Description of Test Site:

Revision No. 1

A new developments of seven apartments & dwelling-houses.

Floor Construction:

Vinyl flooring,
100mm Screed,
200mm Concrete beam + block,
Independent timber joist ceiling perimeter fixed,
2no. 15mm Plasterboard.

Wall Construction:

1no. Plasterboard,
25mm Battens incorparating insulation,
100mm Block,
100m Cavity full fill,
100mm Block,
25mm Battens incorparating insulation,
1no. Plasterboard.

Test Conditions:

Rooms were all complete and ready to test. The impact tests were performed using a small timber board over vinyl bonded to concrete flooring.

Building Regulation Performance Requirements:

Revision No. 1

"In the secretary of state's view the normal way of satisfying Requirement E1 will be to build separating walls, separating floors, and stairs that have a separating function, together with the associated flanking construction, in such a way that they achieve the sound insulation values for dwelling houses and flats, and the values for rooms for residential purposes"

Purpose built dwelling-houses and flats

Separating walls:	airborne	$D_{nT,w} + C_{tr}$	= 45dB or higher
Separating floors:	airborne	$D_{nT,w} + C_{tr}$	= 45dB or higher
Separating floors:	impact	$L'_{nT,w}$	= 62dB or lower

Dwelling-houses and flats formed by material change of use.

Separating walls:	airborne	$D_{nT,w} + C_{tr}$	= 43dB or higher
Separating floors:	airborne	$D_{nT,w} + C_{tr}$	= 43dB or higher
Separating floors:	impact	$L'_{nT,w}$	= 64dB or lower

Purpose built rooms for residential purposes.

Separating walls:	airborne	$D_{nT,w} + C_{tr}$	= 43dB or higher
Separating floors:	airborne	$D_{nT,w} + C_{tr}$	= 45dB or higher
Separating floors:	impact	$L'_{nT,w}$	= 62dB or lower

Rooms for residential purposes formed by material change of use.

Separating walls:	airborne	$D_{nT,w} + C_{tr}$	= 43dB or higher
Separating floors:	airborne	$D_{nT,w} + C_{tr}$	= 43dB or higher
Separating floors:	impact	$L'_{nT,w}$	= 64dB or lower

Results:

Revision No. 1

Table 1. Vertical (airborne) across separating floors.

Test	Source Room	Volume	Receiver Room	Volume	$D_{nT,w}+C_{tr}$	Comment
9897S-1	No.17, Living Room	43.2m³	No.19, Living Room	43.2m³	57 dB	PASS
9897S-3	No.21, Bedroom	34.4m³	No.23, Bedroom	30.9m³	56 dB	PASS
A 43dB or higher $D_{nT,w}+C_{tr}$ value is required to achieve a 'pass'						

Table 2. Vertical (impact) across separating floors.

Test	Source Room	Volume	Receiver Room	Volume	$L'_{nT,w}$	Comment
9897S-2	No.17, Living Room	43.2m³	No.19, Living Room	43.2m³	51 dB	PASS[1]
9897S-4	No.21, Bedroom	34.4m³	No.23, Bedroom	30.9m³	47 dB	PASS[1]
A 64dB or lower $L'_{nT,w}$ value is required to achieve a 'pass'						

Table 3. Horizontal (airborne) across separating walls.

Test	Source Room	Volume	Receiver Room	Volume	$D_{nT,w}+C_{tr}$	Comment
9897S-5	No.9, Kitchen	31.2m³	No.11, Bedroom	28.8m³	55 dB	PASS
9897S-6	No.11, Kitchen	31.2m³	No.15, Bedroom	28.8m³	57 dB	PASS
9897S-7	No.19, Living Room	43.2m³	No.23, Bedroom	30.9m³	50 dB	PASS
9897S-8	No.17, Living Room	43.2m³	No.21, Bedroom	34.4m³	50 dB	PASS
A 43dB or higher $D_{nT,w}+C_{tr}$ value is required to achieve a 'pass'						

[1]Should be taken as a guidance result as the impact test was performed using a small timber board over vinyl bonded to concrete flooring.

