**Sound Insulation Test Report**

| | |
|---|---|
| Job Number | 4942CC |
| Client Name | Naj Hussain |
| Client Address: | |
| House name/number | No. 78 |
| Street | Mary Street |
| City/Town | Scunthorpe |
| County | Lincolnshire |
| Post Code | DN15 7PX |
| | |
| Test Date | 25/08/2020 |
| Testing engineer | Mr T Bateson |
| | |
| Site Address: | |
| House name/number | No. 78 |
| Street | Mary Street |
| City/Town | Scunthorpe |
| County | Lincolnshire |
| Post Code | DN15 7PX |
| | |
| Type of property | Dwelling-flats formed by material change of use |
| Instrumentation used | Kit 2 |

8568

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

| | |
|---|---|
| Authorised By: | Mr P Soler, BEng, AMIOA |
| Date: | 25/08/2020 |
| Document Reference: | 4942CC |
| 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** | | | |
| Floor | Comercial Unit | 78 Bedroom 1 | 51 | ≥43 | Passed | 4942CC - A |
| Floor | Comercail Unit | 78 Bedroom 2 | 51 | ≥43 | Passed | 4942CC - 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:*

Testing into non-habitable rooms

**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 1/3$^{rd}$ 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 Standerdised 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

Client : Naj Hussain

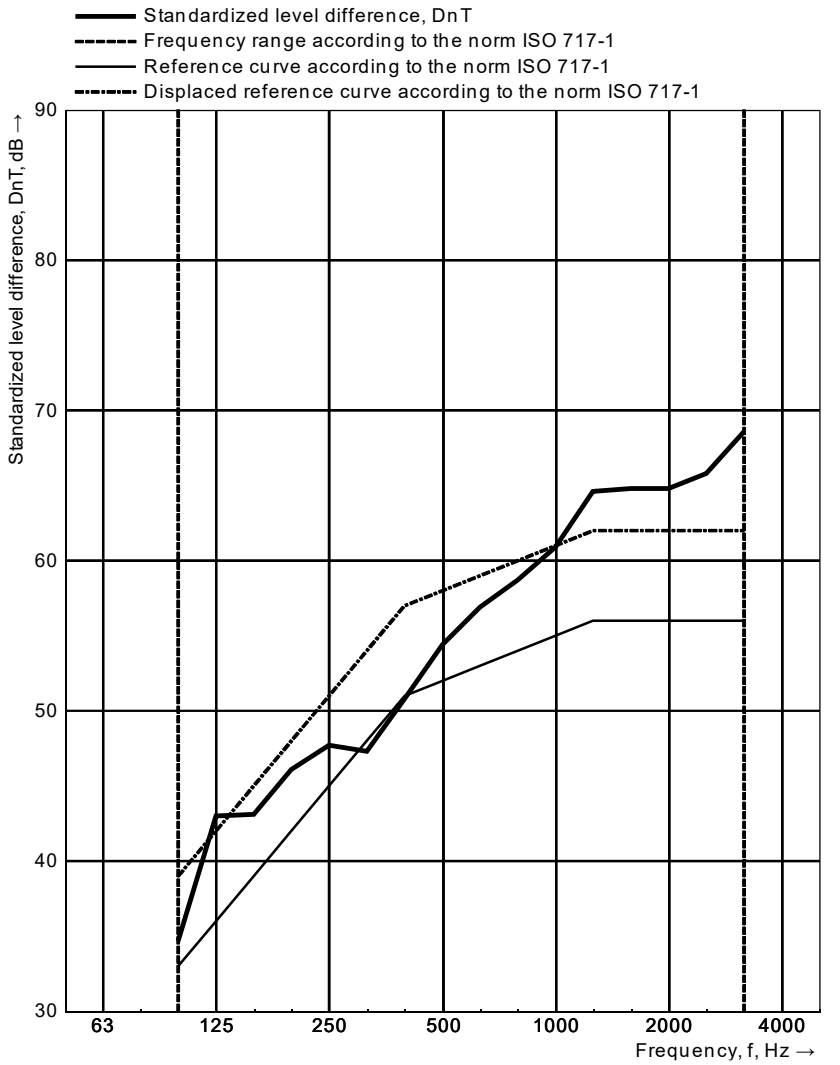
Test date : 25 August 2020

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

See Pages 1 & 2

Source room volume : 29.00 m³
Receiving room volume : 43.00 m³

| Frequency f Hz | DnT (1/3 octave) dB |
|---|---|
| 50 | -- |
| 63 | -- |
| 80 | -- |
| 100 | 34.7 |
| 125 | 43.0 |
| 160 | 43.1 |
| 200 | 46.1 |
| 250 | 47.7 |
| 315 | 47.3 |
| 400 | 50.8 |
| 500 | 54.4 |
| 630 | 56.9 |
| 800 | 58.7 |
| 1000 | 60.9 |
| 1250 | 64.6 |
| 1600 | 64.8 |
| 2000 | 64.8 |
| 2500 | 65.8 |
| 3150 | 68.6 |
| 4000 | -- |
| 5000 | -- |




