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ENERGY
LIMITED

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5-8A Whitehall Parade
London Road, East Grinstead

30 April 2025

18952-SI-01-AA-R0

UKAS Accredited Sound Insulation Test Report

Building Regulations,
Approved Document E

Project Number
18952



Clement Acoustics Ltd is a company registered in England & Wales no. 07958744
UKAS accreditation is only applicable to pre-completion sound insulation testing services for building regulations undertaken by
Clement Acoustics Ltd on behalf of Falcon Energy Ltd and not linked to the certifications shown above

CONTENTS

1.0	INTRODUCTION	1
2.0	METHODOLOGY	1
2.1	AIRBORNE TESTS	1
2.2	IMPACT TESTS	1
2.3	REVERBERATION TIME.....	2
2.4	BACKGROUND NOISE	2
3.0	INSTRUMENTATION	2
4.0	REQUIREMENTS	2
5.0	TEST ROOMS	3
6.0	RESULTS.....	3
6.1	AIRBORNE WALL TESTS	4
6.2	AIRBORNE FLOOR TESTS	4
6.3	IMPACT FLOOR TESTS.....	4
7.0	CONCLUSION.....	5

LIST OF ATTACHMENTS

18952-SI-01-AW1 to AW2	Airborne Wall Sound Insulation Test Results
18952-SI-01-AF1 to AF4	Airborne Floor Sound Insulation Test Results
18952-SI-01-IF1 to IF4	Impact Floor Sound Insulation Test Results

Issue	Date of Issue	Author	Reviewed	Authorised
R0	30/04/2025			
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Issue	Comment
R0	First Issue

1.0 INTRODUCTION

Clement Acoustics Ltd, 1B(c) Yukon Road, London SW12 9PZ has been commissioned by Falcon Energy to undertake pre-completion tests at 5-8A Whitehall Parade under the provisions of Approved Document E [ADE] of the Building Regulations 2010.

The development is a material change of use property consisting of a complex housing 7 residential units located on the first floor of an existing building.

This report records the results of the sound insulation tests and details the procedures used throughout the measurement and post-processing phases.

The sound insulation tests detailed in this report were undertaken by MD Atif Uddin and Shreyas Rajeendran on 28 April 2025 in full accordance with BS EN ISO 140-4: 1998 "Field measurements of airborne sound insulation between rooms", BS EN ISO 140-7: 1998 "Field measurements of impact sound insulation between rooms" and the procedures described in Annex B of the Approved Document.

2.0 METHODOLOGY

2.1 Airborne Tests

High volume "white" noise was generated from a single loudspeaker in the source room, positioned in order to obtain a diffuse sound field. A spatial average of the resulting one-third octave band noise levels between 100 Hz and 3150 Hz was obtained by using a moving microphone technique over a minimum period of 15 seconds at one position.

The same measurement procedure was followed in the receiver room.

The entire procedure was then repeated, with the loudspeaker located in a different position.

The results of the tests were rated in accordance with BS EN ISO 717-1: 1997 "Rating of sound insulation in buildings and of building elements. Part 1 - Airborne sound insulation".

2.2 Impact Tests

A tapping machine complying with Annex A of BS EN ISO 140-7 was placed in four different positions in the source room. The resulting one-third octave band noise levels between 100 Hz and 3150 Hz were measured at four evenly distributed positions for a minimum of five seconds at each position in the receiver room. Two receiver measurements were conducted for each measurement position.

The results of the tests were rated in accordance with BS EN ISO 717-2: 1997 "Rating of sound insulation in buildings and of building elements. Part 2 - Impact sound insulation".

2.3 Reverberation Time

Reverberation time measurements were taken following the procedure described below in order to correct the receiver levels for room characteristics.

High volume “white noise” was generated in the receiver rooms and stopped instantaneously in order to measure the reverberation time in each of the one-third octave bands between 100 Hz and 3150 Hz. The internal programme of the sound level meter was used to measure the decay time of sound in the room. This was repeated nine times in each room in order to obtain an average result.

2.4 Background Noise

Background noise levels in the receiver rooms were measured during the tests and the receiving room levels corrected in accordance with BS EN ISO 140 Part 4.

The dominant source of background noise observed during the tests was road traffic noise from the surrounding area.

3.0 INSTRUMENTATION

The instrumentation used during testing is shown in Table 3.1 below.

Instrument	Manufacturer and Type	Serial Number
Sound level meter	Norsonic Nor 145	14529093
Active Loudspeaker	RCF ART 310A	LKXN31648
Calibrator	Svantek SV33B	83120
Tapping machine	Sound Solutions Series 2	TP02109

Table 3.1 Instrumentation used during testing

4.0 REQUIREMENTS

The sound insulation requirements for this development, as prescribed by ADE, are shown in the relevant sections of Section 6.0 where they are compared to the test results.

5.0 TEST ROOMS

Details of the rooms tested are shown in Table 5.1 below. All the rooms tested were in a finished state, with doors fitted, walls painted and all sockets installed.

Test Element	Room 1	Room 2	Approx. Test Area	Construction
Wall	Flat 12 Bedroom (51 m³)	Flat 11 Living Room / Kitchen (67 m³)	11 m²	See Report 18952-ADR-01
Wall	Flat 8 Bedroom (73 m³)	Flat 9 Living Room / Kitchen (64 m³)	11 m²	
Floor	Flat 12 Bedroom (51 m³)	Retail Space (170 m³)	21 m²	
Floor	Flat 12 Living Room / Kitchen (61 m³)	Retail Space (170 m³)	25 m²	
Floor	Flat 4 Living Room / Kitchen (63 m³)	Flat 11 Bedroom (51 m³)	26 m²	
Floor	Flat 4 Bedroom (33 m³)	Flat 11 Living Room / Kitchen (67 m³)	14 m²	

Table 5.1 Room details

All the procedures described in Annex B of ADE have been followed.