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.17, Living Room — Source room volume: 43.2m³

Receiver room: No.19, Living Room — Receiver room volume: 43.2m³

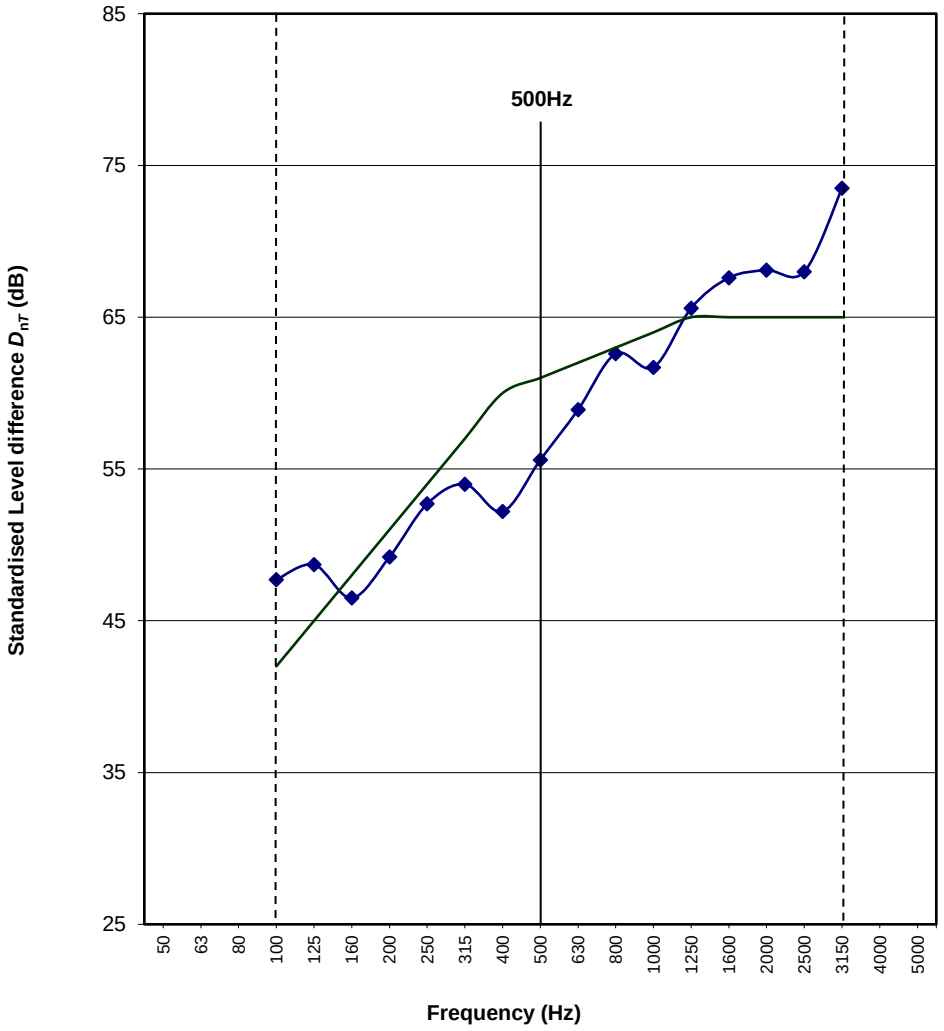
Direction of test: Vertical

Floor Construction: Vinyl flooring, 100mm Screed, 200mm Concrete beam + block,Independent timber joist ceiling perimeter fixed, 2no. 15mm Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	47.7
125	48.7
160	46.5
200	49.2
250	52.7
315	54.0
400	52.2
500	55.6
630	58.9
800	≥62.6*
1000	≥61.7*
1250	≥65.6*
1600	67.6
2000	68.1
2500	68.0
3150	73.5
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 61 (-4) dB — $D_{nT,w} + C_{tr}$ = 57 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-1 — Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017 — Signature: — Engineer: L Richardson

ISO 140-7:1998 Standardised Impact Sound Pressure Level

Revision No. 1

Field measurements of impact isolation of floors

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.17, Living Room — Source room volume: 43.2m³

