

NOVA

ACOUSTICS

Sound Insulation Test Report

Job Number 2930FH
Client Name F Hunter & Sons (Distributors) Limited
Client Address:
House name/number 47
Street Shawdene Road
City/Town Manchester
County Greater Manchester
Post Code M22 4BY

Test Date 08/11/2018
Testing engineer Mr T Bateson

Site Address:
House name/number Flat 1, Flat 2 and Flat 3, 329
Street Palatine Road
City/Town Manchester
County Greater Manchester
Post Code M22 4HH

Type of property Dwelling-flats formed by material change of use
Instrumentation used Kit 1

Authorised By: Mr J Barratt - Gibson, MSc, AMIOA
Date: 08/11/2018
Document Reference: 2930FH
Previous Version Numbers: NA



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No. 8568

1. Executive Summary

NOVA Acoustics Ltd has been commissioned to carry out testing of the sound insulation properties of the separating partitions, and assess whether or not the acoustical performance of the internal building elements is acceptable. The development's sound insulation tests are to be carried out and rated in accordance with the following standards:

The measurement procedure and guidance within Annex B of the Building Regulations Approved Document E 2003 'Resistance to the Passage of Sound' was followed. The results are then assessed in accordance with it in order to indicate compliance. The test and subsequent calculations and assessment have indicated that the separating partitions have performed as follows:

The results tests are summarised below:

Type of partition	Source Room	Receiving Room	Measured Level	Required Level	Passed/ Failed	Test No.
			DnT,w +Ctr dB			
Floor	Flat 3 Living/Kitchen	Flat 2 Bedroom	51	≥43	Passed	2930FH - A
Floor	Flat 1 Bedroom	Flat 3 Bedroom	48	≥43	Passed	2930FH - B
Wall	Flat 1 Bedroom	Flat 2 Kitchen	52	≥43	Passed	2930FH - C
Floor	Retail Unit	Flat 1 Living	45	≥43	Passed	2930FH - D

Table 1

Type of partition	Source Room	Receiving Room	Measured Level	Required Level	Passed/Failed	Test No.
			LnT,w dB			
Floor	Flat 3 Living/Kitchen	Flat 2 Bedroom	56	≤64	Passed	2930FH - E
Floor	Flat 3 Bedroom	Flat 1 Living	58	≤64	Passed	2930FH - F

Table 2

In summary the tested separating partitions between rooms COMPLY with the sound insulation requirements within the current Building Regulations.

Deviations from Building Regulations Part E Annex B:
Room volume <25m³

2.0 The Building Regulations

Approved Document E (2003) edition which incorporates 2004, October 2010 and April 2013 amendments. Sets out guideline sound transmission values that should be achieved under test if acoustical performance is to be deemed acceptable. These values can be found in table 1.0a and 1.0b of Approved Document E.

3.0 Test Methods, Procedures and Equipment

Airborne sound insulation testing uses a Dodecahedral loudspeaker placed in the "source room", which should be the larger of the two rooms when measuring wall and floor insulation. The source is balanced so the average sound pressure levels in adjacent 1/3rd octave bands are no more than 6dB. The source noise level is then measured a minimum of 5 times, measuring each time in a different randomly selected location that is at a minimum distance of 1.0 meter from any wall, floor, ceiling or the speaker. This is repeated for 2 speaker positions. The room on the other side of the partition construction is the "receiver room" and the noise level coming through from the source room is then measured a minimum of 5 times for 2 speaker positions, measuring each time in a different randomly selected location that is at a minimum distance of 1.0 meter from any wall, floor, ceiling. This is repeated for 2 speaker positions.

A difference in source and receiver noise levels is measured and calculated for each wall and floor in accordance with BS EN 140-4:1998. The resulting frequency dependant level differences are converted into "a single number characterising the acoustical performance" using the method given in BS EN ISO 717-1:1997, namely the weighted standardised level difference (DnT,w).

Impact sound insulation test uses a standard tapping which is placed on the floor above a receiving room. The noise level from the machine tapping is then measured in the receiver room a minimum of 5 times measuring each time in a different randomly selected location that is at a minimum distance of 1.0 meter from any wall, floor or ceiling. The process is then repeated a second time with the standard tapping machine rotated 90° and moved to a different position within the room. This level is measured and calculated for each floor in accordance with BS EN ISO 140-7:1998. The results are converted into a single number using the method given in BS EN ISO 717-2:1997 namely the weighted standardised impact sound pressure level (L'nT,w).