6.0 RESULTS

The results of testing are summarised in the tables below. For airborne tests, the higher the value, the better the performance. For impact tests, the lower the value, the better the performance.

Each result stated in this report and our test certificates applies only to the element tested and as the samples were presented.

It should be noted that the following planning condition has been issued by the Mid Sussex District Council:

‘The development hereby permitted shall not be occupied or brought into use until there has been submitted to the local planning authority a report by a competent person demonstrating that any sound attenuation measures between the commercial and residential properties are effective and achieve a minimum airborne sound insulation value of 50dB (DnTw+Ctr dB). Post completion testing shall be required to show this has been achieved. This shall be submitted to the LPA and approved in writing.’

Hence, the criteria for the airborne performance of the floors separating the residential space from the commercial is $D_{nT,w} + C_{tr} \geq 50$ dB.

6.1 Airborne Wall Tests

The summarised results of the airborne wall tests are shown in Table 6.1.

While this is a change of use development, the walls are being newly built inside, hence the requirement will be to achieve the new build airborne sound insulation performance of $D_{nT,w} + C_{tr} \geq 45$ dB.

Certificate Reference	Source	Receiver	Test Result	Pass/Fail
18952-SI-01-AW1	Flat 12 Bedroom	Flat 11 Living Room / Kitchen	$D_{nT,w} + C_{tr}$ 50 dB	Pass
18952-SI-01-AW2	Flat 8 Bedroom	Flat 9 Living Room / Kitchen	$D_{nT,w} + C_{tr}$ 47 dB	Pass

Table 6.1 Airborne wall test results

6.2 Airborne Floor Tests

The summarised results of the airborne floor tests are shown in Table 6.2.

For this change of use development, the requirement for separating floors is to achieve an airborne sound insulation performance of $D_{nT,w} + C_{tr} \geq 43$ dB.

Certificate Reference	Source	Receiver	Test Result	Pass/Fail
18952-SI-01-AF1	Flat 12 Bedroom	Retail Space	$D_{nT,w} + C_{tr}$ 52 dB	Pass
18952-SI-01-AF2	Flat 12 Living Room / Kitchen	Retail Space	$D_{nT,w} + C_{tr}$ 52 dB	Pass
18952-SI-01-AF3	Flat 4 Living Room / Kitchen	Flat 11 Bedroom	$D_{nT,w} + C_{tr}$ 60 dB	Pass
18952-SI-01-AF4	Flat 4 Bedroom	Flat 11 Living Room / Kitchen	$D_{nT,w} + C_{tr}$ 56 dB	Pass

Table 6.2 Airborne floor test results

6.3 Impact Floor Tests

The summarised results of the impact floor tests are shown in Table 6.3.

For this change of use development, the requirement for separating floors is to achieve an impact sound insulation performance of $L'_{nT,w} \leq 64$ dB.

Certificate Reference	Source	Receiver	Test Result	Pass/Fail
18952-SI-01-IF1	Flat 12 Bedroom	Retail Space	L' _{nT,w} 51 dB	Pass
18952-SI-01-IF2	Flat 12 Living Room / Kitchen	Retail Space	L' _{nT,w} 52 dB	Pass
18952-SI-01-IF3	Flat 4 Living Room / Kitchen	Flat 11 Bedroom	L' _{nT,w} 46 dB	Pass
18952-SI-01-IF4	Flat 4 Bedroom	Flat 11 Living Room / Kitchen	L' _{nT,w} 43 dB	Pass

Table 6.3 Impact floor test results

7.0 CONCLUSION

Sound insulation tests were undertaken at 5-8A Whitehall Parade, London Road, East Grinstead under the requirement of ADE.

Ratings of the airborne sound insulation performance of the walls and floors tested have been calculated in accordance with the measurement and rating procedures defined in BS EN ISO 140 Part 4 and BS EN ISO 717 Part 1 respectively.

Ratings of the impact sound insulation performance of the floors have been derived in accordance with the measurement and rating procedures defined in BS EN ISO 140 Part 7 and BS EN ISO 717 Part 2, respectively.

The airborne performance of the walls tested as listed in Table 6.1 meets the requirements of ADE of the Building Regulations.

The airborne performance of the floors tested as listed in Table 6.2 meets the requirements of ADE of the Building Regulations. The airborne performance of the floors associated with the retail space also achieves the compliance with the Mid Sussex District Council’s planning condition.

The impact performance of the floors tested as listed in Table 6.3 meets the requirements of ADE of the Building Regulations.

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 12 Bedroom - Flat 11 Living Room / Kitchen

Frequency (Hz)	D _{nT} (dB)
100	33.6
125	39.3
160	42.1
200	≥ 43.9
250	50.2
315	≥ 53.6
400	56.3
500	≥ 56.5
630	≥ 58.7
800	≥ 60.0
1000	≥ 61.0
1250	≥ 59.1
1600	≥ 61.4
2000	≥ 55.8
2500	≥ 51.6
3150	≥ 55.6