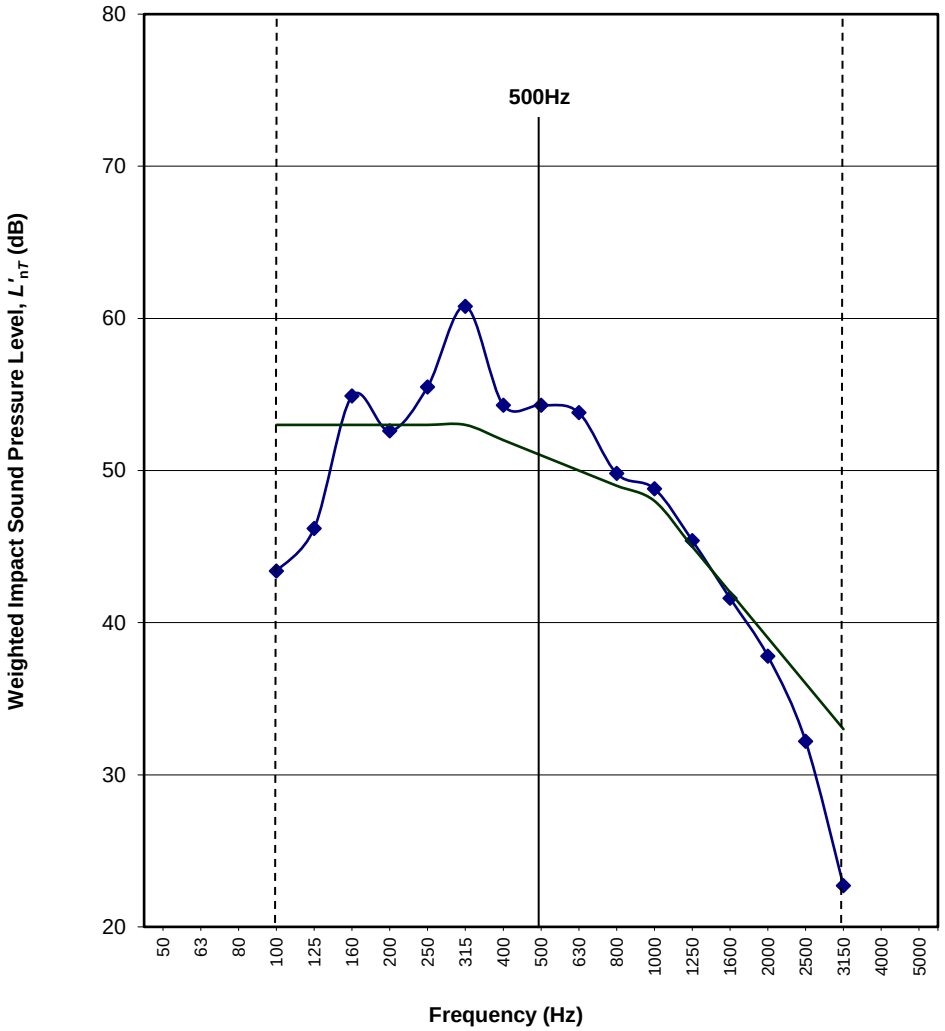
Receiver room: No.19, Living Room — Receiver room volume: 43.2m³

Direction of test: Vertical

Floor Construction: Vinyl flooring, 100mm Screed, 200mm Concrete beam + block,Independent timber joist ceiling perimeter fixed, 2no. 15mm Plasterboard.

Frequency (Hz)	L'_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	43.4
125	46.2
160	54.9
200	52.6
250	55.5
315	60.8
400	54.3
500	54.3
630	53.8
800	49.8
1000	48.8
1250	45.4
1600	41.6
2000	37.8
2500	32.2
3150	22.7
4000	N/A
5000	N/A

Frequency range according to the curve of reference values (ISO 717-2)



Rating according to ISO 717-2

$L'_{nT,w}$ = 51 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-2

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.21, Bedroom — Source room volume: 34.4m³