4.0 Instrumentation Details:

Kit 1, 2 or 3

CESVA SC420 Sound Level Meter
CESVA CB006 Calibrator
CESVA Dodecahedral Loudspeaker BP012
CESVA Amplifier AP602
CESVA Impact Machine MI006
(Traceable calibration certificates can be supplied on request)

5.0 Calibration

Before and after the survey the measurement apparatus was checked and calibrated to an accuracy showing negligible deviation using the Calibrator.

Appendix A

Calculation of Weighted Standardised Level Difference and/or Calculation of Weighted Standardised Impact Sound Pressure Level
(Please see following pages)

Test date : 08 November 2018

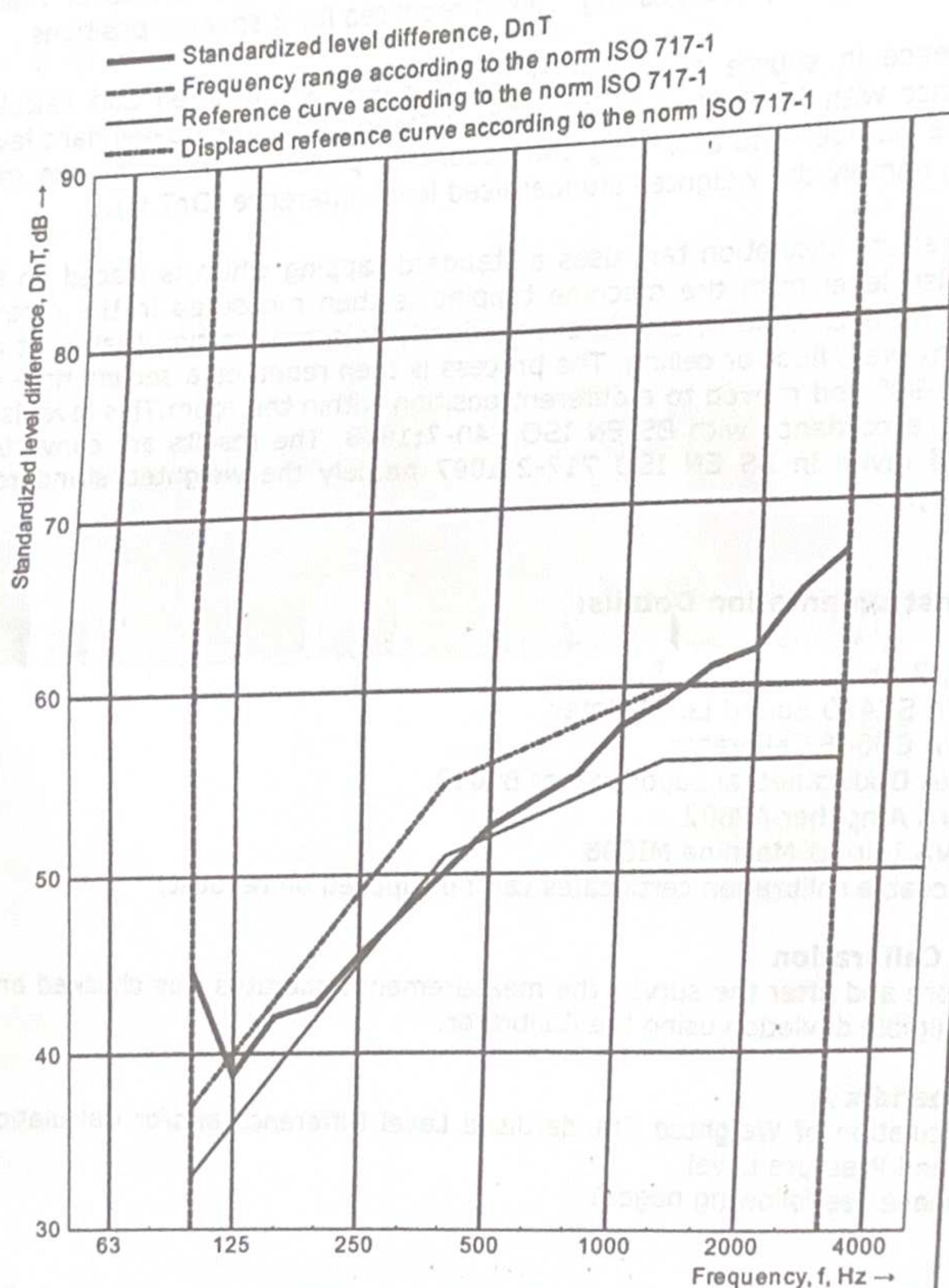
Client : F Hunter and Sons

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

See Pages 1 & 2

Source room volume : 49.00 m³Receiving room volume : 21.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	—
63	—
80	—
100	44.7
125	38.8
160	42.1 *
200	42.8
250	45.5
315	47.8
400	50.1
500	52.5
630	53.9
800	55.3
1000	57.9
1250	59.2
1600	61.0 *
2000	61.9 *
2500	65.1 *
3150	67.2 *
4000	—
5000	—



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w (C;Ctr) = 56 (-1 ; -5) dB;

Evaluation based on in situ measurement
results obtained by an engineering method
(1/3 octave)

