS

# 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: **160151** Task Password: **PVPP2Q**

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.

## APPENDIX D: SOUND INSULATION TEST CHARTS

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

Client: John Southworth Date of test: 28/07/2025

| | |
|---|---|
| Source Room: | Kitchen/Dining , 22 |
| Receiver Room: | Bedroom , 21 |

28mm Cellecta T&G Screedboard 28 acoustic flooring over 18mm OSB-3 flooring laid 253mm metal web Posi-joist with 100mm mineral wool insulation in between the joists. Ceiling formed of 2 x 15mm gypsum based board fitted to 30mm metal resilient bars at 400mm centres, perpendicular to floor joist.

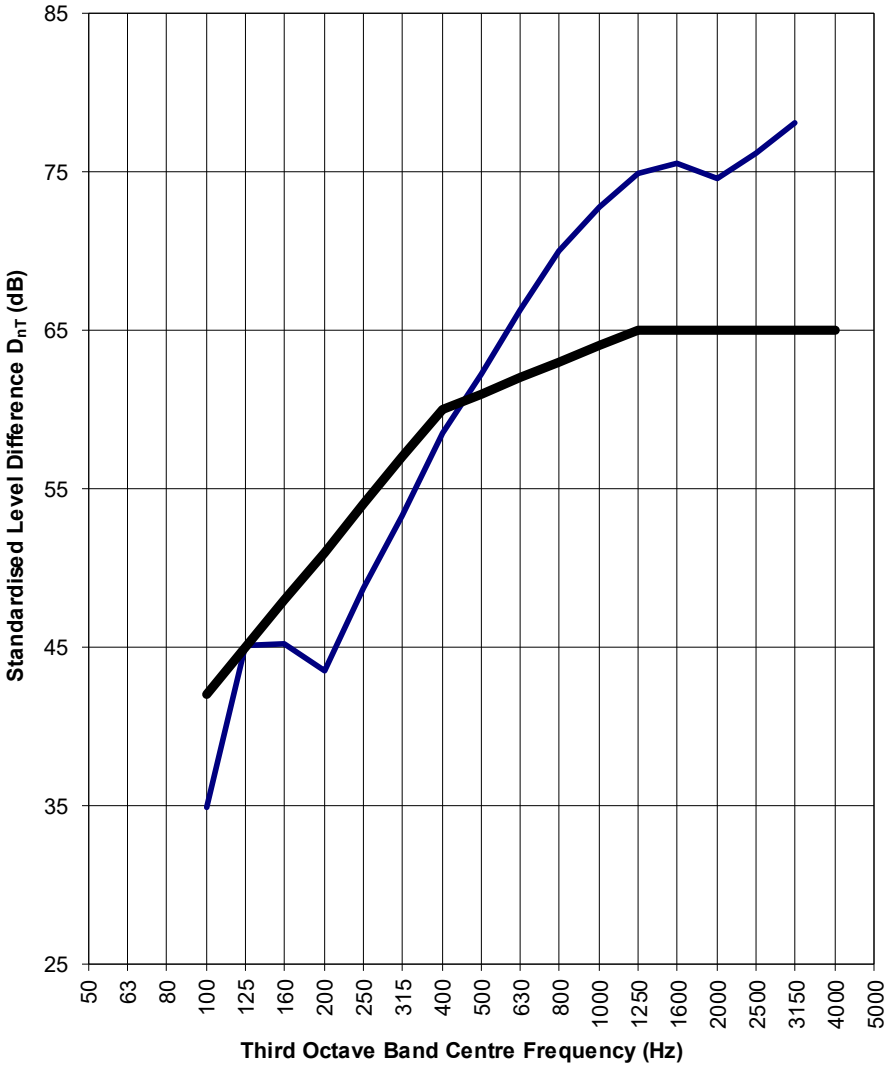
ANC Ref: 1161601511 HAL Ref: P25-132

Source room volume: 43 $m^3$
Receiver room volume: 18 $m^3$

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| Frequency f Hz | $D_{nT}$ (1/3-octave) dB |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 34.9 |
| 125 | 45.1 |
| 160 | 45.2 |
| 200 | 43.5 |
| 250 | 48.7 |
| 315 | 53.3 |
| 400 | 58.5 |
| 500 | 62.2 |
| 630 | 66.3 |
| 800 | 70.0 |
| 1000 | 72.8 |
| 1250 | 74.9 |
| 1600 | 75.5 |
| 2000 | 74.6 |
| 2500 | 76.2 |
| 3150 | 78.1 |
| 4000 | |
| 5000 | |

≥ Indicates limit of measurement;




Rating according to ISO 717-1

| | | | |
|---|---|---|---|
| $Dn_{T,w}$ ( $C;C_{tr}$ ) = | 61 | ( -2 ; -9 ) dB | D Thurstan |

Evaluation based on field measurement results obtained by an engineering method

# Standardised impact sound pressure level according to ISO 140-7
# Field measurements of impact sound insulation of floors

Client: John Southworth Date of test: 28/07/2025

Source Room: Kitchen/Dining , 22
Receiver Room: Bedroom , 21
28mm Cellecta T&G Screedboard 28 acoustic flooring over 18mm OSB-3 flooring laid 253mm metal web Posi-joist with 100mm mineral wool insulation in between the joists. Ceiling formed of 2 x 15mm gypsum based board fitted to 30mm metal resilient bars at 400mm centres, perpendicular to floor joist.