Receiver room: No.23, Bedroom — Receiver room volume: 30.9m³

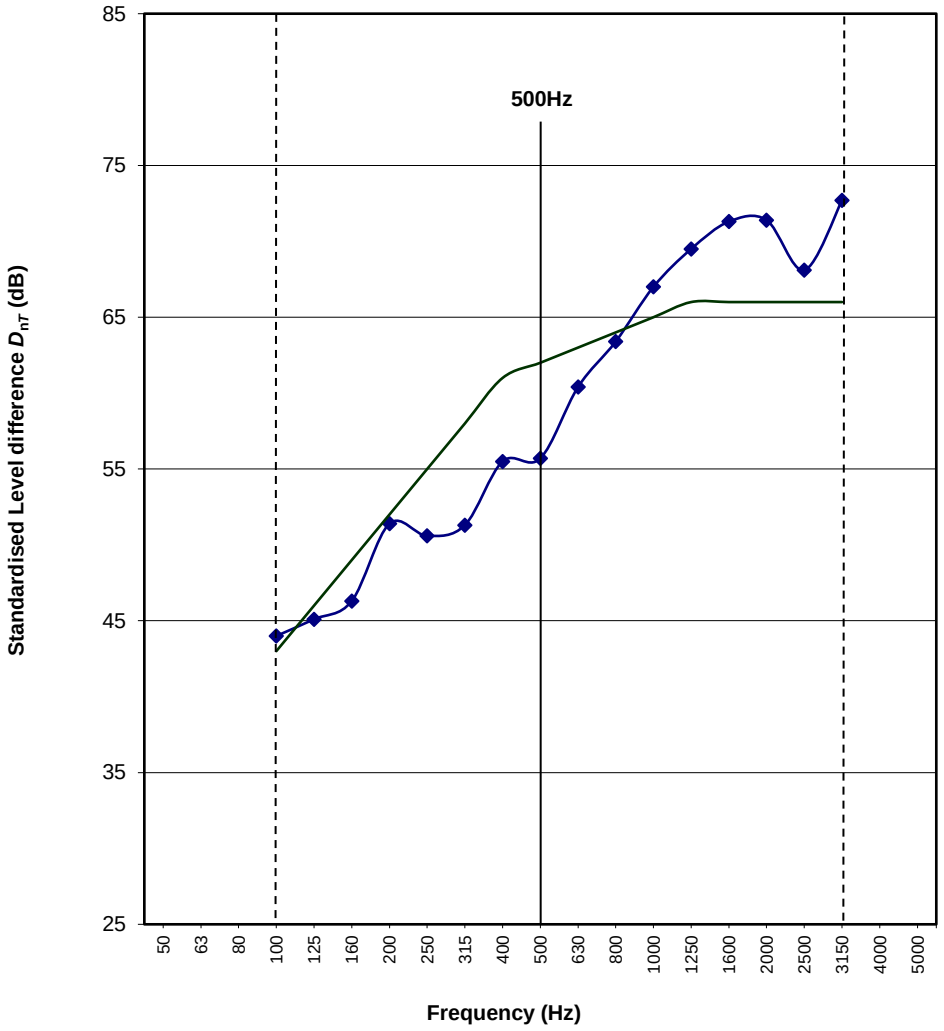
Direction of test: Vertical

Floor Construction: Vinyl flooring, 100mm Screed, 200mm Concrete beam + block, Independent timber joist ceiling perimeter fixed, 2no. 15mm Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	44.0
125	45.1
160	46.3
200	51.4
250	50.6
315	51.3
400	55.5
500	55.7
630	60.4
800	63.4
1000	≥67.0*
1250	69.5
1600	71.3
2000	71.4
2500	68.1
3150	72.7
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 62 (-6) dB — $D_{nT,w} + C_{tr}$ = 56 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-3 — Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017 — Signature: — Engineer: L Richardson

ISO 140-7:1998 Standardised Impact Sound Pressure Level

Revision No. 1

Field measurements of impact isolation of floors

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.21, Bedroom — Source room volume: 34.4m³

