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3 December 2024

19719-SI-01

Airborne Sound Insulation Test Report

Project Number
19719

Issued For
Sundip Patel C\ Sixty Two Ltd.

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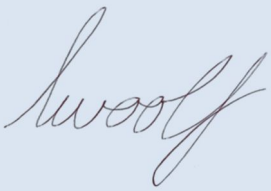
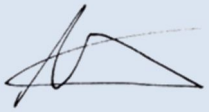
LIST OF ATTACHMENTS

Issue	Date of Issue	Author	Reviewed	Authorised
0	03/12/2024			
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Issue	Comment
0	First Issue

1.0 INTRODUCTION

Clement Acoustics Ltd, 1B(c) Yukon Road, London SW12 9PZ has been commissioned by Sundip Patel C\ Sixty Two Ltd. to undertake pre-completion sound insulation tests in the First Floor, 22 Hanway Street, London. Testing was conducted to satisfy the planning conditions of the London Borough of Camden Council (Council). It is understood that Council has requested that the airborne sound insulation performance of the floor separating the ground and first floor of the building is considered.

The development is a material change of use property consisting of the redevelopment of the current first-floor bar into a residential studio flat. A members club lounge bar currently operates on the ground floor below the proposed residential flat.

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

The sound insulation tests detailed in this report were undertaken by Lachlan Woolf, MAAS, supervised by John Smethurst, MIOA on 3 December 2024 in full accordance with BS EN ISO 140-4: 1998 “Field measurements of airborne sound insulation between rooms and the procedures described in Annex B of Approved Document E (ADE).

2.0 METHODOLOGY

2.1 Airborne Tests

High volume “white” noise was generated from two loudspeakers 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 each of two positions.

The same measurement procedure was followed in the receiver room.

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 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.

2.3 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 urban hum and pedestrian noise from Hanway Street and 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
Active Loudspeaker	RCF ART 310A	GEX05725
Calibrator	Svantek SV33B	83120

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.

Clause 0.8 of ADE states:

> *'A higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations the appropriate level of sound insulation will depend on the noise generated in the communal or non-domestic space. Specialist advice may be needed to establish if a higher standard of sound insulation is required and, if so, determine the appropriate level.'*

Given the nature of the ground floor commercial premise, which can potentially generate particularly high levels of entertainment and amplified noise, we would recommend that complying with the minimum requirements of ADE may not provide a suitable level of protection. As such, it is proposed that a more stringent airborne sound insulation performance across the shared party floor is sought to mitigate the risk of noise intrusion from activities within the ground floor premise.

For a commercial use of this type, the recommended target for airborne sound insulation is shown in Table 4.1.

Criterion	Required airborne sound insulation performance
Minimum requirements of ADE for material change of use development	$D_{nT,w}$ + C_{tr} 43 dB
Proposed criterion	**$D_{nT,w}$ + C_{tr} 53 dB**

Table 4.1 Proposed airborne sound insulation criterion

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
Floor	Ground Floor Members Lounge (60 m^3)	Level 1 Proposed Residential (149 m^3)	57 m^2	Not Known at Time of Testing

Table 5.1 Room details

All the procedures described in Annex B of ADE have been followed with the exceptions described in Table 5.2.

Section of Annex B	Annex B Requirement	Reason For Non Compliance	Procedure Undertaken
B2.12	Tests should be conducted in completed but unfurnished rooms or available spaces in the case of properties sold before fitting out.	Test rooms were furnished at time of testing.	Undertook tests and reported furnished nature of rooms.

Table 5.2 List of ADE 2003 Annex B non-compliance

6.0 RESULTS

The results of testing are summarised in the table below. For airborne tests, the higher 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.

6.1 Airborne Floor Tests

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

For this change of use development, the proposed requirement for separating floors is to achieve an airborne sound insulation performance of $D_{nT,w} + C_{tr} \geq 53$ dB.

Certificate Reference	Source	Receiver	Test Result	Satisfies requirement?
19719-SI-01-AF1	Ground Floor Members Lounge	Level 1 Proposed Residential	$D_{nT,w} + C_{tr}$ 55 dB	Satisfies

Table 6.1 Airborne floor test results

7.0 CONCLUSION

Sound insulation tests were undertaken at First Floor, 22 Hanway Street, London to satisfy the planning conditions of Council.

