PEAK acoustics
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# Sound Insulation Test Report

Measurements to British standard BS EN ISO 140-4 & 7 (1998) and BS EN ISO 717-1 & 2 (1997), following the test procedures in Annex B of Approved Document E of The Building Regulations at:

**82 Manor Road**
**Lancing**
**West Sussex**
**BN15 0HD**

Kyle Donald
Approved Test Technician - Peak Acoustics Ltd

Note: This report should not be reproduced except in full, without written approval of the laboratory

Ref: 180717AST

ADUR & WORTHING PLANNING SERVICES
PLAN AWDM/0724/17
DATE VALID 25 JAN 2018

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**Property Type: Change of use - Flats**

| Test | Source Room | Receiving Room | Measured DnTw + Ctr (dB) | Required Level DnTw + Ctr (dB) | Measured L'nT,w (dB) | Required Level L'nT,w (dB) | Pass/Fail | Improvement on Building Regulations (dB) | Test Type |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Commercial - Front Room | Flat 82A - Living Room | 53 | 43 | | | pass | 10 | ABF |
| 2 | Commercial - Back Room | Flat 82A - Kitchen | 51 | 43 | | | pass | 8 | ABF |

ABW - Airborne Wall
ABF - Airborne Floor
IMP - Impact

Ref: 180717AST

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**Testing commissioned by:**
Analia Kakias
4 Marine Court
Beach Green
BN43 5LQ

**Test Date:**
03/01/2018

**Details of non-conformance:**
Tested rooms were furnished
Tested rooms were carpeted

**Equipment: Kit 2**

Svantek 977 Class 1 SLM Serial No. 36815
Svantek SV12L Preamplifier Serial No. 42561
Aco Pacific type 7052E microphone Serial No. 59964
Lookline EM50 Tapping Machine Serial No. TM.14035
2 x Behringer Eurolive B208D Active Monitors
Svantek SV 33 Acoustic Calibrator

Ref: 180717457

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

Client: Analia Kakias
Date of test: 03/01/2018
Certificate: Airborne 1

Project: 1807174ST

Source: Commercial - Front Room
Receiver: Flat 82A - Living Room

Source room volume (m^3): 91.26
Receiver room volume (m^3): 42

| Frequency (Hz) | DnT 1/3 octave (dB) |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 42.6 |
| 125 | 48.4 |
| 160 | 47.1 |
| 200 | 49.1 |
| 250 | 48.9 |
| 315 | 49.6 |
| 400 | 50.8 |
| 500 | 52.2 |
| 630 | 52.7 |
| 800 | 54.1 |
| 1000 | 55.0 |
| 1250 | 56.7 |
| 1600 | 56.9 |
| 2000 | 57.4 |
| 2500 | 61.1 |
| 3150 | 65.1 |
| 4000 | |
| 5000 | |




Rating according to ISO 717-1

**DnT,w (C; Ctr) = 56 (-1; -3) dB**

Evaluation based on field measurement
results obtained by an engineering method

b: background corrected, B: maximum correction
No background noise influence on measured result

Certificate Ref: 1807174ST - 1
Test Institute: Peak Acoustics Ltd

Date: 03/01/2018
Signature:

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

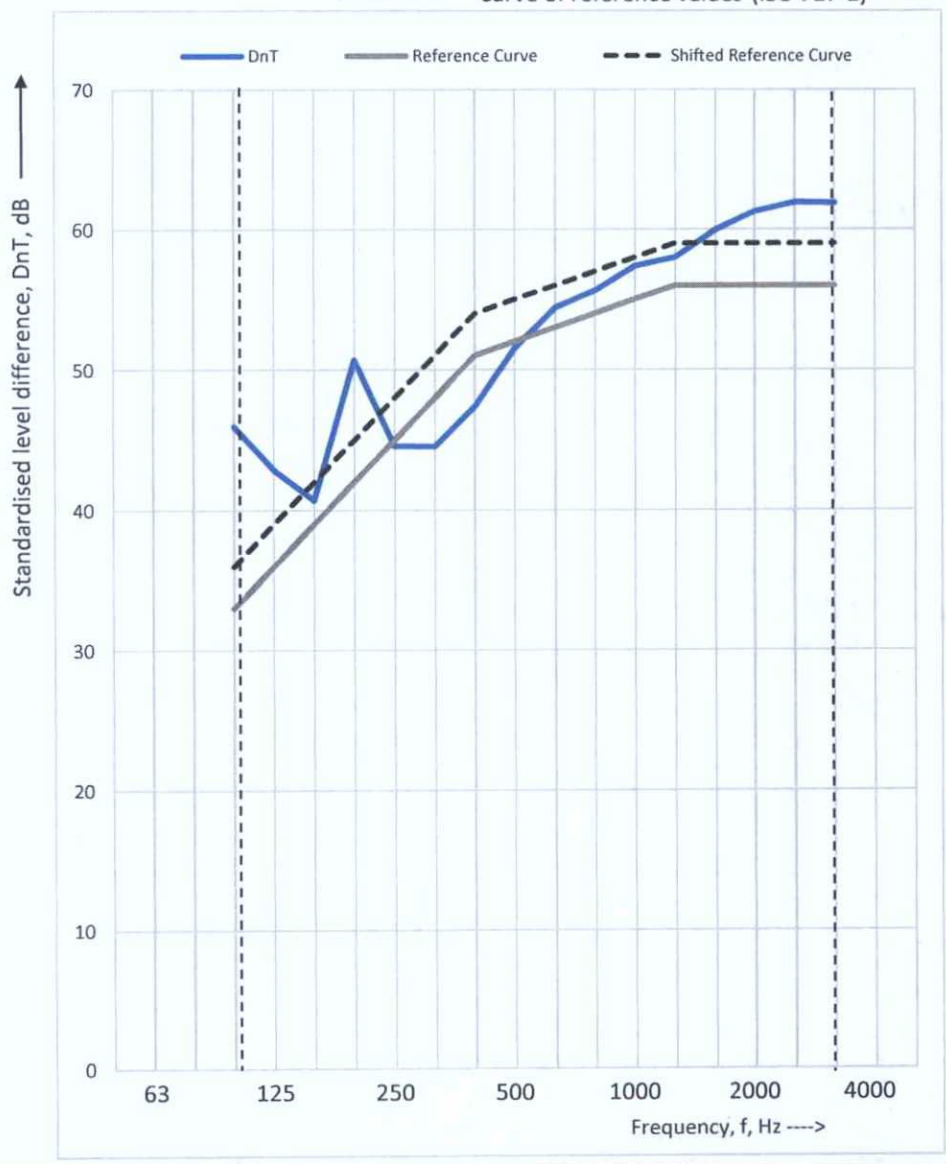
Client: Analia Kakias
Date of test: 03/01/2018
Certificate: Airborne 2