Receiver room: No.23, Bedroom — Receiver room volume: 30.9m³

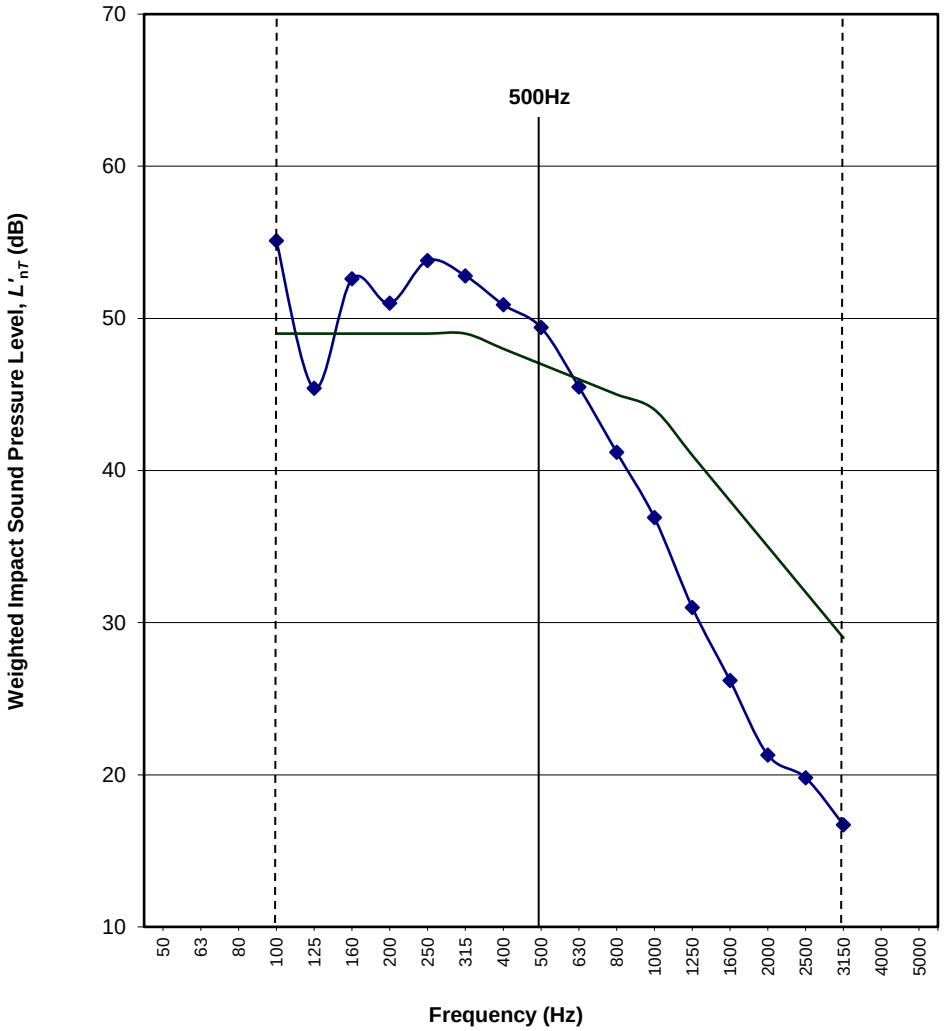
Direction of test: Vertical

Floor Construction: Vinyl flooring, 100mm Screed, 200mm Concrete beam + block, Independent timber joist ceiling perimeter fixed, 2no. 15mm Plasterboard.

Frequency (Hz)	L'_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	55.1
125	45.4
160	52.6
200	51.0
250	53.8
315	52.8
400	50.9
500	49.4
630	45.5
800	41.2
1000	36.9
1250	31.0
1600	26.2
2000	21.3
2500	19.8
3150	≤16.7*
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-2)



Rating according to ISO 717-2

$L'_{nT,w}$ = 47 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-4

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.9, Kitchen — Source room volume: 31.2m³

