



aes

analytical and environmental services

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Sound Insulation Testing Report

1. Site test address: Westborough Mews, Hambleton Close, Maidstone, Kent
 AES job reference: 10286

2. Property type: Dwelling-house

3. Date(s) of testing: 06 April 2005

4. Test organisation: Analytical and Environmental Services Limited
 Address: 3 Bentley Way, Royal Oak Industrial Estate, Daventry,
 Postcode: NN11 8QH

Test engineer: Mark Greenhalgh

Client name: Crest Nicholson (South East) Limited
 Address: Crest House, 30 High Street, Westerham, Kent
 Postcode: TN16 1RG

Construction details: Walls:
 Type 2: Cavity Masonry. 100mm Celcon 4N standard block laid on Celcon Thin Joint System either side 75mm clear cavity, finished with wet plaster.

Floors:
 n/a

Background noise: Occasional site noise

5. Results

| Source Room | | Receive Room | | Sound insulation performance | | | | Pass/ Fail |
|--------------------|--------------------------|--------------------|--------------------------|-----------------------------------|-------------------|-----------------------------------|-------------------|---------------|
| Description | Volume m ³ | Description | Volume m ³ | Measured | | Required | | |
| | | | | D _{ntw} +C _{tr} | L _{'ntw} | D _{ntw} +C _{tr} | L _{'ntw} | |
| Plot 1 living room | 39.4 | Plot 2 living room | 43.9 | 55 | - | 45 | - | Pass |
| Plot 1 bedroom 2 | 24.3 | Plot 2 bedroom 3 | 13.6 | 55 | - | 45 | - | Pass |

Originator: Checked & approved:

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6. Equipment details

| Description | Equipment | Type | AES ref. | Certification number | Expiration date of calibration |
|----------------------|-----------|--------------|----------|----------------------|--------------------------------|
| Sound level analyser | B&K | 2260 | 4070 | 13076 | 13/08/2006 |
| Acoustic calibrator | B&K | 4189 | 4071 | 13076 | 13/08/2005 |
| Microphone | B&K | 4231 | 4072 | 13076 | 13/08/2005 |
| Wireless Radio Kit | Shure | PGX14 | - | n/a | n/a |
| Active loudspeaker | JBL | EON Power 15 | - | n/a | n/a |
| Tapping machine | B&K | - | 4067 | n/a | n/a |
| Various cables | | | | | |

7. Methodology

The tests detailed in this report have been carried out in full accordance with ISO 140-4 and/or ISO 140-7. All the procedures in Annex B of the Approved Document to the Building Regulations have been followed.

Background noise level measurements consisted of a 30 second sample in each of the receiving rooms.

The noise source for the airborne sound insulation tests was a white noise generator and it was ensured where possible that receiving room levels were at least 10 dB above the background noise.

For airborne tests, two loudspeaker positions were measured at five microphone positions in both the source and receive rooms for 15 second samples.

For reverberation time (RT) measurements, a continuous noise source was used with one loudspeaker position. Measurements were made at two different heights at each of three microphone positions. The results presented are based on extrapolation of RT30 measurements or RT20 measurements when the former is not available.

The weighted standardised level differences ($D_{nT,w}$) and weighted standardised impact sound pressure levels ($L'_{nT,w}$) were been calculated in accordance with BS EN ISO 717:1997(3) Rating of sound insulation in buildings and of building elements, Part 1 Airborne sound insulation, and Part 2 Impact sound insulation.