No. of test report : 2930FH - A

Name of test institute : NOVA Acoustics Ltd

Date : 08 November 2018

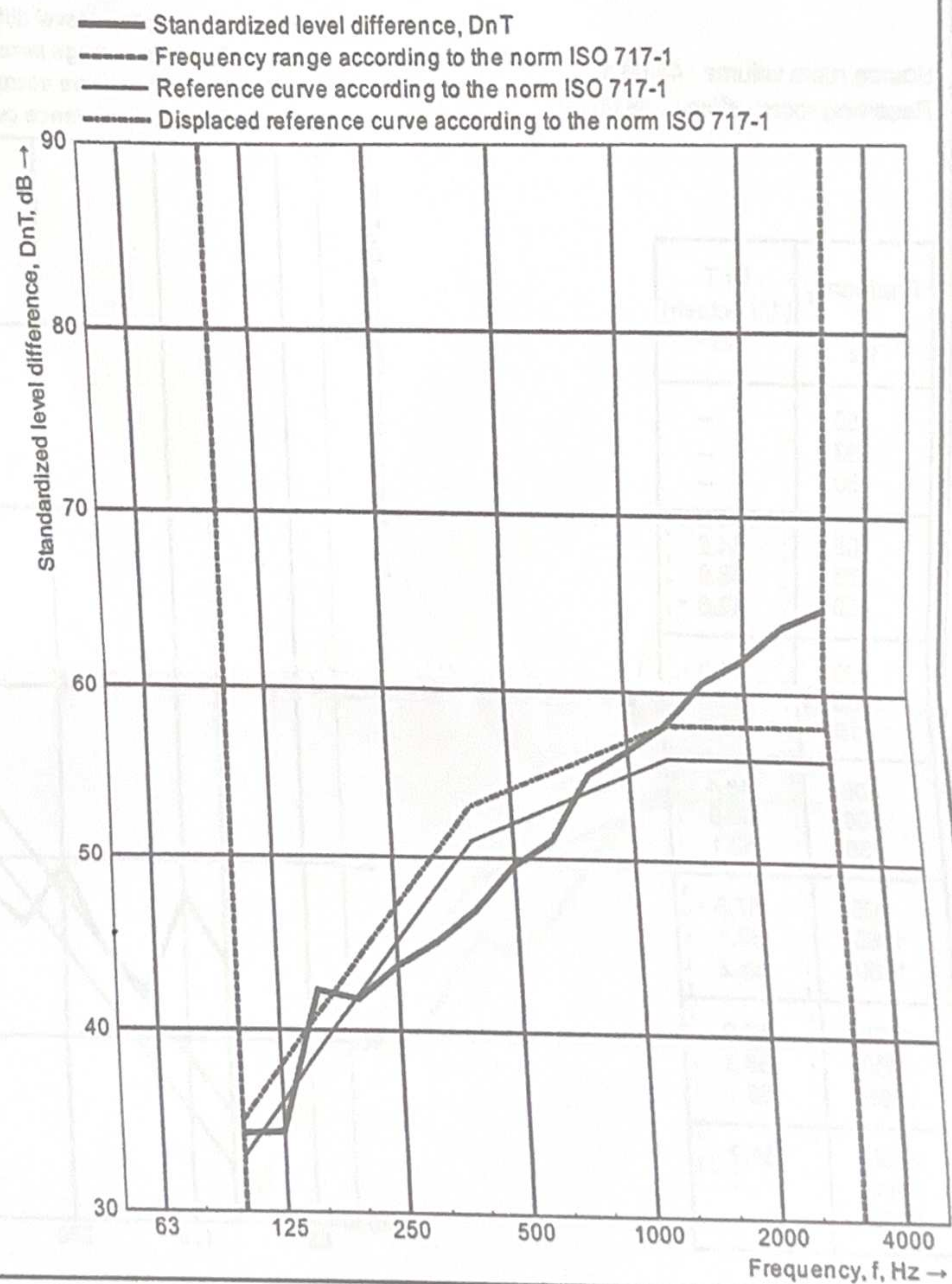
Signature : *A Martin*

Standardized level difference according to Resistance to the passage of sound approved document E Field measurements of airborne sound insulation between rooms

Client : F Hunter and Sons
Test date : 08 November 2018
Description and identification of the building construction and test arrangement, direction of measurement :
See Pages 1 & 2

Source room volume : 44.00 m³
Receiving room volume : 21.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	34.3
125	34.4
160	42.3
200	41.8
250	43.7
315	45.1
400	46.9
500	49.5
630	51.1
800	55.0
1000	56.4
1250	58.0
1600	60.6
2000	61.9
2500	63.8
3150	64.8 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1
DnT,w (C;Ctr) = 54 (-2 ; -6) dB;
Evaluation based on in situ measurement results obtained by an engineering method (1/3 octave)

No. of test report : 2930FH - B
Date : 08 November 2018
Name of test institute : NOVA Acoustics Ltd
Signature : A Martin

Standardized level difference according to Resistance to the passage of sound approved document E

