RED DAY PROPERTIES LTD

31 AGNES ROAD
BARNSLEY, S70 1NJ

SOUND INSULATION PRE-COMPLETION TEST REPORT

Report Reference	Date of Issue	Prepared by	Reviewed & Approved by
ENS Ref: PCT/10244/22/10347 ANC Ref: 144/74126	21/02/2022	Richard Whitaker	David Poulton
			

Notice to Building Control Officer

Certification of Test Results

ANC operates an online, secure, paperless certification system for sound insulation tests.

The online verification (certification) system means that Building Control Bodies will need to follow the steps below to verify the results quoted in the relevant test report:

1. Go to the ANC secure server at www.theanc.co.uk
2. Navigate to the ADvANCE page which links to the ANC site available for use by BCOs.
3. Enter the following in the spaces provided:

   Task Number: **74126** Task Password: **2WDQXJ**
4. Select role "Building Control Officer" and press "Login"
5. You will then see a summary list of results of all the Tests undertaken to date for this project (Task) as held on the secure primary server and you can print this table for your records.

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SOUND INSULATION PRE-COMPLETION TEST REPORT

SECTION 1 INTRODUCTION

1.1 Environmental Noise Solutions Ltd (ENS) has been commissioned by Red Day Properties Ltd to undertake sound insulation testing (SIT) under the pre-completion testing (PCT) requirements of Approved Document E – Resistance to the Passage of Sound, 2003 edition (ADE 2003 (as amended)). This report is an ANC Registered Report with the unique registration number 14474126.

1.2 ENS is a member of the Association of Noise Consultants (ANC) Registration Scheme (organisation number 144) and was on the ANC register at the time of testing. This Scheme has been approved to comply with the testing requirements of Part E of the Building Regulations. The subject property is located at 31 Agnes Road, Barnsley, S70 1NJ and is conversion.

1.3 This report summarises the results of the SIT work undertaken. The test results can be verified by the Building Control Officer through the ADvANCE online verification system.

1.4 This report has been prepared for Red Day Properties Ltd for the sole purpose described above. The test results contained in this report relate only to the above property and the separating elements tested, on the date of testing. Any future modifications made to the tested separating elements, with the potential to impact on their sound insulation properties, invalidates the test results.

SECTION 2 SCOPE OF WORK

2.1 The scope of work was specified to satisfy the testing requirements of Part E of the Building Regulations.

SECTION 3 DETAILS OF TESTING

<table>
<tr><td>Address of building:</td><td colspan="2">31 Agnes Road, Barnsley,
S70 1NJ</td><td>Type of property:</td><td colspan="2">4 Apartments by conversion.</td></tr>
<tr><td>Date of testing:</td><td>21/02/2022</td><td>Tests performed by:</td><td colspan="3">Environmental Noise Solutions
Suite 24 DBIC, Ten Pound Walk
Doncaster DN4 5HX
Tel: 01302 644001
info@environmental-noise-solutions.co.uk</td></tr>
<tr><td rowspan="2">ANC Registration No:</td><td rowspan="2">144</td><td colspan="2">Name of person in charge of test:</td><td colspan="2">Richard Whitaker</td></tr>
<tr><td colspan="2">Name of assistant:</td><td colspan="2">Steven Lambourne</td></tr>
<tr><td>Name and address of client:</td><td colspan="5">Red Day Properties Ltd.
Unit 1C, Church Green, Witney, OX28 4YR
Email: bnb185@live.co.uk</td></tr>
<tr><td colspan="6">The tests detailed in this report have been carried out in full accordance with ISO 140-4 and/or ISO 140-7, with results rated in accordance with ISO 717-1 and/or ISO 717-2.</td></tr>
</table>

SECTION 4 RESULTS OF TESTING

test no. (wall/floor)	source room		receiving room		measured $D_{nT,w}+C_{tr}$	measured $L'_{nT,w}$	performance standard	pass/fail
	Description	**vol (m^3)**	**Description**	**vol (m^3)**	**(dB)**	**(dB)**	**(dB)**	
1 Floor	Commercial Unit	70	Apartment 31, Bedroom	27	43	-	≥43	Pass
2 Wall	Commercial Unit	70	Apartment 31, Living room	47	50	-	≥43	Pass