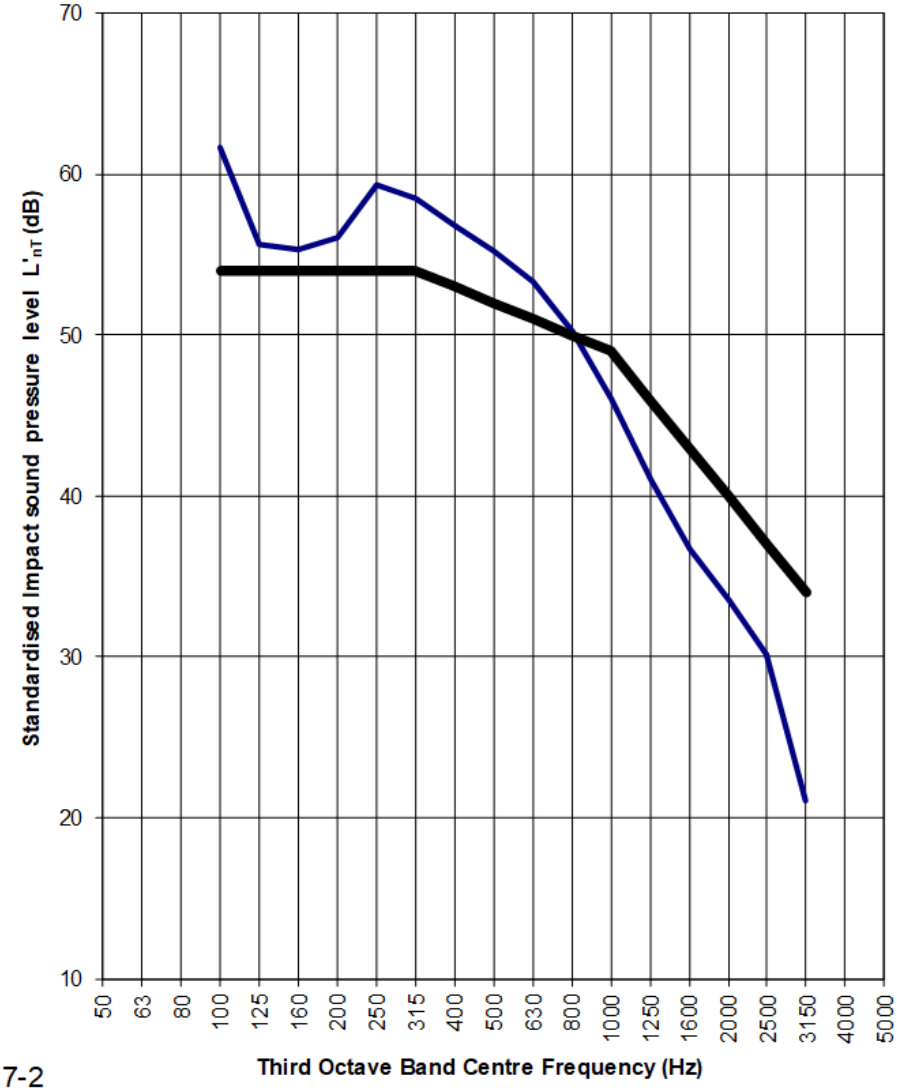
ANC Ref: 1161601512 HAL Ref: P25-132

Source room volume: 43 $m^3$
Receiver room volume: 18 $m^3$

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| Frequency f Hz | $D_{nT}$ (1/3-octave) dB |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 61.6 |
| 125 | 55.6 |
| 160 | 55.3 |
| 200 | 56.0 |
| 250 | 59.3 |
| 315 | 58.5 |
| 400 | 56.8 |
| 500 | 55.2 |
| 630 | 53.3 |
| 800 | 50.2 |
| 1000 | 46.0 |
| 1250 | 41.0 |
| 1600 | 36.7 |
| 2000 | 33.5 |
| 2500 | 30.2 |
| 3150 | 21.1 |
| 4000 | |
| 5000 | |

≤ Indicates limit of measurement;




Rating according to ISO 717-2

$L_{'nTw}$ = 52 dB

D Thurstan

Evaluation based on field measurement results obtained by an engineering method

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

Client: John Southworth Date of test: 28/07/2025

Source Room: Kitchen/Dining, 20
Receiver Room: Bedroom, 19
28mm Cellecta T&G Screedboard 28 acoustic flooring over 18mm OSB-3 flooring laid 253mm metal web Posi-joist with 100mm mineral wool insulation in between the joists. Ceiling formed of 2 x 15mm gypsum based board fitted to 30mm metal resilient bars at 400mm centres, perpendicular to floor joist.