Field measurements of airborne sound insulation between rooms

Test date : 08 November 2018

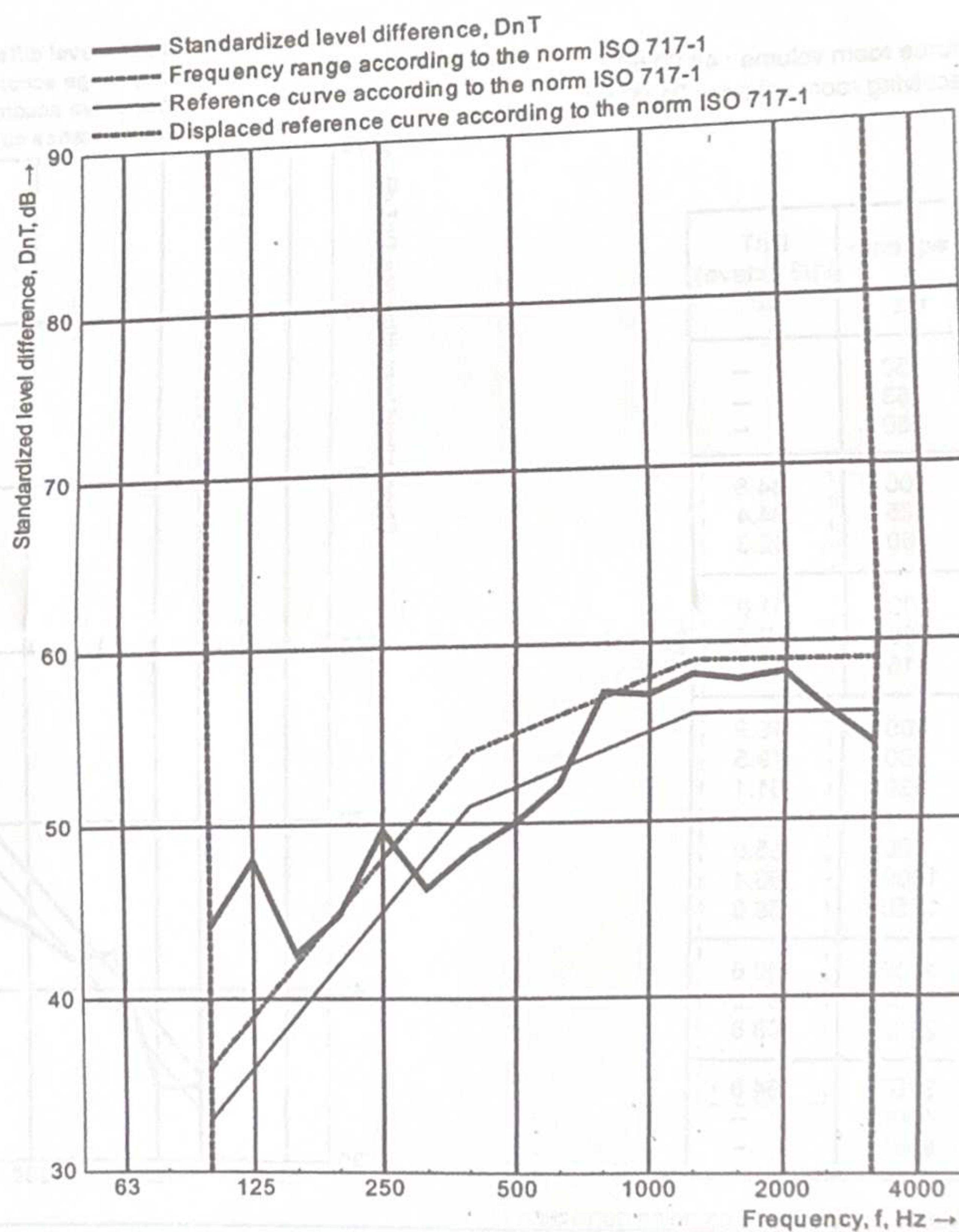
Client : F Hunter and Sons

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

See Pages 1 & 2

Source room volume : 44.00 m³
 Receiving room volume : 38.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	—
63	—
80	—
100	44.2
125	48.0
160	42.6 *
200	44.8
250	49.6
315	46.3
400	48.4
500	50.0
630	52.1
800	57.3 *
1000	57.1
1250	58.2
1600	57.9
2000	58.3
2500	56.1
3150	54.2
4000	—
5000	—



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w (C;Ctr) = 55 (-1 ; -3) dB;

Evaluation based on in situ measurement
 results obtained by an engineering method
 (1/3 octave)

No. of test report : 2930FH - C

Date : 08 November 2018

Name of test institute : NOVA Acoustics Ltd

Signature : *A Martin*

Standardized level difference according to Resistance to the passage of sound approved document E Field measurements of airborne sound insulation between rooms