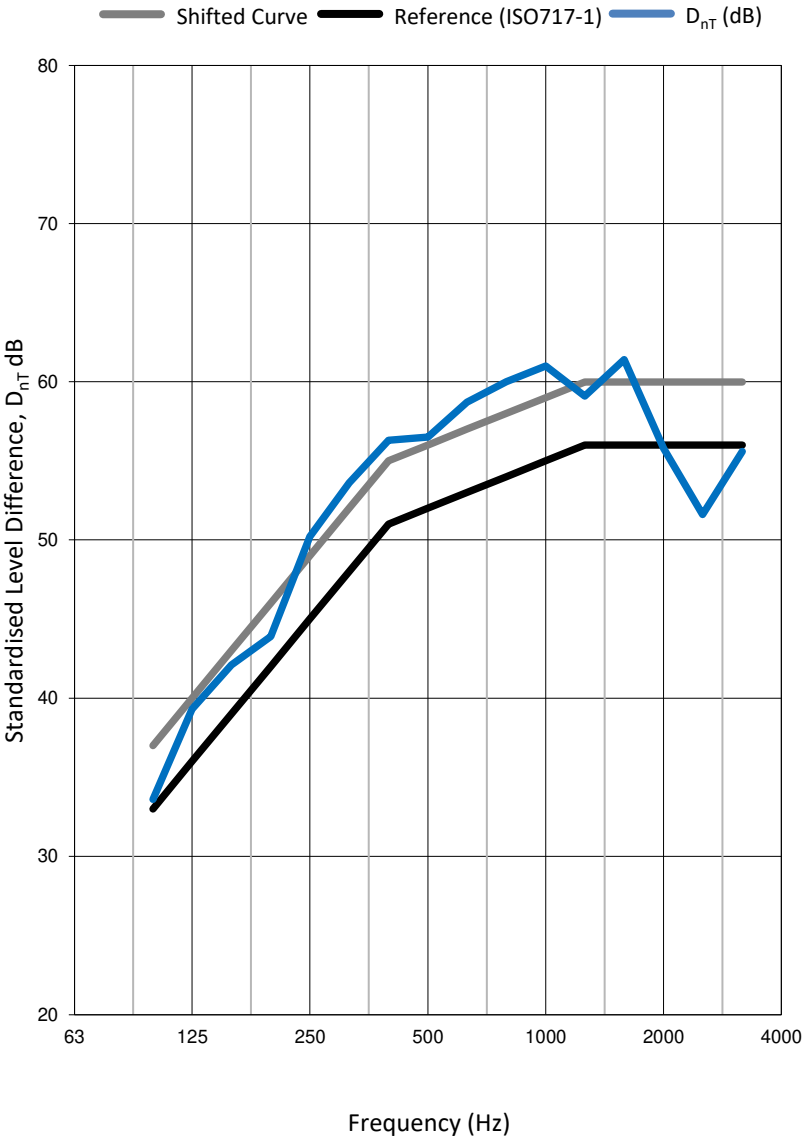
$D_{nT,w} (C_{tr}) \text{ (dB)} : (C_{tr}) = 56 \text{ (-6)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 50$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≥” Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-AW1

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 8 Bedroom - Flat 9 Living Room / Kitchen

Frequency (Hz)	D _{nT} (dB)
100	29.3
125	35.1
160	35.4
200	44.7
250	48.3
315	50.6
400	54.1
500	57.6
630	59.9
800	60.9
1000	60.4
1250	62.4
1600	65.0
2000	63.2
2500	63.1
3150	65.8

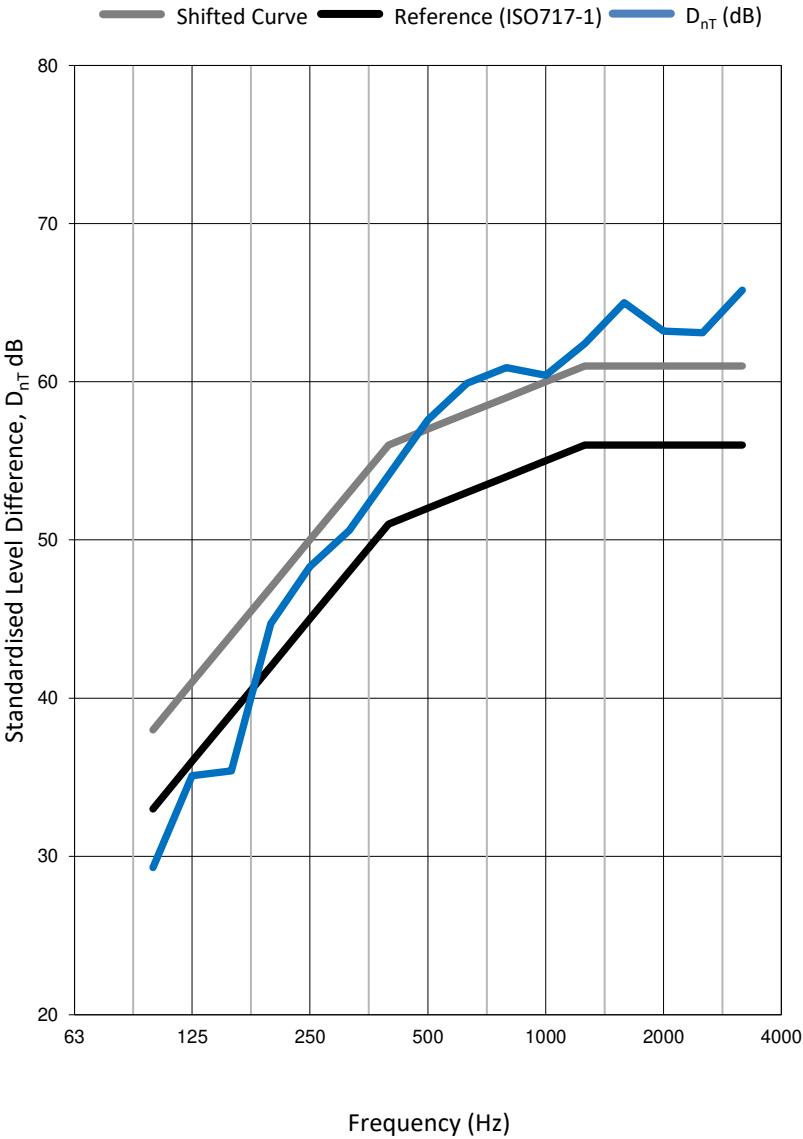
$D_{nT,w} (C_{tr}) \text{ (dB)} : (C_{tr}) = 57 \text{ (-10)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 47$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≥” Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-AW2