SECTION 5 EQUIPMENT CALIBRATION DETAILS

Item	Type number	Manufacturer	Serial No.	Date of expiration of calibration	Calibration certification number
Sound level meter	2250	Bruel & Kjaer	3007903	04/06/22	045471-1
Pre-amplifier	ZC-0032	Bruel & Kjaer	25942	04/06/22	045471-1
Microphone	4189	Bruel & Kjaer	3241631	04/06/22	045471-1
Calibrator	4231	Bruel & Kjaer	2292068	13/07/22	045933-2
Omni-directional source	4296	Bruel & Kjaer	2500984	-	-
Power amplifier	2716	Bruel & Kjaer	2439076	-	-
Graphic equaliser	131	dbx	-	-	-
Tapping Machine	3207	Bruel & Kjaer	2439138	24/11/22	04792-1

SECTION 6 TEST PROCEDURES

6.1 All the procedures in Annex B of the Approved Document E to the Building Regulations have been followed.

6.2 Airborne testing is undertaken for all third octave frequency bands between 100 – 3150 Hertz. Two source positions are used. The spatial average sound pressure level is obtained for each source position in both source and receiving rooms using a swept microphone technique (continuously moving). An averaging time of a minimum of 30 seconds is used for each microphone sweep.

6.3 Impact testing is undertaken for all third octave frequency bands between 100 - 3150 Hertz. Four tapping machine positions are used. The spatial average of six measurement positions is determined in the receiving room, consisting of a combination of the four tapping machine positions and four microphone positions. The temporal average sound pressure level is determined at each measurement position, in each frequency band, with an averaging time of a minimum of six seconds.

6.4 Reverberation time measurements are undertaken using one loudspeaker position and an interrupted source. The average of six decay measurements for each frequency band is determined from three fixed microphone positions with two readings in each case.

6.5 Background measurements for airborne testing are undertaken in the receiving room for all third octave frequency bands between 100 – 3150 Hertz using a swept microphone technique (continuously moving). One background measurement is undertaken on completion of the first receiving room level measurement and a second background measurement is undertaken on completion of the second receiving room level measurement. An averaging time of a minimum of 30 seconds is used for each microphone sweep.

6.6 Background measurements for impact testing are undertaken in the receiving room for all third octave frequency bands between 100 – 3150 Hertz using five fixed microphone positions with an averaging time of a minimum of six seconds per measurement. The five measurements are averaged on an energy basis.

6.7 Background noise sources during the course of testing included passing cars on Agnes Road.

6.8 Corrections are applied to the measured levels for both airborne and impact testing to account for the effects of acoustic absorption (characterised by reverberation time) and background noise in the receiving room.

6.9 The airborne and impact receiving room sound pressure levels in each frequency band are corrected for background (where applicable) according to the difference between the receiving room level and background noise level. Where the difference between the signal level and background is less than 10 dB but more than 6 dB, the signal level is calculated by subtracting the background noise level on an energy basis. Where the difference is less than or equal to 6 dB, the measurement is not considered reliable and is deemed to be 'the limit of measurement' so the signal level is estimated by applying a fixed correction of -1.3 dB. For airborne measurements, each background measurement is applied separately to the corresponding receiving room measurement. For impact measurements, the energy averaged background level is applied to the energy averaged receiving room level.

SECTION 7 CONSTRUCTION AND TEST ARRANGEMENT

7.1 The construction details of the separating elements tested, together with the test arrangements (e.g. whether the test was undertaken with a carpet in place etc.) are detailed in the following table:

Test no.	Wall/floor	Construction details	Test arrangement
1	Floor	Existing ceiling in place with a lowered timber ceiling filled with mineral wool and 2 x 12.5mm fireboards attached below.	-
2	Wall	Existing brick wall with timber stud wall to each side with 2 x 12.5mm fireboard to each side.	