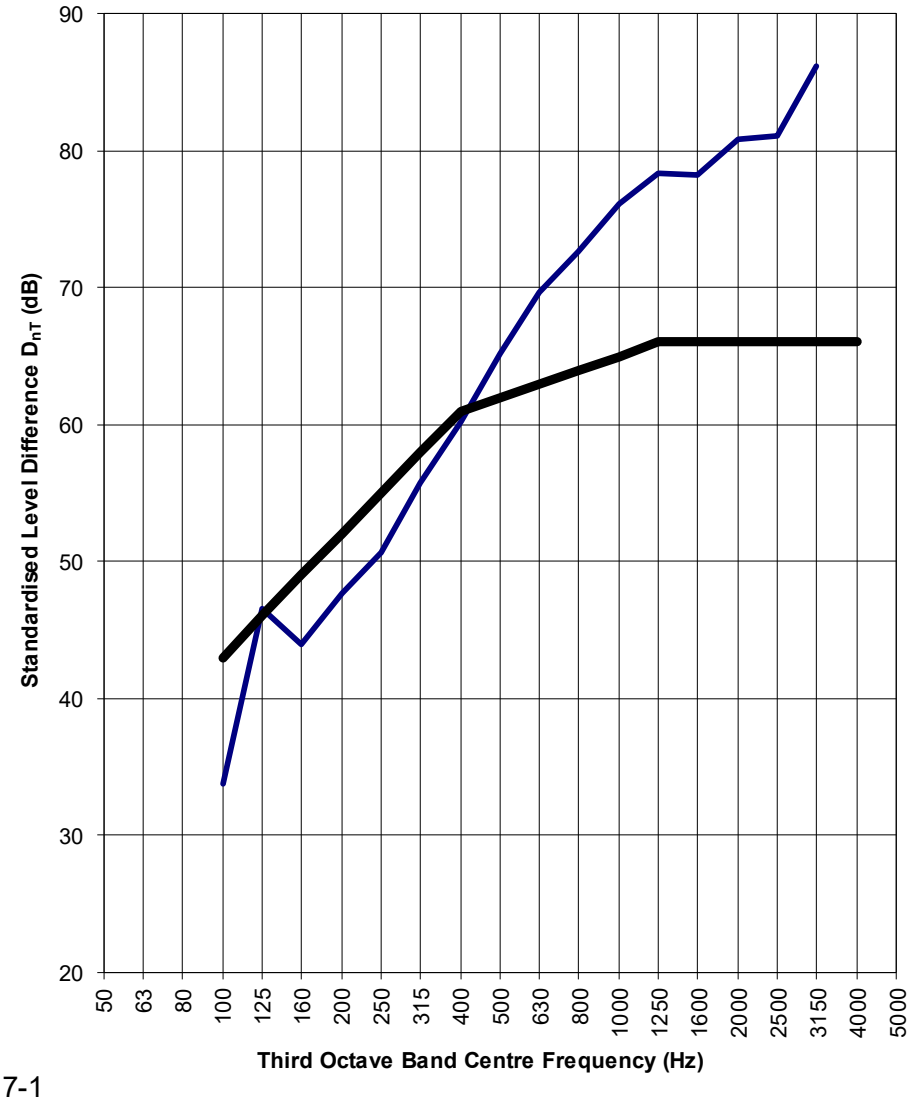
ANC Ref: 1161601513 HAL Ref: P25-132

Source room volume: $m^3$
Receiver room volume: $m^3$

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| Frequency f Hz | $D_{nT}$ (1/3-octave) dB |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 33.8 |
| 125 | 46.5 |
| 160 | 44.0 |
| 200 | 47.7 |
| 250 | 50.6 |
| 315 | 55.8 |
| 400 | 60.2 |
| 500 | 65.2 |
| 630 | 69.6 |
| 800 | 72.6 |
| 1000 | 76.1 |
| 1250 | 78.4 |
| 1600 | 78.2 |
| 2000 | 80.8 |
| 2500 | 81.1 |
| 3150 | ≥ 86.2 |
| 4000 | |
| 5000 | |

≥ Indicates limit of measurement;




