Sound Insulation Test Report

Job Number	6437JM
Client Name	MY Construction
Client Address:	
House name/number	28
Street	St Albans Lane
City/Town	London
County	Greater London
Post Code	NW11 7QE
Test Date	09/08/2021
Testing engineer	Mr J Findell, BSc
Site Address:	
House name/number	25, 26
Street	Reddington Gardens
City/Town	London
County	Greater London
Post Code	NW3 7RX
Type of property	Purpose built dwelling-houses
Instrumentation used	Kit 3

8568

NOVA Acoustics is a UKAS accredited testing laboratory No. 8568 for Sound Insulation Testing

Authorised By:	Mr P Soler, BEng, MIOA
Date:	09/08/2021
Document Reference:	6437JM
Previous Version Numbers:	NA

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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.**
			$D_{nT,w}$ +C_{tr} dB			
Wall	25 Basement Living	26 Basement Living	69	≥45	Passed	6437JM-A
Wall	25 LG Kitchen	26 LG Kitchen	61	≥45	Passed	6437JM-B

Table 1

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 Annexe B:

None

2.0 The Building Regulations
Approved Document E (2003) edition which incorporates 2004, 2010, 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 ($D_{nT,w}$).

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 2 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 further 3 times 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 SC310 or SC420 Sound Level Meter
CESVA CB005 or 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.

6.0 Disclaimer
The customer has provided the following information; client name, client address, site address, type of property and source / receiving room names. The laboratory shall be responsible for all the information provided in the report, except when information is provided by the customer. Information supplied by the customer can affect the validity of results. Where the laboratory has not been responsible for the sampling stage (e.g. the sample has been provided by the customer), the laboratory shall state in the report that the results apply to the sample as received.

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

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

Field measurements of airborne sound insulation between rooms

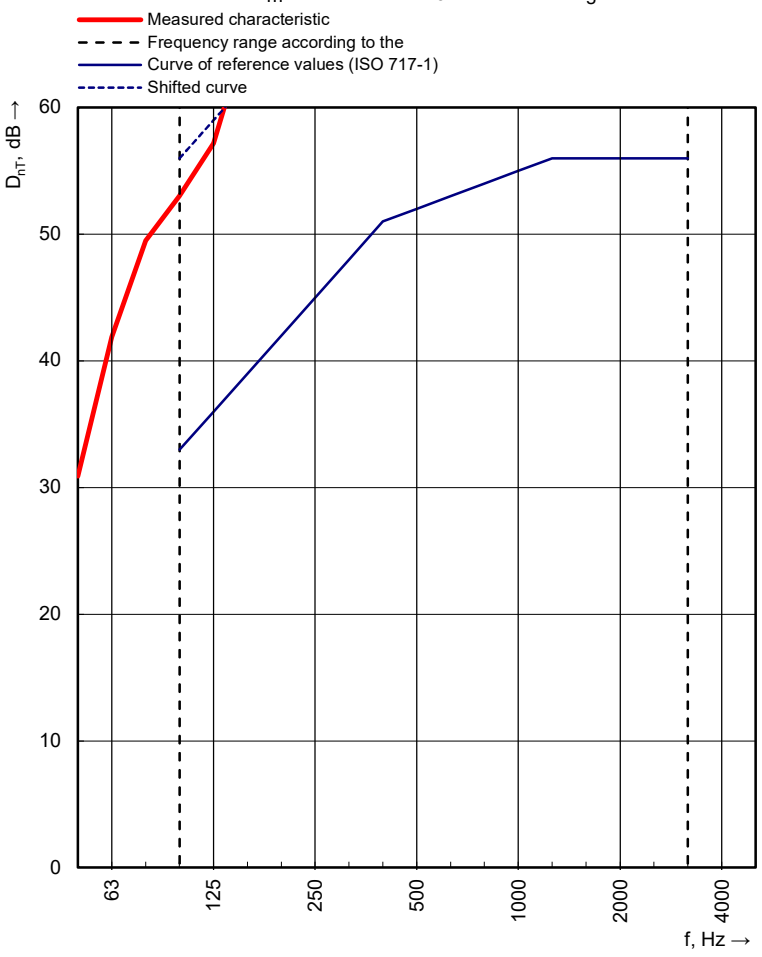
Date of test: 2021-08-10

Client MY Construction

Description: See pages 1 & 2

Area of common partition: 15.0 m^2 Note:
Receiving room volume: 156.0 m^3 Name: 26 Basement Living
Source room volume: 228.0 m^3 Name: 25 Basement Living

Frequency *f* Hz	D_{nT} (1/3 octave) dB	
50	30.9	
63	41.9	
80	49.5	*
100	53.0	
125	57.2	
160	66.1	*
200	66.4	*
250	71.1	*
315	66.0	*
400	72.2	*
500	73.6	*
630	74.7	*
800	75.5	*
1000	74.9	*
1250	77.6	*
1600	76.7	*
2000	78.2	*
2500	80.4	*
3150	78.6	*
4000	80.2	*
5000	80.2	*