Ratings of the airborne sound insulation performance of the floor 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.

The airborne performance of the floor tested as listed in Table 6.1 meets the proposed airborne noise requirements.

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: **22 Hanway Street, London**
Client: Sundip Patel C\ Sixty Two Ltd.
Test Date: 03/12/2024
Test Rooms: **Ground Floor Members Lounge - Level 1 Proposed Residential**

Frequency (Hz)	D_{nT} (dB)
100	**39.8**
125	**44.4**
160	**49.2**
200	≥ **47.3**
250	**50.4**
315	≥ **54.0**
400	≥ **54.0**
500	≥ **55.1**
630	≥ **55.3**
800	≥ **63.0**
1000	≥ **61.7**
1250	≥ **64.1**
1600	≥ **66.7**
2000	≥ **65.2**
2500	≥ **64.8**
3150	≥ **66.4**

"≥" Shows limit of measurement due to background noise

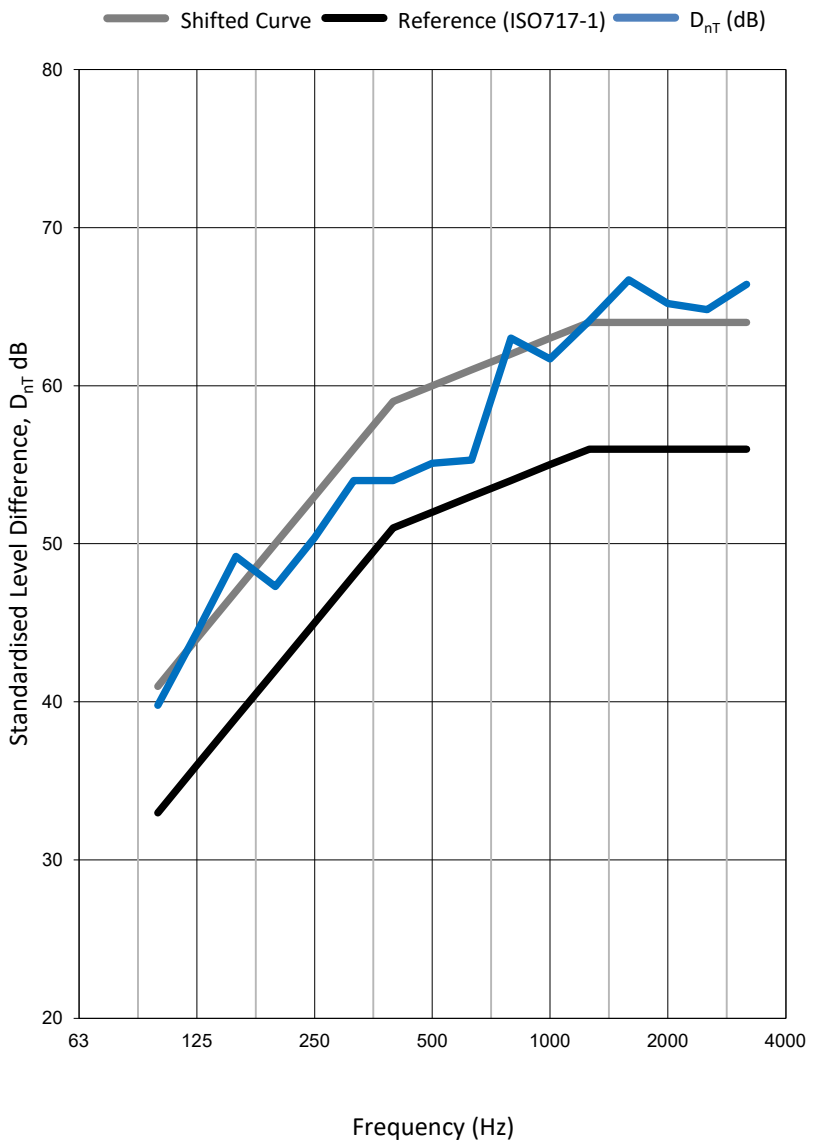
$D_{nT,w}$ (C_{tr}) (dB) : (C_{tr}) = 60 (-5)

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

According to ISO 717-1. Evaluation based on field measurement results obtained using procedure described in Report 19719-SI-01

UKAS TESTING 7688

Tested By: Lachlan Woolf / John Smethurst



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