Project: 1807174ST

Source: Commercial - Back Room
Receiver: Flat 82A - Kitchen

Source room volume (m^3): 32.4
Receiver room volume (m^3): 14.616

| Frequency (Hz) | DnT 1/3 octave (dB) |
|---|---|
| 50 | |
| 63 | |
| 80 | |
| 100 | 46.0 |
| 125 | 42.9 |
| 160 | 40.7 |
| 200 | 50.7 |
| 250 | 44.6 |
| 315 | 44.6 |
| 400 | 47.4 |
| 500 | 51.6 |
| 630 | 54.4 |
| 800 | 55.7 |
| 1000 | 57.4 |
| 1250 | 58.0 |
| 1600 | 60.0 |
| 2000 | 61.3 |
| 2500 | 61.9 |
| 3150 | 61.9 |
| 4000 | |
| 5000 | |




Rating according to ISO 717-1

**DnT,w (C; Ctr) = 55 (-1; -4) dB**

Evaluation based on field measurement results obtained by an engineering method

b: background corrected, B: maximum correction
No background noise influence on measured result

Certificate Ref: 1807174ST - 2
Test Institute: Peak Acoustics Ltd

Date: 03/01/2018
Signature:

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**References**

**Test Procedure - Airborne Sound Insulation**

Airborne sound insulation measurements are taken to a recommended procedure summarised below:-

- A pink noise source generates a steady and continuous spectrum across the required frequency bands.
- Measurements, following the International Standard (2), of the sound levels are taken at one-third octave intervals from 100Hz to 3150Hz, in the source and reciever room using fixed microphone positions.
- An average sound pressure level, representative of the space in each room is established.
- Reverberation time measurements are made in the receiver room (3).
- The standardised level difference (DnT) in decibels (dB) is calculated in each frequency band using the equation: DnT = L1 - L2 + 10lg T/T0.

DnT is the Standardised Level Difference (dB)

L1 is the average sound pressure level in the source room (dB)
L2 is the average sound pressure level in the receiver room (dB)
T is the average reverberation time of the receiver room (seconds)
T0 is the reference reverberation time of 0.5 seconds.

- The Weighted Standardised Level Difference (DnT,w) in decibels and Spectrum Adaptation Terms (C and Ctr) , are calculated in accordance with BS EN ISO 717-1:1997(4)

**Test Procedure - Impact Sound Transmission**

Impact sound insulation measurements are taken to a recommended procedure summarised below:-

- An industry standard *tapping machine* is used as the impact noise source.
- Measurements, following the International Standard (5), if the sound level are taken at one-third octave bands intervals from 100Hz to 3150Hz in the receiver room using fixed micrphone positions.
- An average sound pressure level representative of the space in each room is established.
- Reverberation time measurements are made in the receiver room (3)
- The Standardised Impact Sound Pressure Level (L'nT) in decibels (dB) is calculated in each frequency band using the equation: Lnt = L1 - 10 lg T/T0

where L'nT Is the Standardised Level Difference (dB)
L1 is the average sound pressure level in the source room (dB)
L2 is the average sound pressure level in the receiver room (dB)
T is the average reverberation time of the receiver room (seconds)
T0 is the reference reverberation time of 0.5 seconds.

- The Weighted Standardised Impact Sound Pressure Level (L'nT,w) in decibels (dB) is calculated in accordance with BS EN ISO 717-2:1997 (6).

**Reference Documents**

1.The Building Regulations 2015 - Approved Document E: Resistance to the passage of sound.
2. BS EN ISO 140-4:1998 Acoustics - Measurements of sound insulation in buildings and of building elements.
3. BS EN ISO 354:2003 Acoustics - Measurement of sound absorption in a reverberation room.
4. BS EN ISO 717-1:1997 (Incorporating Amendment 1) Rating of sound insulation in buildings and of building elements.
5.BS EN ISO 140-7:1998 Field Measurements of impact sound insulation of floors.
6. BS EN ISO 717-2:1997 (Incorporating Amendment 1) Acoustics. Rating of sound insulation in buildings and of building elements. Impact sound insulation.