Rating according to ISO 717-1

$D_{nT,w}(C; Ctr)$ = **75 (-1 ; -6) dB** $C_{50\text{-}3150}$= -7 dB $C_{50\text{-}5000}$= -6 dB $C_{100\text{-}5000}$= 0 dB
$C_{tr,50\text{-}3150}$= -20 dB $C_{50\text{-}5000}$= -20 dB $C_{tr,100\text{-}5000}$= -6 dB

Evaluation based on field measurement results obtained by an engineering method

No. of test report: 6437JM-A Name of test institute: NOVA Acoustics Ltd

Date: 2021-08-10 Signature: P.Soler

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

Field measurements of airborne sound insulation between rooms

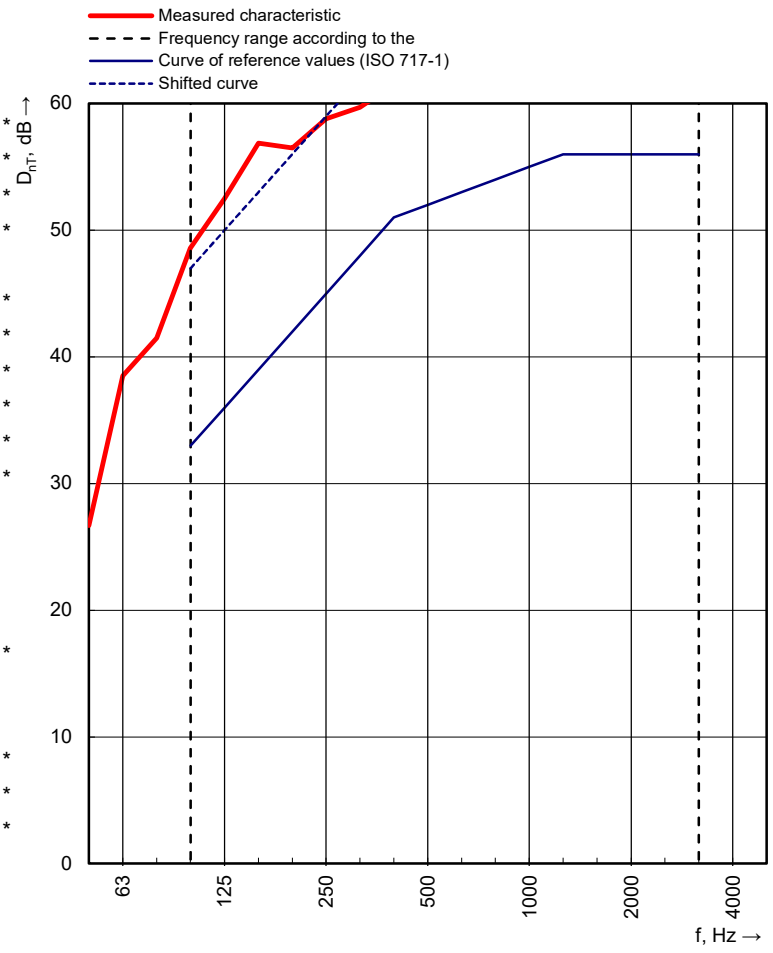
Date of test: 2021-08-10

Client MY Construction

Description: See pages 1 & 2

Area of common partition: 19.0 m^2 Note:
Receiving room volume: 159.0 m^3 Name: 26 LG Kitchen
Source room volume: 161.0 m^3 Name: 25 LG Kitchen

Frequency *f* Hz	D_{nT} (1/3 octave) dB	
50	26.7	*
63	38.5	*
80	41.5	*
100	48.6	*
125	52.5	
160	56.9	*
200	56.5	*
250	58.8	*
315	59.7	*
400	61.5	*
500	62.2	*
630	63.0	
800	64.3	
1000	67.0	
1250	68.4	
1600	67.8	*
2000	69.9	
2500	72.6	
3150	73.8	*
4000	75.6	*
5000	76.8	*



Rating according to ISO 717-1

$D_{nT,w}(C; Ctr)$ = **66 (-1 ; -4) dB** $C_{50\text{-}3150}$= -4 dB $C_{50\text{-}5000}$= -3 dB $C_{100\text{-}5000}$= 0 dB
$C_{tr,50\text{-}3150}$= -15 dB $C_{50\text{-}5000}$= -15 dB $C_{tr,100\text{-}5000}$= -4 dB

Evaluation based on field measurement results obtained by an engineering method

No. of test report: 6437JM-B Name of test institute: NOVA Acoustics Ltd

Date: 2021-08-10 Signature: P.Soler