Receiver room: No.11, Bedroom — Receiver room volume: 28.8m³

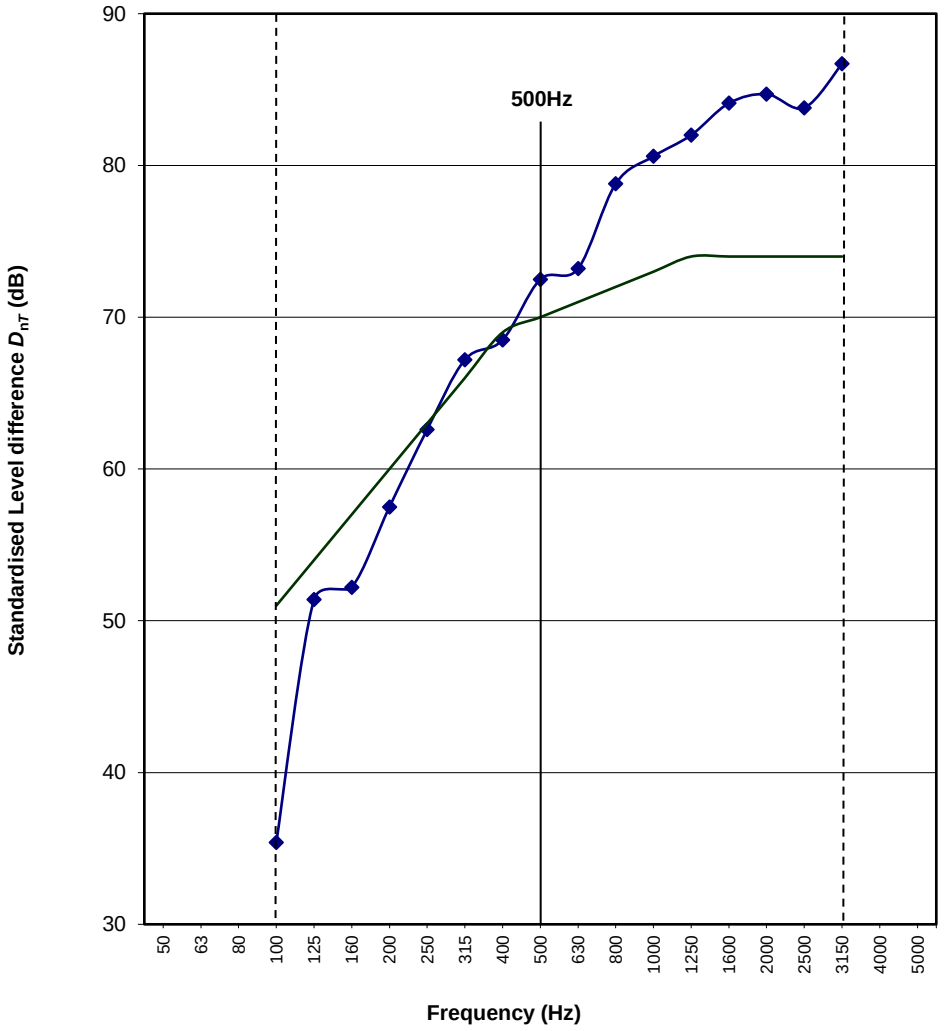
Direction of test: Horizontal

Wall Construction: 1no. Plasterboard, 25mm Battens incorparating insulation, 100mm Block, 100m Cavity full fill, 100mm Block, 25mm Battens incorparating insulation, 1no. Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	35.4
125	51.4
160	52.2
200	57.5
250	62.6
315	67.2
400	68.5
500	72.5
630	73.2
800	78.8
1000	80.6
1250	82.0
1600	84.1
2000	84.7
2500	83.8
3150	≥86.7*
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 70 (-15) dB $D_{nT,w} + C_{tr}$ = 55 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-5

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.11, Kitchen — Source room volume: 31.2m³

Receiver room: No.15, Bedroom — Receiver room volume: 28.8m³

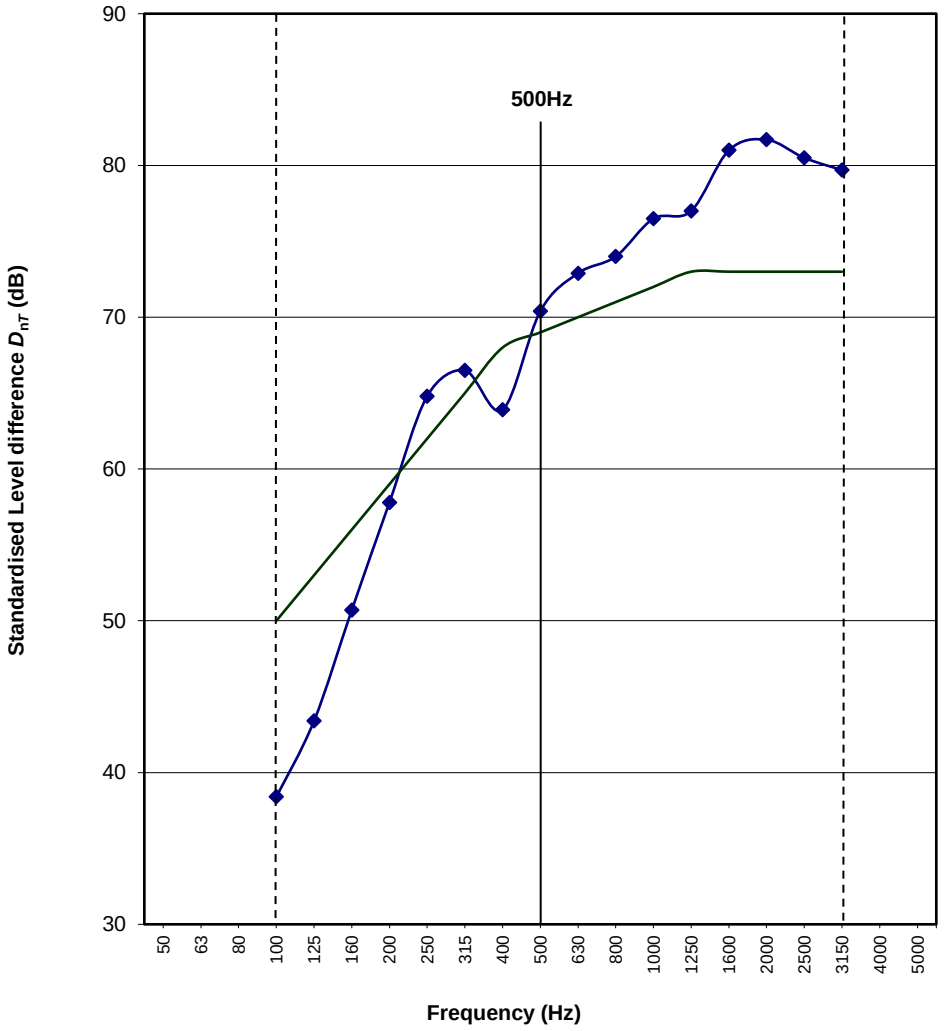
Direction of test: Horizontal

Wall Construction: 1no. Plasterboard, 25mm Battens incorparating insulation, 100mm Block, 100m Cavity full fill, 100mm Block, 25mm Battens incorparating insulation, 1no. Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	38.4
125	43.4
160	50.7
200	57.8
250	64.8
315	66.5
400	63.9
500	70.4
630	≥72.9*
800	≥74.0*
1000	≥76.5*
1250	≥77.0*
1600	≥81.0*
2000	≥81.7*
2500	≥80.5*
3150	≥79.7*
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 69 (-12) dB $D_{nT,w} + C_{tr}$ = 57 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-6