SECTION 8 TABULAR/GRAPHICAL PRESENTATION OF RESULTS

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Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

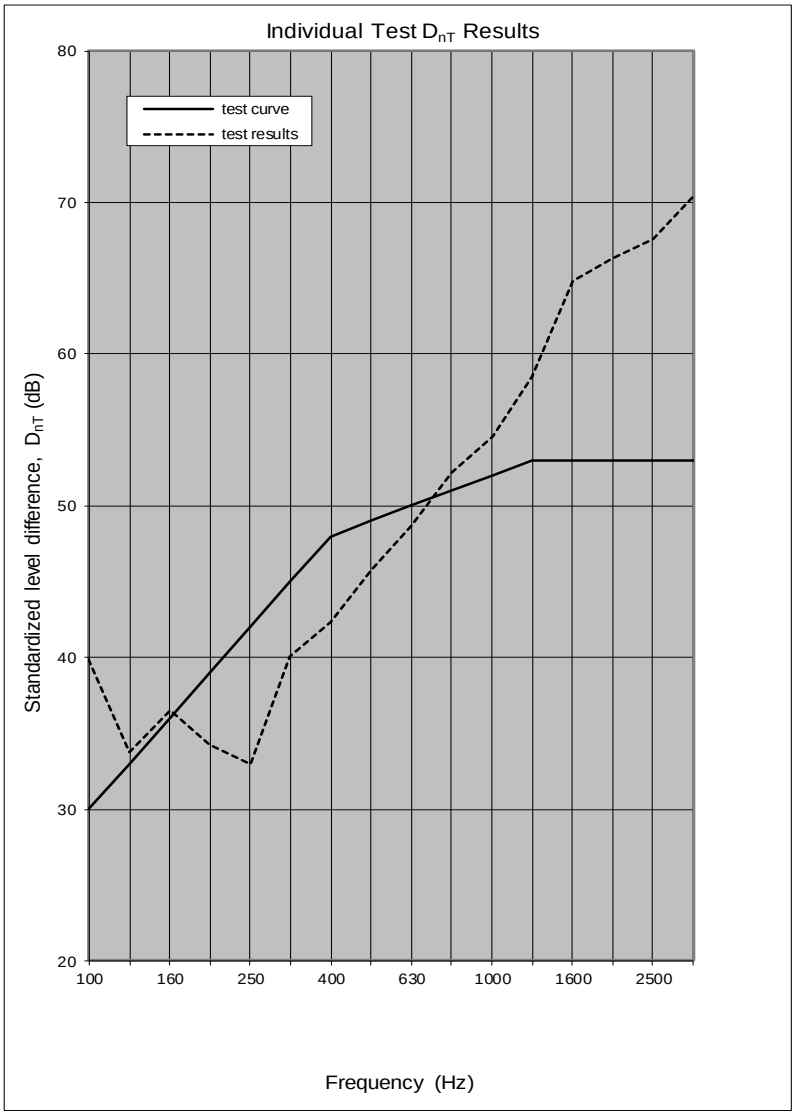
Rating according to ISO 717-1

$D_{nT,w}$ (C; C_{tr}) = 49 (-2; -6) dB

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Freq	Test D_{nT} values (dB)		
(Hz)	curve	test	
100	30	39.9	
125	33	33.8	
160	36	36.5	
200	39	34.2	
250	42	33.0	
315	45	40.1	
400	48	42.3	
500	49	45.8	
630	50	48.6	
800	51	52.2	
1000	52	54.6	
1250	53	58.5	
1600	53	64.8	
2000	53	66.3	
2500	53	67.6	
3150	53	70.4	

# indicates background corrected
* indicates limit of measurement



Construction details:
Existing ceiling in place with a lowered timber ceiling filled with mineral wool and 2 x 12.5mm fireboards attached below.