Client : F Hunter and Sons

Test date : 08 November 2018

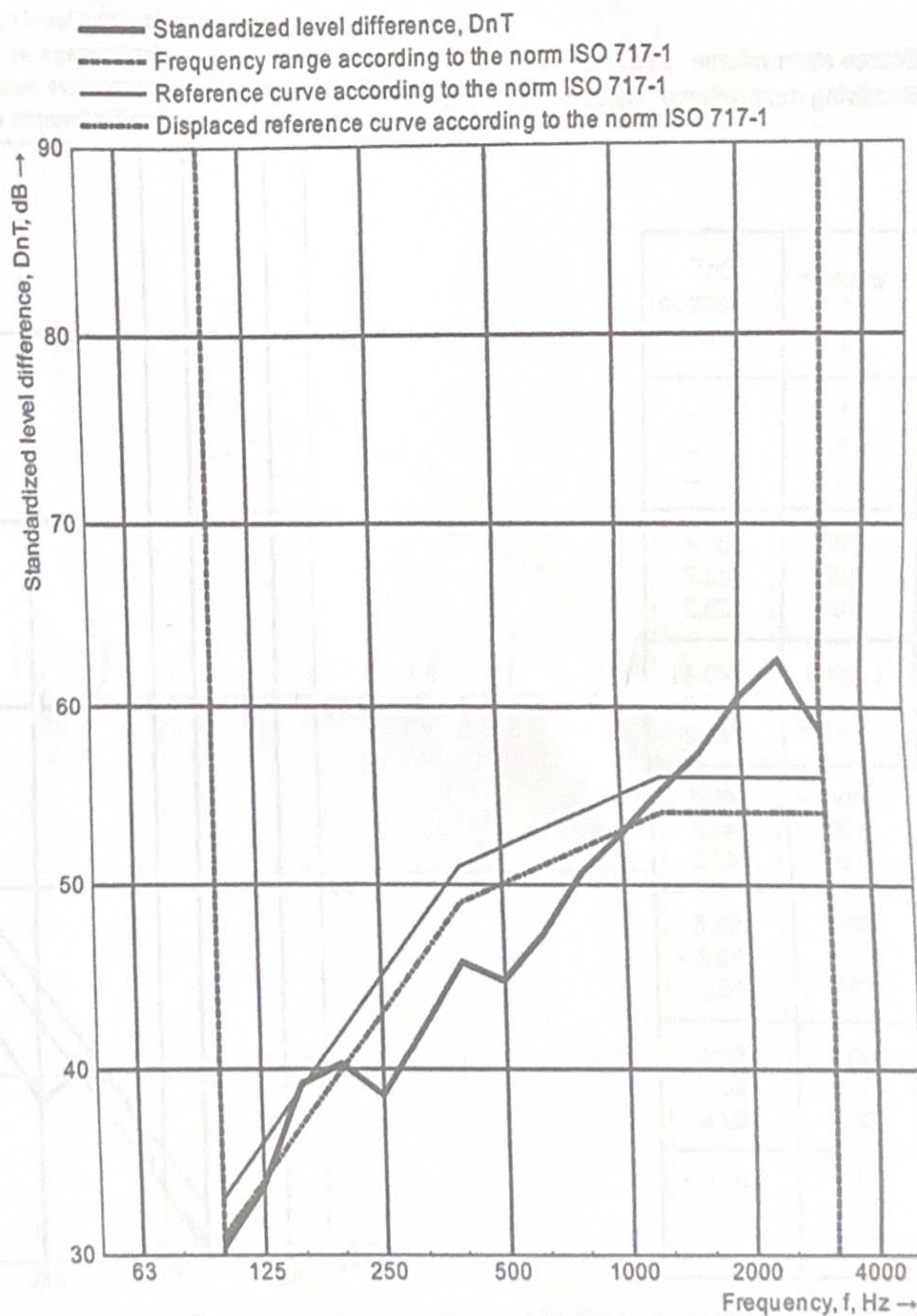
Description and identification of the building construction and test arrangement, direction of measurement :

See Pages 1 & 2

Source room volume : 276.00 m³

Receiving room volume : 38.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	--
63	--
80	--
100	30.4
125	33.7
160	39.2
200	40.3
250	38.6
315	42.2
400	45.8
500	44.8
630	47.3
800	50.7
1000	52.8 *
1250	55.2
1600	57.4
2000	60.5 *
2500	62.6 *
3150	58.6 *
4000	--
5000	--



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w (C;Ctr) = 50 (-1 ; -5) dB;

Evaluation based on in situ measurement
results obtained by an engineering method
(1/3 octave)

No. of test report : 2930FH - D

Name of test institute : NOVA Acoustics Ltd

Date : 08 November 2018

Signature : *A Martin*

Standardized level difference according to Resistance to the passage of sound approved document E