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 12 Bedroom - Retail Space

Frequency (Hz)	D _{nT} (dB)
100	34.9
125	38.6
160	44.8
200	47.7
250	49.4
315	52.7
400	56.2
500	58.3
630	63.3
800	66.0
1000	68.2
1250	69.4
1600	70.3
2000	70.0
2500	70.0
3150	70.6

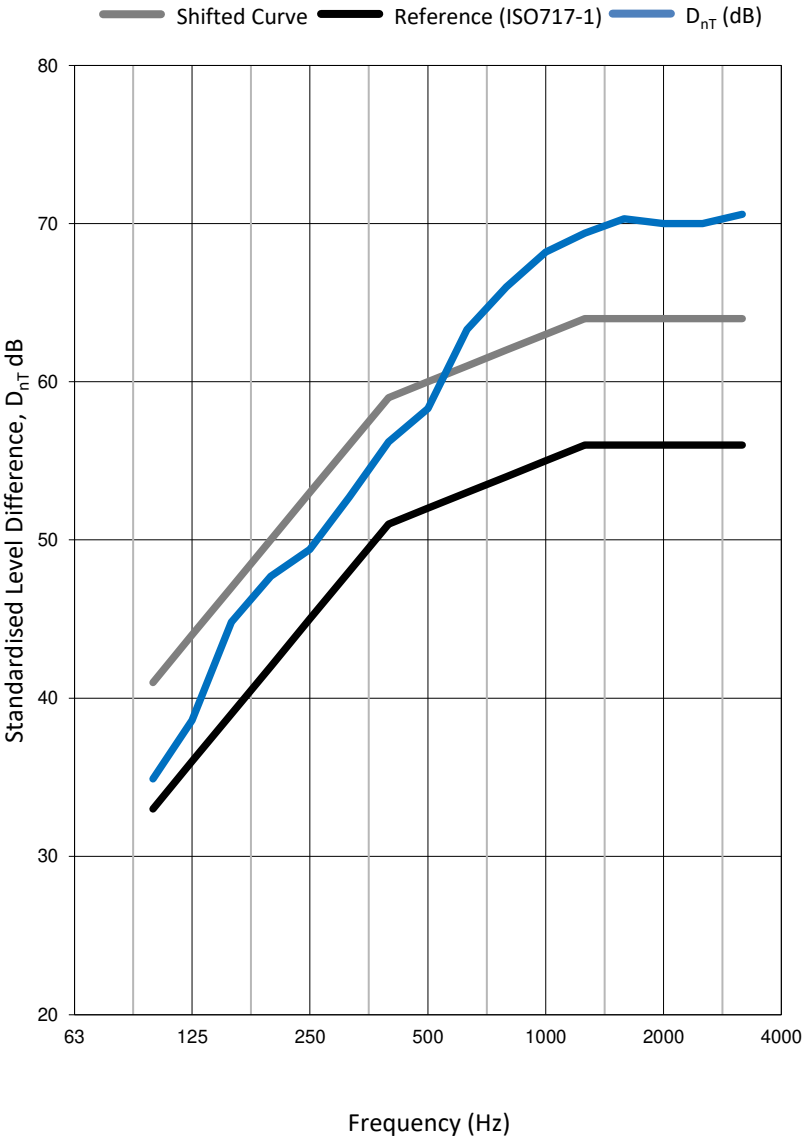
$D_{nT,w} (C_{tr}) \text{ (dB)} : (C_{tr}) = 60 \text{ (-8)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 52$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≥” Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-AF1

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

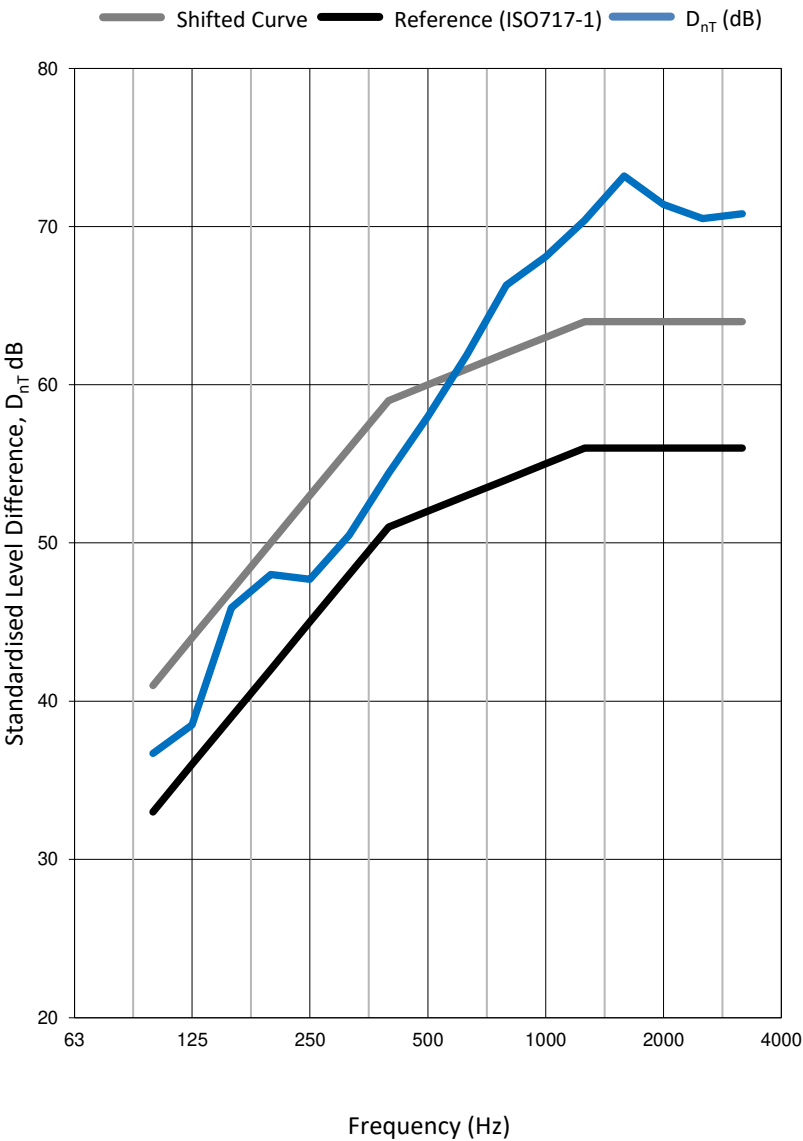
Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 12 Living Room / Kitchen - Retail Space