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.19, Living Room — Source room volume: 43.2m³

Receiver room: No.23, Bedroom — Receiver room volume: 30.9m³

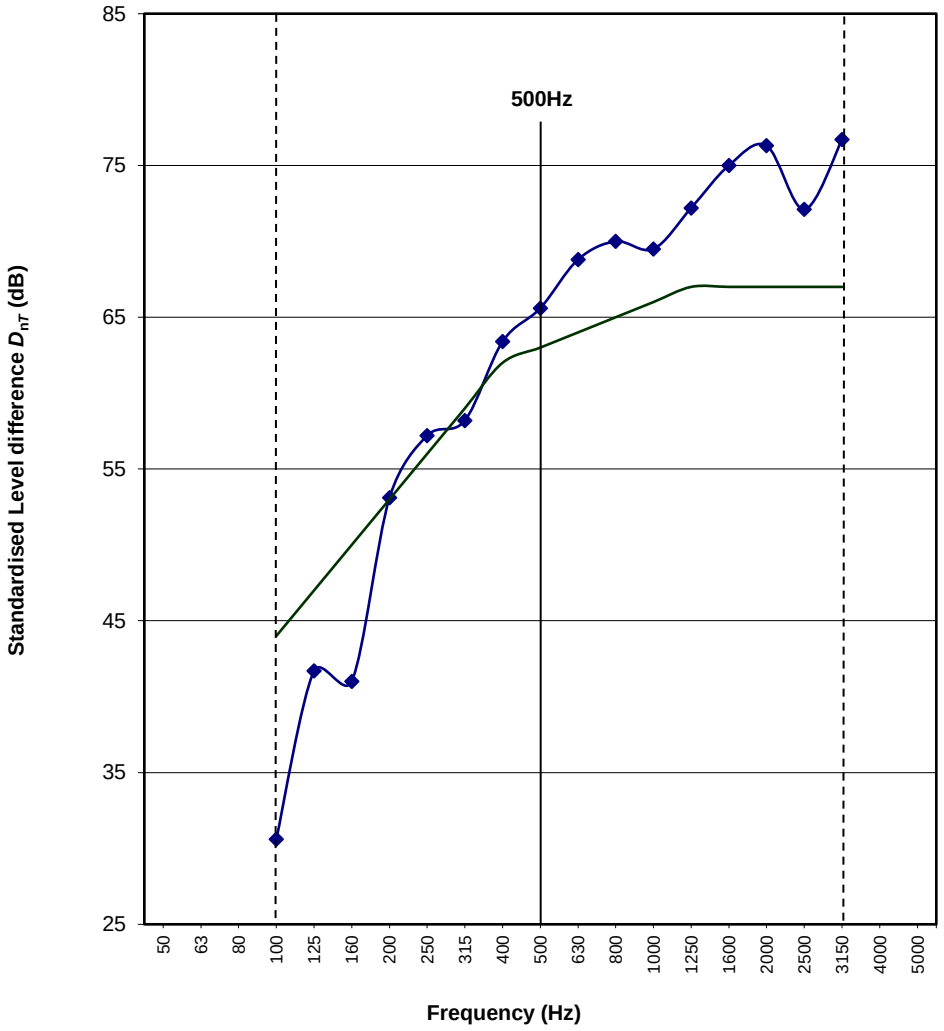
Direction of test: Horizontal

Wall Construction: 1no. Plasterboard, 25mm Battens incorparating insulation, 100mm Block, 100m Cavity full fill, 100mm Block, 25mm Battens incorparating insulation, 1no. Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	30.6
125	41.7
160	41.0
200	53.1
250	57.2
315	58.2
400	63.4
500	65.6
630	68.8
800	70.0
1000	≥69.5*
1250	≥72.2*
1600	≥75.0*
2000	76.3
2500	72.1
3150	76.7
4000	N/A
5000	N/A

* Value is at the limit of measurment due to the influence of background noise

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 63 (-13) dB $D_{nT,w} + C_{tr}$ = 50 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-7