Rating according to ISO 717-1

DnT,w (C;Ctr) = 58 (-2 ; -7) dB;

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

No. of test report : 4942CC - A

Name of test institute : NOVA Acoustics Ltd

Date : 25 August 2020

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

Client : Naj Hussain

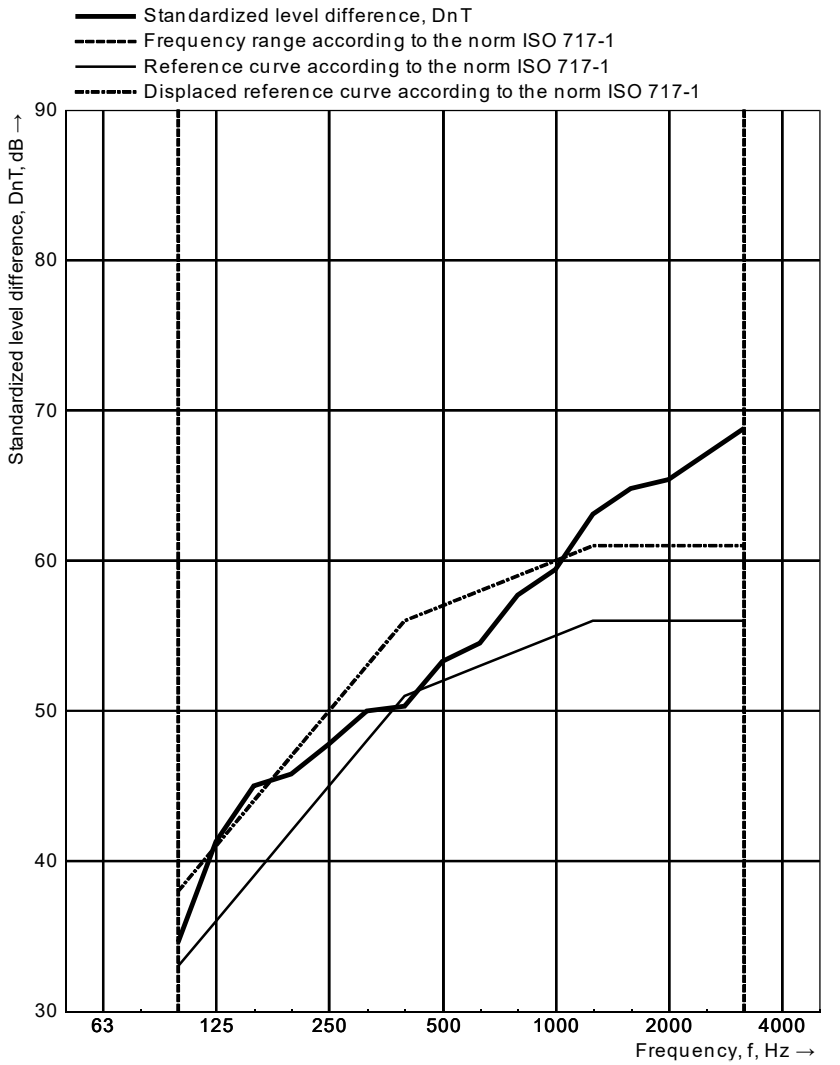
Test date : 25 August 2020

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

See Pages 1 & 2

Source room volume : 30.00 m³
Receiving room volume : 27.00 m³

| Frequency f Hz | DnT (1/3 octave) dB |
|---|---|
| 50 | -- |
| 63 | -- |
| 80 | -- |
| 100 | 34.6 |
| 125 | 41.3 |
| 160 | 45.0 |
| 200 | 45.8 |
| 250 | 47.8 |
| 315 | 50.0 |
| 400 | 50.3 |
| 500 | 53.3 |
| 630 | 54.5 |
| 800 | 57.7 |
| 1000 | 59.4 |
| 1250 | 63.1 |
| 1600 | 64.8 |
| 2000 | 65.4 |
| 2500 | 67.1 |
| 3150 | 68.8 |
| 4000 | -- |
| 5000 | -- |




Rating according to ISO 717-1

DnT,w (C;Ctr) = 57 (-1 ; -6) dB;

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

No. of test report : 4942CC - B

Name of test institute : NOVA Acoustics Ltd

Date : 25 August 2020

Signature : P. Soler