Frequency (Hz)	D _{nT} (dB)
100	36.7
125	38.5
160	45.9
200	48.0
250	47.7
315	50.5
400	54.4
500	58.0
630	61.9
800	66.3
1000	68.1
1250	70.4
1600	73.2
2000	71.4
2500	70.5
3150	70.8

$D_{nT,w}(C_{tr}) \text{ (dB)} : (C_{tr}) = 60 \text{ (-8)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 52$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01



"≥" Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-AF2

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 4 Living Room / Kitchen - Flat 11 Bedroom

Frequency (Hz)	D _{nT} (dB)
100	45.9
125	≥ 50.7
160	≥ 48.1
200	≥ 53.3
250	≥ 54.3
315	≥ 59.2
400	≥ 62.6
500	≥ 63.4
630	≥ 66.6
800	≥ 73.3
1000	≥ 74.2
1250	≥ 76.3
1600	≥ 77.9
2000	≥ 71.0
2500	≥ 64.9
3150	≥ 65.1

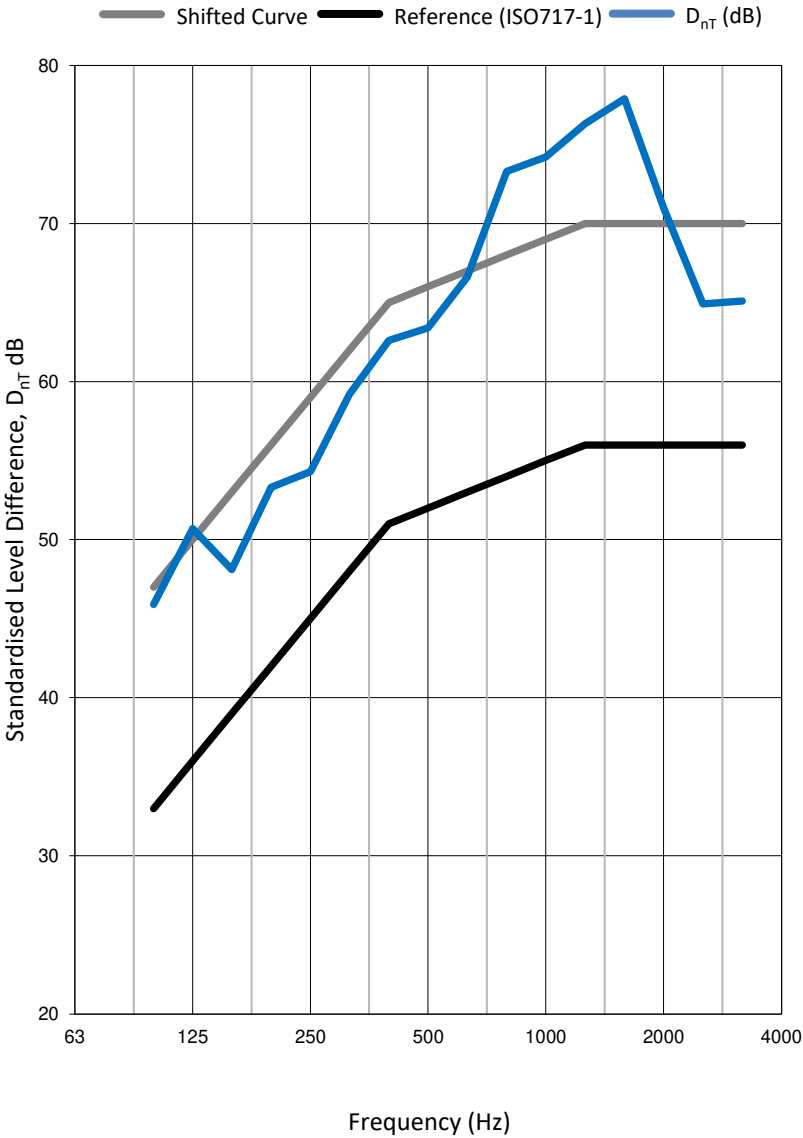
$D_{nT,w}(C_{tr}) \text{ (dB)} : (C_{tr}) = 66 \text{ (-6)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 60$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≥” Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajendran



18952-SI-01-AF3

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Airborne Sound Insulation Performance According to BS EN ISO 140-4