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson

BS EN ISO 140-4:1998 Standardised Level Difference

Revision No. 1

Field measurements of airborne sound insulation between rooms

Client: Floorscan Acoustics Limited

Date of test: 04/09/2017

Description and identification of the building construction and test arrangement, direction of measurement:

Source Room: No.17, Living Room — Source room volume: 43.2m³

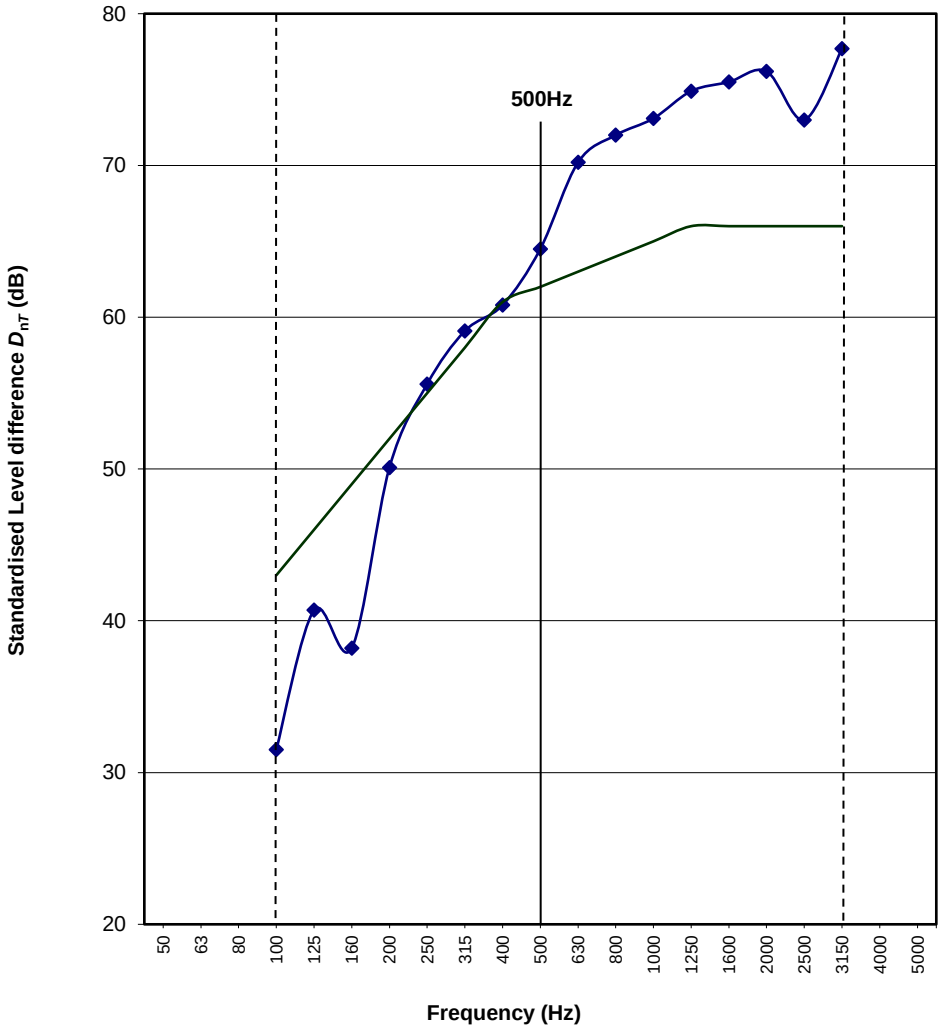
Receiver room: No.21, Bedroom — Receiver room volume: 34.4m³

Direction of test: Horizontal

Wall Construction: 1no. Plasterboard, 25mm Battens incorparating insulation, 100mm Block, 100m Cavity full fill, 100mm Block, 25mm Battens incorparating insulation, 1no. Plasterboard.

Frequency (Hz)	D_{nT} (1/3 oct) dB
50	N/A
63	N/A
80	N/A
100	31.5
125	40.7
160	38.2
200	50.1
250	55.6
315	59.1
400	60.8
500	64.5
630	70.2
800	72.0
1000	73.1
1250	74.9
1600	75.5
2000	76.2
2500	73.0
3150	77.7
4000	N/A
5000	N/A

Frequency range according to the curve of reference values (ISO 717-1)



Rating according to ISO 717-1

$D_{nT,w}$ (C_{tr}) = 62 (-12) dB $D_{nT,w} + C_{tr}$ = 50 dB

Evaluation based on field measurement results obtained by an engineering method

Test report: 9897S-8

Name of test institute: Soundtesting.co.uk Ltd

Date of report: 18/09/2017

Signature:

Engineer: L Richardson