Field measurements of airborne sound insulation between rooms

Client : F Hunter and Sons

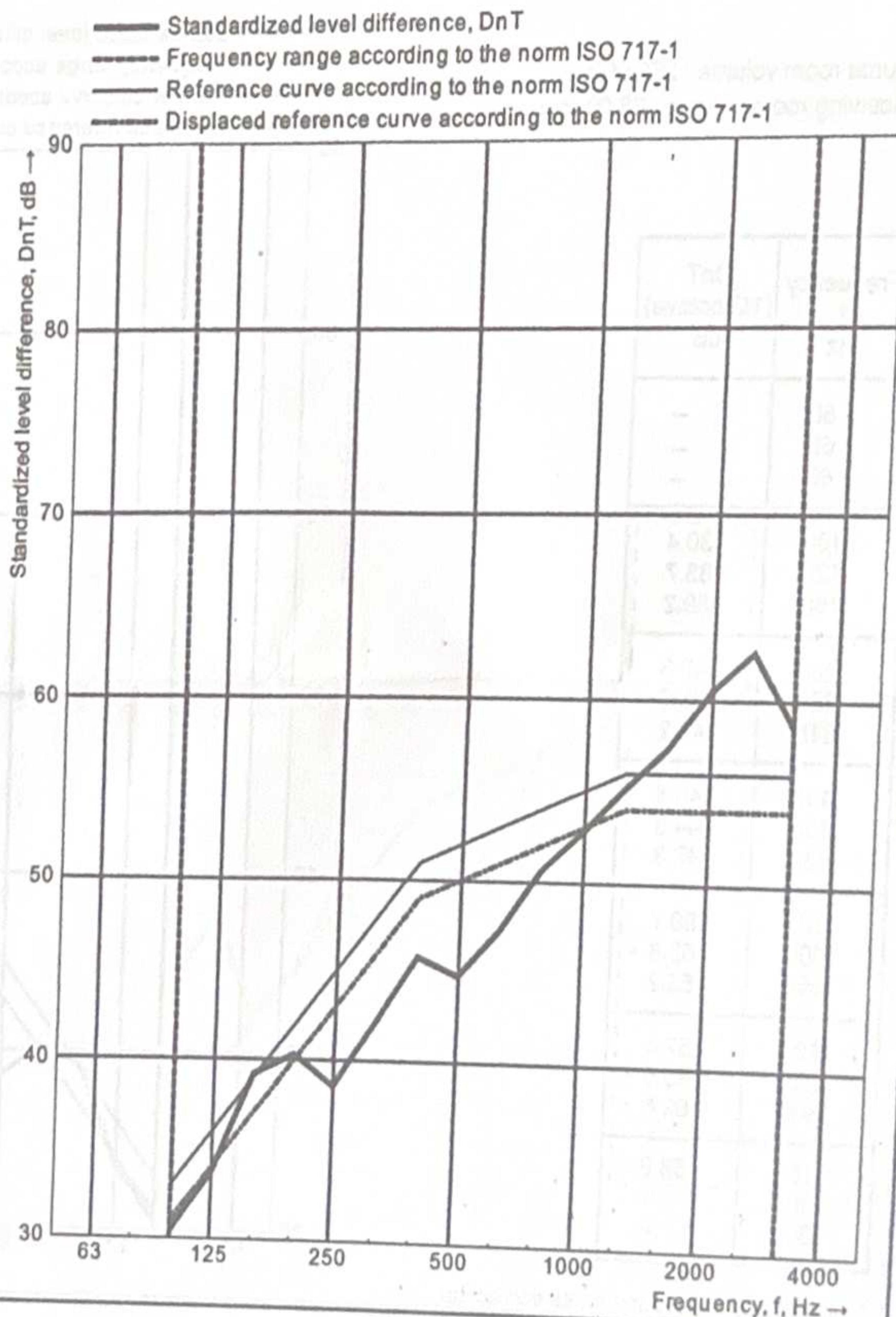
Test date : 08 November 2018

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

See Pages 1 & 2

Source room volume : 276.00 m³Receiving room volume : 38.00 m³

Frequency f Hz	DnT (1/3 octave) dB
50	—
63	—
80	—
100	30.4
125	33.7
160	39.2
200	40.3
250	38.6
315	42.2
400	45.8
500	44.8
630	47.3
800	50.7
1000	52.8 *
1250	55.2
1600	57.4
2000	60.5 *
2500	62.6 *
3150	58.6 *
4000	—
5000	—



* Maximum background noise correction

Rating according to ISO 717-1

DnT,w (C;Ctr) = 50 (-1 ; -5) dB;

Evaluation based on in situ measurement
results obtained by an engineering method
(1/3 octave)

No. of test report : 2930FH - D

Date : 08 November 2018

Name of test institute : NOVA Acoustics Ltd

Signature : *A Martin*

Standardized impact sound pressure level according to Resistance to the passage of sound approved
document E
Field measurements of impact sound insulation of floors