Test Reference Number: 144/74126/01

Date of test:	Signature of tester:	Source Room:	Vol (m3)	Receiver Room:	Vol (m3)
21/02/2022		Commercial Unit	70	Apartment 31, Bedroom	27

SOUND INSULATION PRE-COMPLETION TEST REPORT

Standardized level difference according to ISO 140-4
Field measurements of airborne sound insulation between rooms

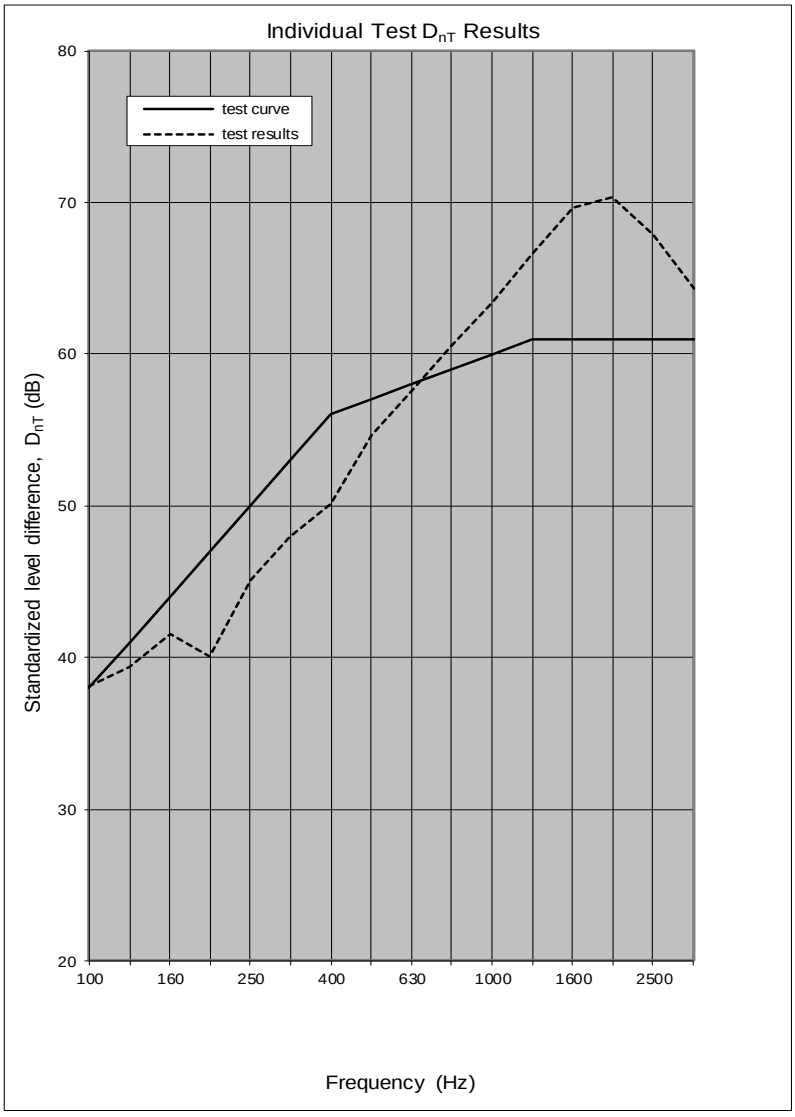
Rating according to ISO 717-1

$D_{nT,w}$ (C; C_{tr}) = 57 (-2; -7) dB

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Freq	Test D_{nT} values (dB)		
(Hz)	curve	test	
100	38	38.1	
125	41	39.4	
160	44	41.5	
200	47	40.1	
250	50	45.1	
315	53	48.0	
400	56	50.1	
500	57	54.7	
630	58	57.5	
800	59	60.6	
1000	60	63.4	
1250	61	66.6	
1600	61	69.7	
2000	61	70.3	
2500	61	67.9	
3150	61	64.3	

# indicates background corrected
* indicates limit of measurement



Construction details:
Existing brick wall with timber stud wall to each side with 2 x 12.5mm fireboard to each side.

Test Reference Number: 144/74126/02

Date of test:	Signature of tester:	Source Room:	Vol (m3)	Receiver Room:	Vol (m3)
21/02/2022		Commercial Unit	70	Apartment 31, Living room	47