Rating according to ISO 717-1

| $Dn_{T,w}$ ( $C;C_{tr}$ ) = | 62 | ( -3 ; -10 ) dB |
|---|---|---|

D Thurstan

Evaluation based on field measurement results obtained by an engineering method

# Standardised impact sound pressure level according to ISO 140-7
# Field measurements of impact sound insulation of floors

Client: John Southworth Date of test: 28/07/2025

Source Room: Kitchen/Dining, 20
Receiver Room: Bedroom, 19
28mm Cellecta T&G Screedboard 28 acoustic flooring over 18mm OSB-3 flooring laid 253mm metal web Posi-joist with 100mm mineral wool insulation in between the joists. Ceiling formed of 2 x 15mm gypsum based board fitted to 30mm metal resilient bars at 400mm centres, perpendicular to floor joist.

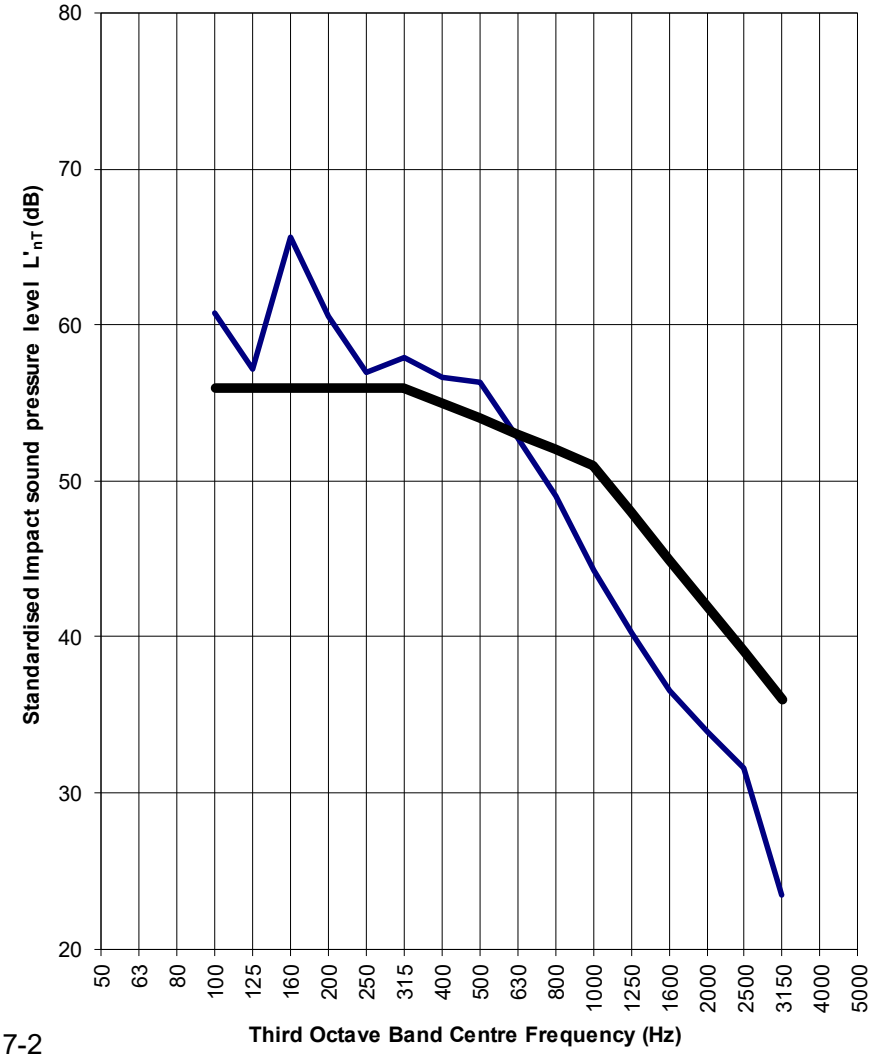
ANC Ref: 1161601514 HAL Ref: P25-132

Source room volume: $m^3$
Receiver room volume: $m^3$

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| Frequency f Hz | $D_{nT}$ (1/3-octave) dB |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 60.8 |
| 125 | 57.2 |
| 160 | 65.6 |
| 200 | 60.6 |
| 250 | 57.0 |
| 315 | 57.9 |
| 400 | 56.6 |
| 500 | 56.3 |
| 630 | 52.7 |
| 800 | 49.0 |
| 1000 | 44.3 |
| 1250 | 40.3 |
| 1600 | 36.6 |
| 2000 | 33.9 |
| 2500 | 31.6 |
| 3150 | 23.4 |
| 4000 | |
| 5000 | |

≤ Indicates limit of measurement;




Rating according to ISO 717-2

$L'_{nTw}$ = 54 dB D Thurstan

Evaluation based on field measurement results obtained by an engineering method