Client : F Hunter and Sons

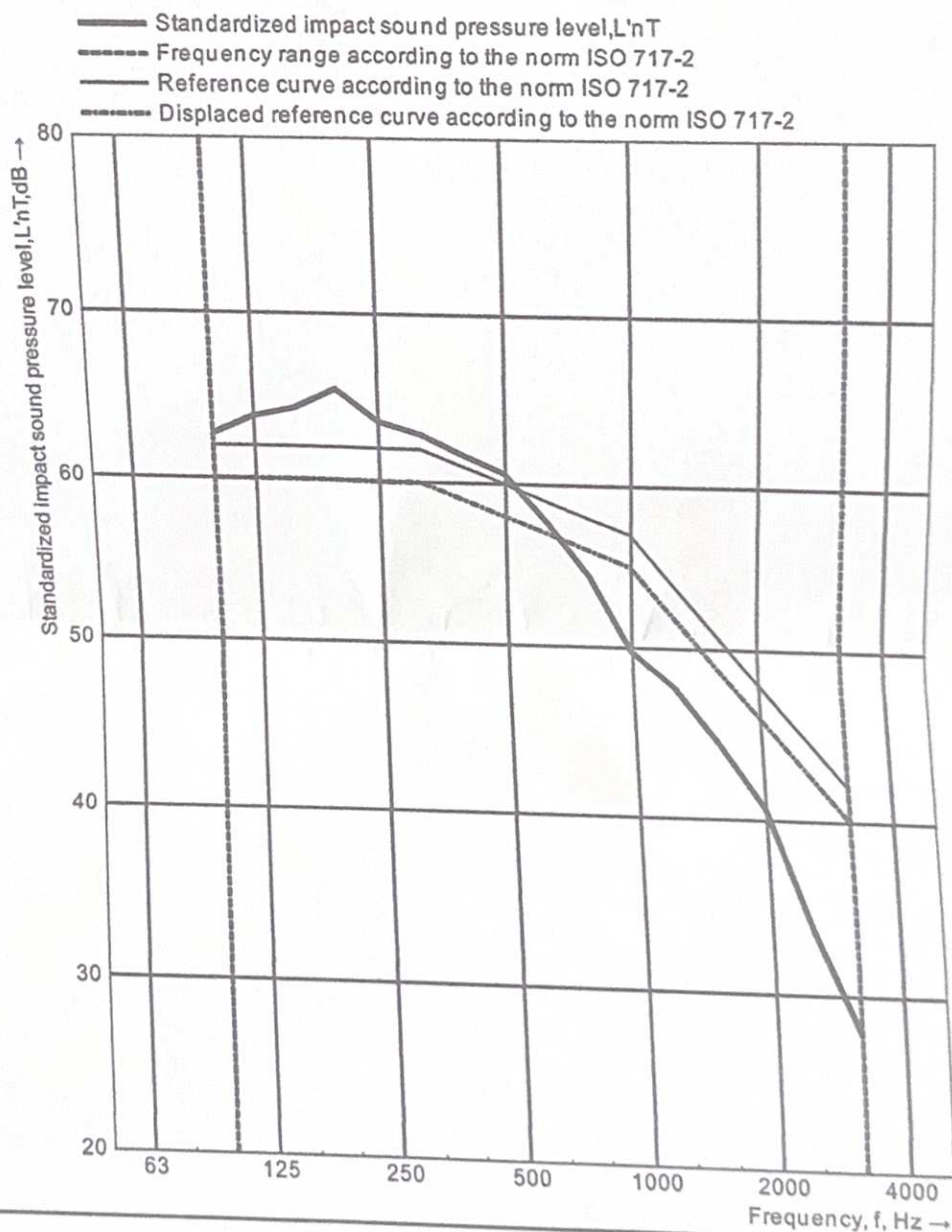
Test date : 08 November 2018

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

See Pages 1 & 2

Receiving room volume : 38.00 m³

Frequency f Hz	L'nT (1/3 octave) dB
50	--
63	--
80	--
100	62.7
125	63.8
160	64.3
200	65.5
250	63.6
315	62.9
400	61.7
500	60.6
630	57.7
800	54.4
1000	49.8
1250	47.7
1600	44.4
2000	40.7
2500	33.7
3150	27.8
4000	--
5000	--



Rating according to ISO 717-2

L'nT,w (Ci) = 58 (0) dB;

Evaluation based on in situ measurement results obtained by an engineering method

No. of test report : 2930FH - F

Date : 08 November 2018

Name of test institute : NOVA Acoustics Ltd

Signature : *A Martin*