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

Client: Crest Nicholson (South East) Limited Date of test: 06 April 2005

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

Airborne, Plot 1 living room to Plot 2 living room

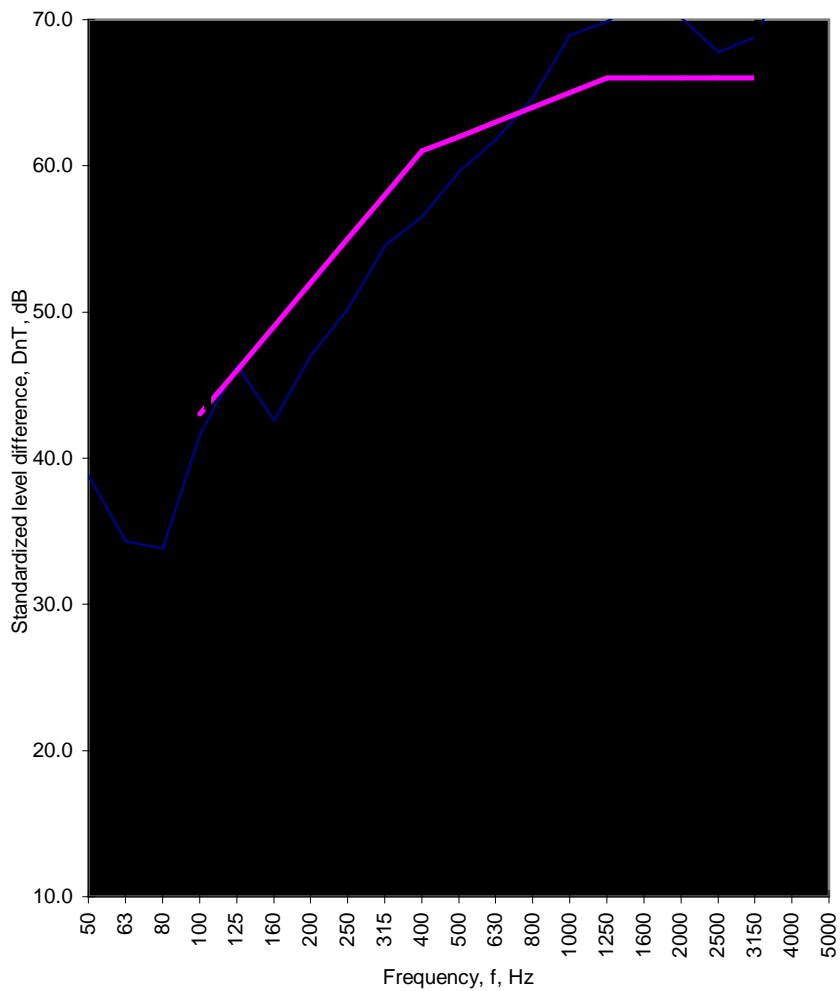
Construction details: Type 2: Cavity Masonry. 100mm Celcon 4N standard block laid on Celcon Thin Joint System either side 75mm clear cavity, finished with wet plaster.



Source room volume: 39.4 m³
Receiving room volume: 43.9 m³

--- Frequency range according to the curve of reference values (ISO 717-1)

| Frequency f Hz | DnT (one-third octave) dB |
|----------------|---------------------------|
| 50 | 38.8 |
| 63 | 34.3 |
| 80 | 33.8 |
| 100 | 41.6 |
| 125 | 46.4 |
| 160 | 42.6 |
| 200 | 47.0 |
| 250 | 50.2 |
| 315 | 54.5 |
| 400 | 56.5 |
| 500 | 59.6 |
| 630 | 61.8 |
| 800 | 64.6 |
| 1000 | 69.0 |
| 1250 | 69.9 |
| 1600 | 71.4 |
| 2000 | 70.1 |
| 2500 | 67.8 |
| 3150 | 68.8 |
| 4000 | 73.9 |
| 5000 | 78.5 |



* Signifies value at limit of measurement

Rating according to ISO 717-1

| | | | | | | | |
|---|-----------------|-------------|--------|-------------|--------|--------------|-------|
| DnT,w (C;Ctr) = | 62 (-2 ; -7) dB | C50-3150 | -3 dB | C50-5000 | -2 dB | C100-5000 | -1 dB |
| Evaluation based on field measurement results obtained by an engineering method | | Ctr,50-3150 | -11 dB | Ctr,50-5000 | -11 dB | Ctr,100-5000 | -7 dB |

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Analytical & Environmental Services
Signature:

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

Client: Crest Nicholson (South East) Limited Date of test: 06 April 2005

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

Airborne, Plot 1 bedroom 2 to Plot 2 bedroom 3

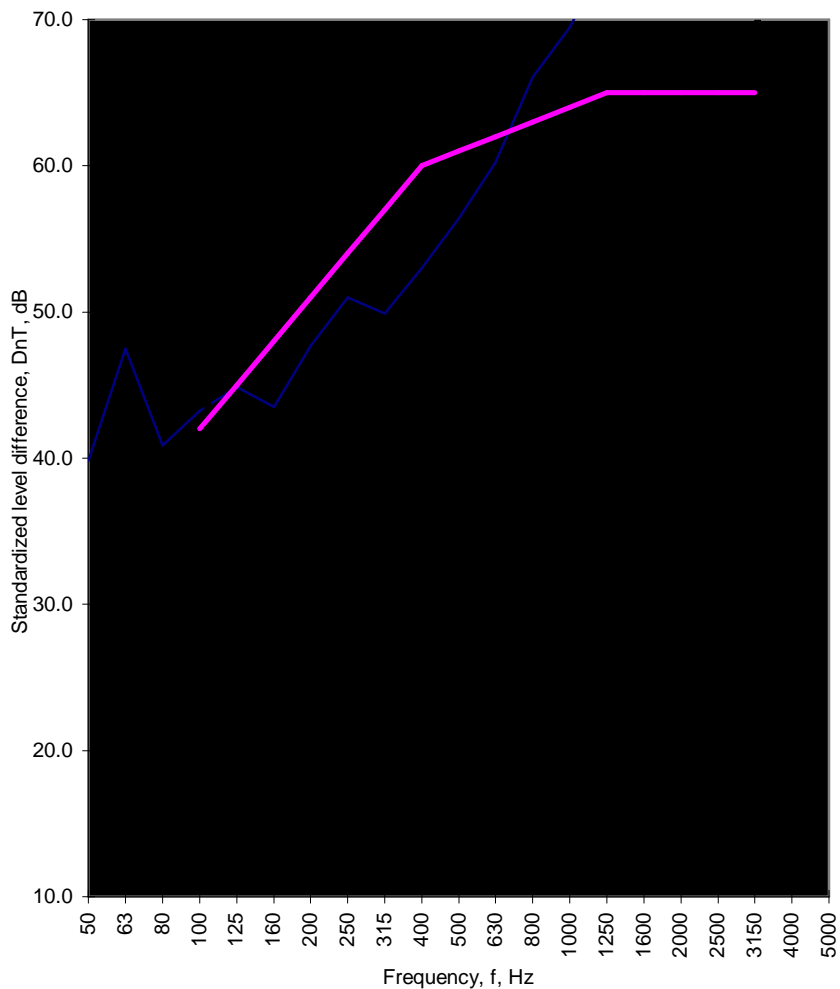
Construction details: Type 2: Cavity Masonry. 100mm Celcon 4N standard block laid on Celcon Thin Joint System either side 75mm clear cavity, finished with wet plaster.



Source room volume: 24.3 m³
 Receiving room volume: 13.6 m³

--- Frequency range according to the curve of reference values (ISO 717-1)

| Frequency f Hz | DnT (one-third octave) dB |
|----------------|---------------------------|
| 50 | 39.8 |
| 63 | 47.5 |
| 80 | 40.9 |
| 100 | 43.2 |
| 125 | 44.8 |
| 160 | 43.5 |
| 200 | 47.7 |
| 250 | 51.0 |
| 315 | 49.9 |
| 400 | 53.0 |
| 500 | 56.4 |
| 630 | 60.2 |
| 800 | 66.1 |
| 1000 | 69.5 |
| 1250 | 74.3 |
| 1600 | 78.8 |
| 2000 | 75.2 |
| 2500 | 75.9 |
| 3150 | 78.0 |
| 4000 | 78.5 |
| 5000 | 86.5 |



* Signifies value at limit of measurement

Rating according to ISO 717-1

| | | | | | | | |
|---|-----------------|-------------|-------|-------------|-------|--------------|-------|
| DnT,w (C;Ctr) = | 61 (-2 ; -6) dB | C50-3150 | -2 dB | C50-5000 | -1 dB | C100-5000 | -1 dB |
| Evaluation based on field measurement results obtained by an engineering method | | Ctr,50-3150 | -7 dB | Ctr,50-5000 | -7 dB | Ctr,100-5000 | -6 dB |

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