Field Measurements of Airborne Sound Insulation Between Rooms

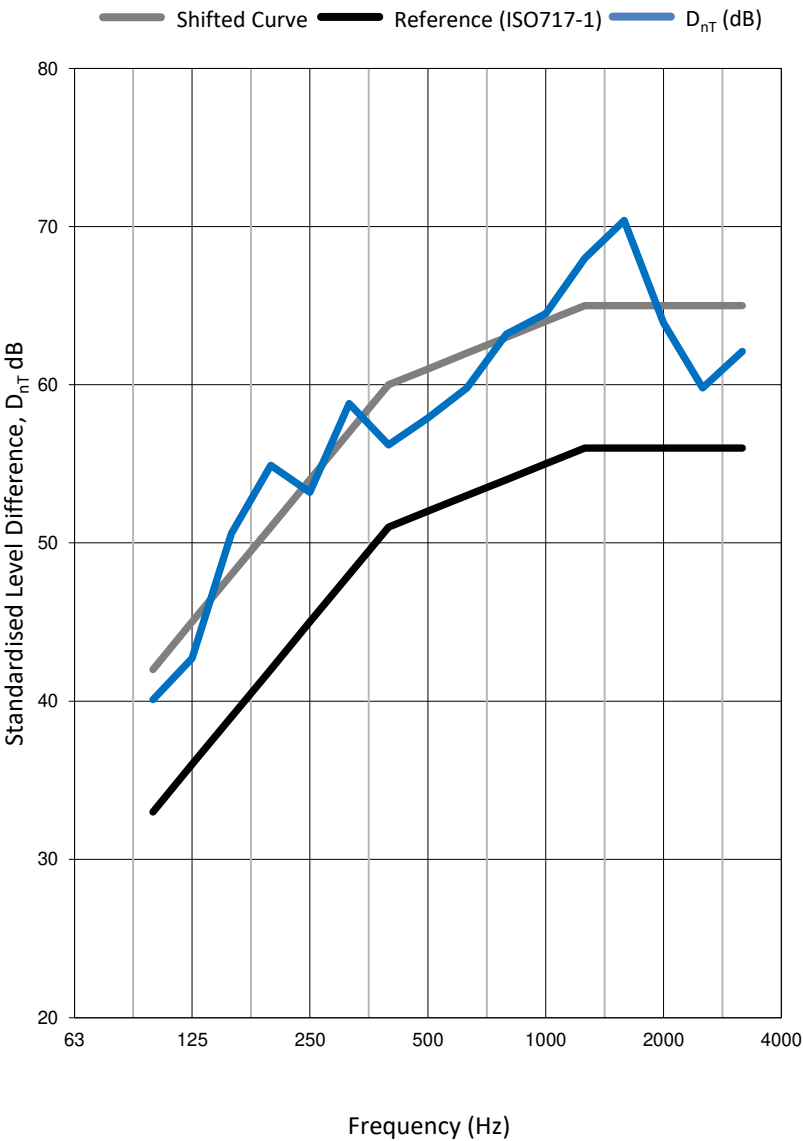
Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 4 Bedroom - Flat 11 Living Room / Kitchen

Frequency (Hz)	D _{nT} (dB)
100	40.1
125	42.7
160	≥ 50.6
200	≥ 54.9
250	≥ 53.2
315	≥ 58.8
400	≥ 56.2
500	≥ 57.9
630	≥ 59.8
800	≥ 63.2
1000	≥ 64.5
1250	≥ 68.0
1600	≥ 70.4
2000	≥ 63.9
2500	≥ 59.8
3150	≥ 62.1

$D_{nT,w}(C_{tr}) \text{ (dB)} : (C_{tr}) = 61 \text{ (-5)}$

$D_{nT,w} + C_{tr} \text{ (dB)} = 56$

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01



“≥” Shows limit of measurement due to background noise

Tested By: MD Atif Uddin, Shreyas Rajendran



18952-SI-01-AF4

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Impact Sound Insulation Performance According to BS EN ISO 140-7

Field Measurements of Impact Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 12 Bedroom - Retail Space

Frequency (Hz)	L _{nT} (dB)
100	55.4
125	59.2
160	58.0
200	56.9
250	57.9
315	54.9
400	53.5
500	50.8
630	44.5
800	39.2
1000	34.6
1250	33.9
1600	30.2
2000	29.7
2500	24.5
3150	20.4

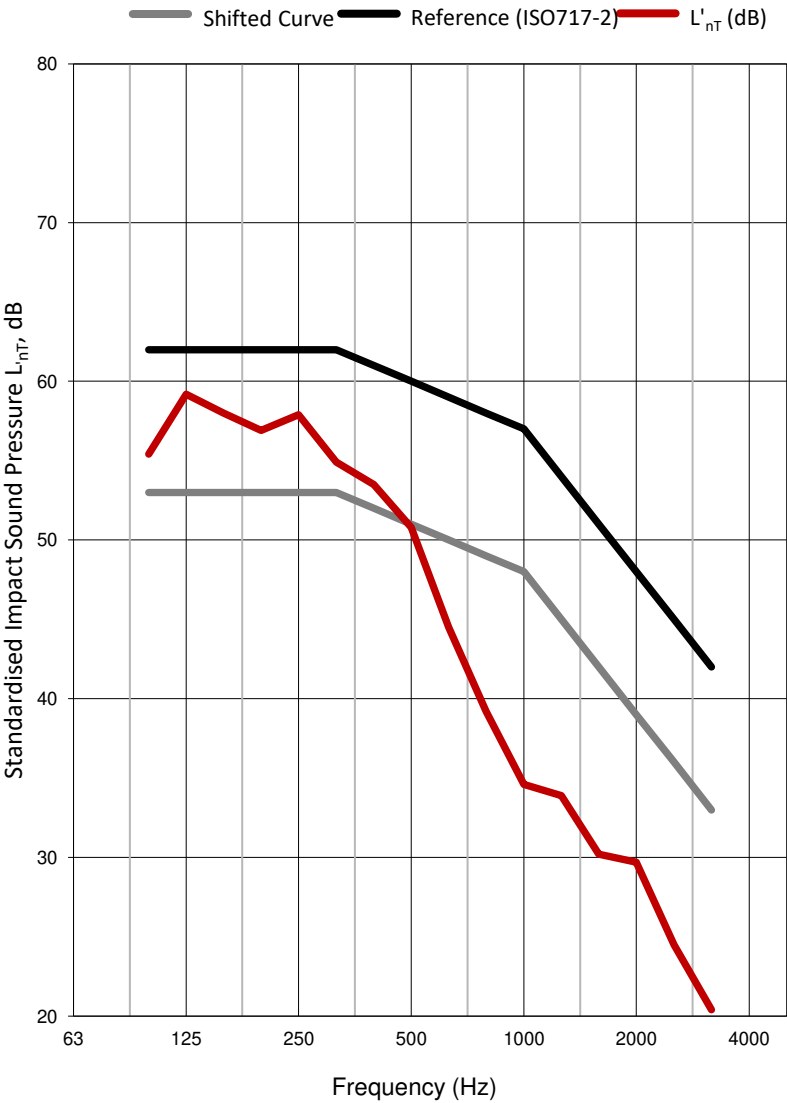
$L_{nT,w} \text{ (dB)} = 51$

According to ISO 717-2. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≤” Shows limit of measurement due to background noise



Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-IF1

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Impact Sound Insulation Performance According to BS EN ISO 140-7

Field Measurements of Impact Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 12 Living Room / Kitchen - Retail Space

Frequency (Hz)	L _{nT} (dB)
100	57.0
125	60.9
160	58.9
200	58.6
250	58.1
315	56.3
400	53.6
500	53.2
630	46.4
800	38.5
1000	34.9
1250	34.8
1600	30.6
2000	27.3
2500	24.5
3150	22.8

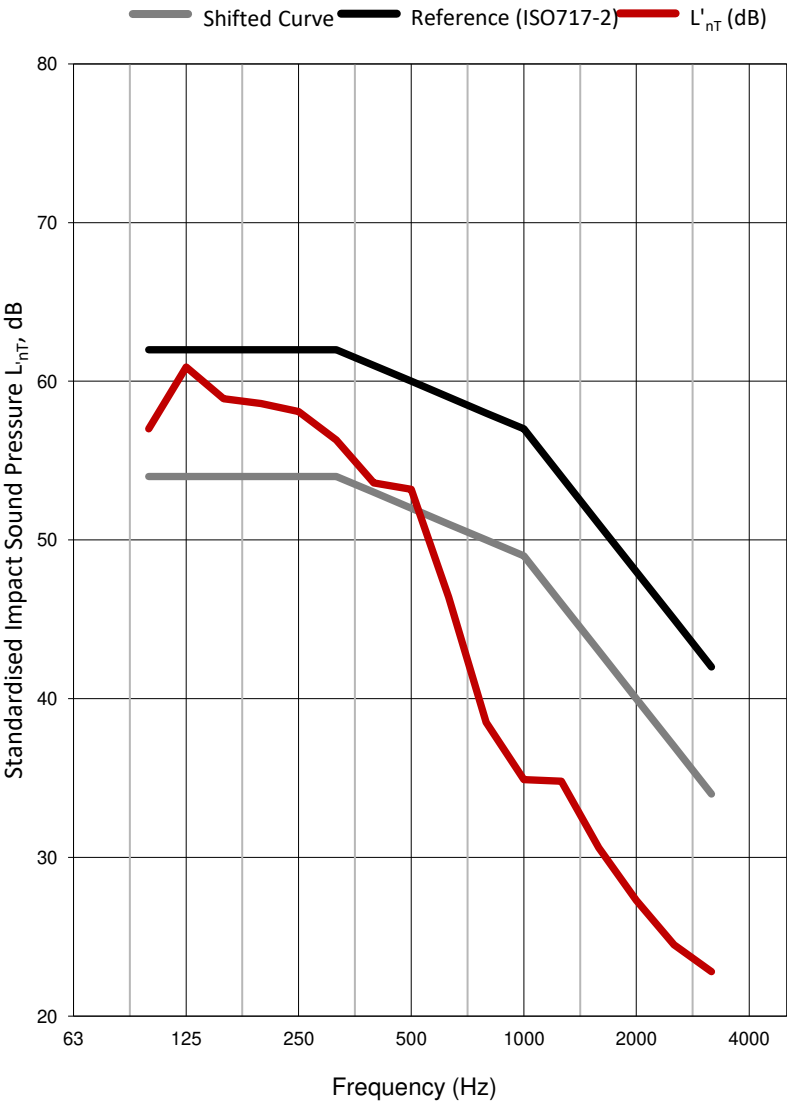
$L_{nT,w} \text{ (dB)} = 52$

According to ISO 717-2. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≤” Shows limit of measurement due to background noise



Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-IF2

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Impact Sound Insulation Performance According to BS EN ISO 140-7

Field Measurements of Impact Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 4 Living Room / Kitchen - Flat 11 Bedroom

Frequency (Hz)	L _{nT} (dB)
100	53.5
125	55.9
160	58.8
200	49.8
250	51.0
315	47.4
400	45.3
500	41.1
630	34.7
800	31.2
1000	27.2
1250	23.6
1600	≤ 21.8
2000	≤ 17.4
2500	≤ 14.8
3150	≤ 13.6

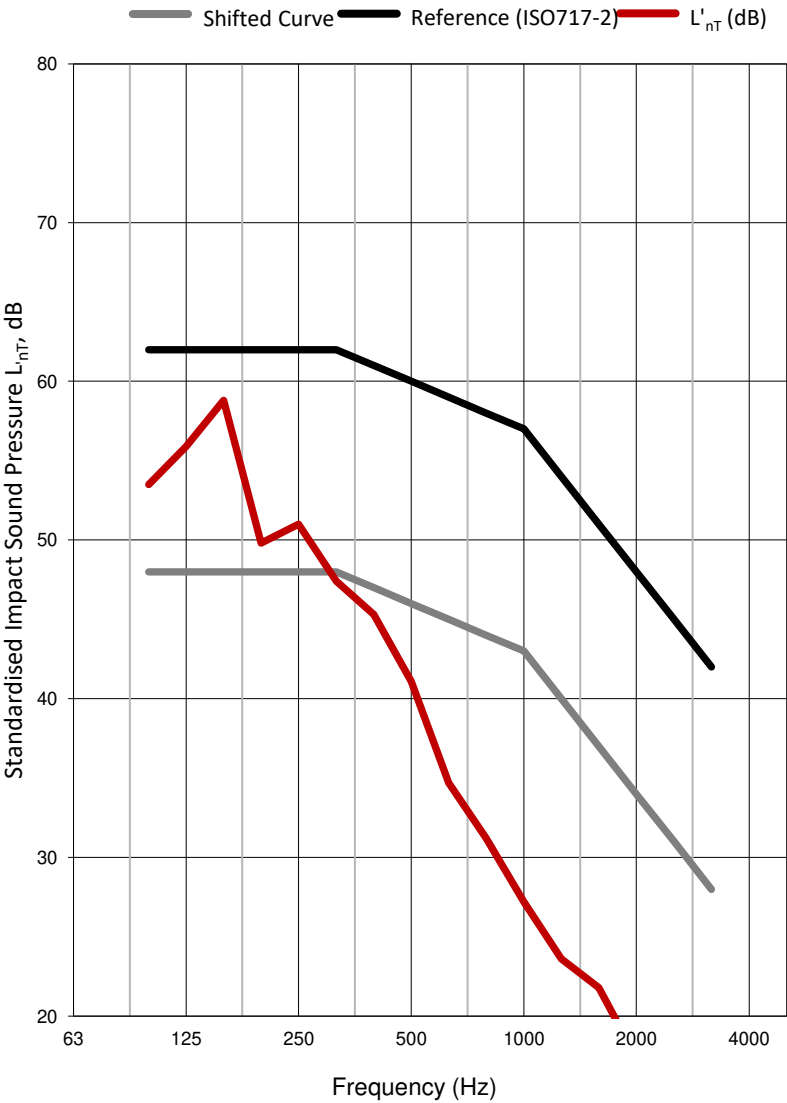
$L_{nT,w} \text{ (dB)} = 46$

According to ISO 717-2. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≤” Shows limit of measurement due to background noise



Tested By: MD Atif Uddin, Shreyas Rajeendran



18952-SI-01-IF3

SOUND INSULATION PERFORMANCE CERTIFICATE

Standardised Impact Sound Insulation Performance According to BS EN ISO 140-7

Field Measurements of Impact Sound Insulation Between Rooms

Site Address: 5-8A Whitehall Parade, London Road, East Grinstead
Client: Falcon Energy
Test Date: 28/04/2025
Test Rooms: Flat 4 Bedroom - Flat 11 Living Room / Kitchen

Frequency (Hz)	L _{nT} (dB)
100	49.7
125	51.8
160	49.1
200	52.0
250	49.7
315	44.9
400	43.1
500	42.0
630	34.5
800	≤ 30.5
1000	≤ 28.3
1250	≤ 25.6
1600	≤ 22.4
2000	≤ 19.4
2500	≤ 16.8
3150	≤ 14.7

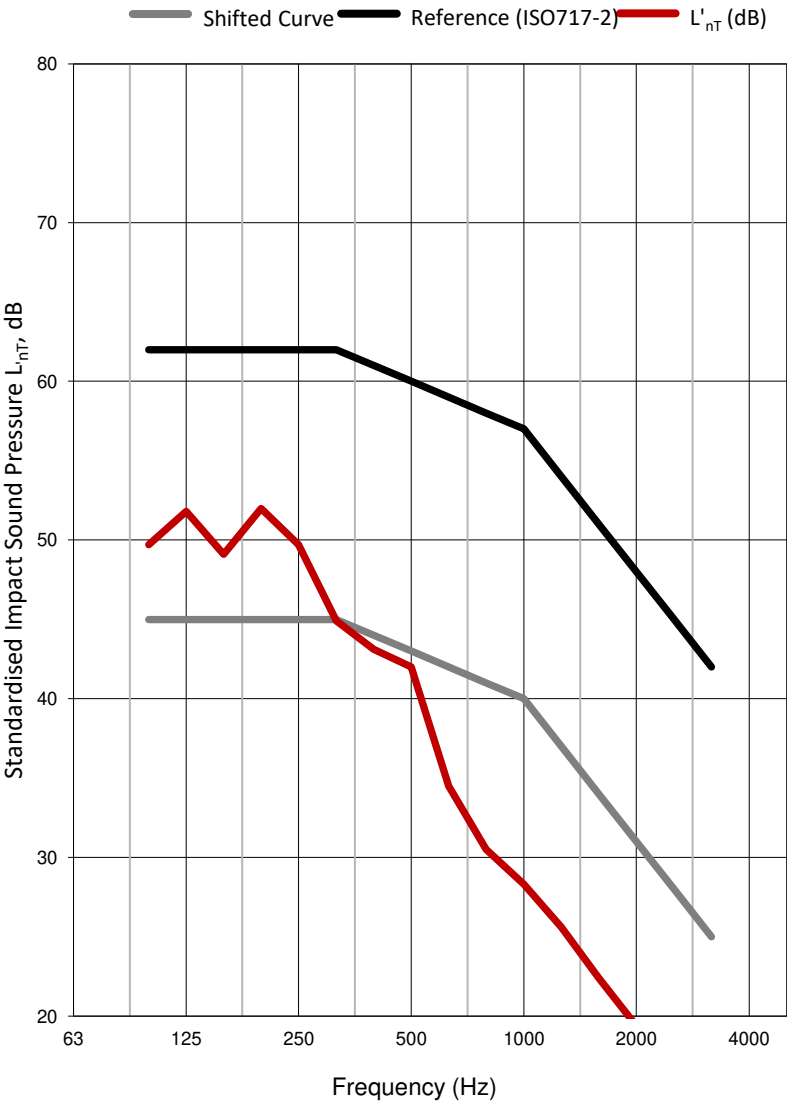
$L_{nT,w} \text{ (dB)} = 43$

According to ISO 717-2. Evaluation based on field measurement results obtained using procedure described in Report 18952-SI-01

“≤” Shows limit of measurement due to background noise



Tested By: MD Atif Uddin, Shreyas Rajendran



18952-SI-01-IF4