

## 1.0 Summary

The tests detailed in this report were carried out on 17<sup>th</sup> October 2007 to check the acoustic performance of party walls and floors separating the purpose built flats at 69 South Coast Road, Peacehaven

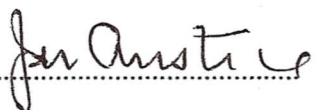
The report also compares the results achieved with the levels prescribed in Approved Document E of The Building Regulations 2003 [5] in order to check for compliance. All the procedures in Annex B of Approved Document E of The Building Regulations have been followed. The following test types were carried out:

Test Type:	No. of Room Pair Tests
Vertical Airborne (Floors)	2
Vertical Impact (Floors)	2
Horizontal Airborne (Walls)	2

Approved Document E states that the individual value of airborne insulation achieved should be not less than  $D_{nTw} + C_{tr} = 45$  dB for floors and walls. The values achieved for impact insulation should not be more than  $L_{nTw}$  62 dB.

**The results show that the room pairs tested satisfied the above requirements.**

Prepared by: .....



John Anstice BSc AMIOA

Checked by: .....



Simon Barrett BSc(Hons) MSc MIOA

## 2.0 Test Report

### 2.1 General

Client Name: Mometco Developments Ltd

Address: Park Gate House, 70A Old Shoreham Road, Hove BN3 6HJ

Site: 69 South Coast Road, Peacehaven, East Sussex

Type of Property: Purpose Built Flats

Test conducted by: George Orton BEng(Hons) MIOA  
Acoustic Associates Sussex Ltd  
8 Highdown House  
Shoreham Airport  
Shoreham-by-Sea  
West Sussex BN43 5PB

Date of tests: 17<sup>th</sup> October 2007

### 2.2 Room Dimensions & Element Construction

Test Reference	Source Room & Volume (m <sup>3</sup> ) Approx.		Receiving Room & Volume (m <sup>3</sup> ) Approx.		Common Area (m <sup>2</sup> ) Approx.
MOME/1368/11714140/ 1	Flat 4 Lounge/Kitchen	59.8	Flat 1 Lounge/Kitchen	59.8	26
MOME/1368/11714140/ 2	Flat 4 Lounge/Kitchen	59.8	Flat 1 Lounge/Kitchen	59.8	26
MOME/1368/11714140/ 3	Flat 4 Bedroom 1	26.2	Flat 1 Bedroom 1	25.7	7.8
MOME/1368/11714140/ 4	Flat 4 Bedroom 1	26.2	Flat 1 Bedroom 1	25.7	7.8
MOME/1368/11714140/ 5	Flat 4 Lounge/Kitchen	59.8	Flat 6 Lounge/Kitchen	58.7	8.7
MOME/1368/11714140/ 6	Flat 5 Lounge/Kitchen	56.5	Flat 4 Bedroom 2	18.8	8.6

Party wall construction consisted of the following:

13mm Gypsum Board  
2 x Nodura Standard Formers  
With poured Concrete Between  
13mm Gypsum Board

Party floor construction consisted of the following:

75mm Screed  
5mm Quietzone Impact Layer  
150mm Concrete Hollowcore Slabs  
100mm Void with 50mm Isowool 1200  
12.5mm Plasterboard

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## 2.3 Test Method

Before any measurements were taken, the meter was calibrated. The calibration procedure was repeated at the end of the tests to check for any calibration 'drift'. No significant drift occurred.

### **Resistance to airborne sound**

The loudspeakers were placed facing into the corners, separated from each other, at different heights in the source room and angled across the room to create a diffuse sound field. The spectrum shape of the reverberant noise was checked to ensure that each 1/3 octave band was within 6 dB of its neighbouring bands. The spectrum shape was adjusted if necessary to comply with this criterion.

Measurements were taken in the source room at each 1/3 octave band centre frequency between 100 Hz and 3.15 kHz using a sweep technique (over 30 seconds). Further measurements were then taken in the same way in the receiving room on the other side of the test element. The reverberation time was also obtained for each 1/3 octave centre frequency in the receiving room. This was spatially averaged over 6 positions in the room.

Ambient sound pressure levels (without the source operating) were also taken at each frequency in the receiving rooms to check that ambient noise levels were at least 10 dB below the measured levels due to generated noise and thus did not contribute to the measured levels. These too were spatially-averaged.

**Dominant sources of background noise were as follows: Site and Traffic Noise**

Type of noise radiated: Broadband pink noise

### **Resistance to impact sound**

The tapping machine was set up in the upper room at least 0.5m from any floor boundary and at an angle of 45° to the direction of the floor joists. Measurements of the noise at each 1/3 octave band centre frequency between 100 Hz and 3.15 kHz were taken in the room below using a sweep technique. The tapping machine was then moved to a new location on the upper floor and the test repeated using a different measurement position in the room below. This was repeated for a total of 4 tests in each pair of rooms.

The reverberation time was then obtained for each relevant 1/3 octave centre frequency in the receiving room. This was spatially averaged over 6 positions in the room.

Ambient sound pressure levels (without the source operating) were also taken at each centre frequency in the receiving rooms to check that ambient noise levels were at least 10 dB below the measured levels due to generated noise and thus did not contribute to the measured levels.

**Dominant sources of background noise were as follows: Site and Traffic Noise**

### **Equipment used:**

Description	Type/No.	Manufacturer	Date of expiration of calibration	Calibration Cert. No.
Integrating sound level meter	Type 1 Nor118	Norsonic	June 2008	11801078
Calibrator	Type 1 041173	Castle GA 607	01/11/08	041173/47454
Sound Source		Neutrik/Behringer/D.A.S./Phonic		
Mic.	Type 1225	Norsonic	June 2008	62610
Tapping machine	TP02002	Sound Solutions	23/07/2009	120/02002

### 3.0 Results

#### 3.1 General

Results of the measurements, in terms of single-figure ratings, are provided below. They are provided as Weighted Standardised Level Differences  $D_{nTw} + C_{tr}$  (for airborne sound) as required by BS EN ISO 140-4 [1] and Weighted Standardised Impact Sound Pressure Levels  $L_{nTw}$  (for impact sound) as required by BS EN ISO 140-7 [2]. They are also defined in ISO 717-1&2 [3,4] which deal with airborne and impact insulation respectively.

On the following pages, the graphical results are presented, together with the underlying data from which the single-figure ratings are calculated. Adverse deviations that occurred in excess of 8 dB are also recorded in accordance with BS EN ISO 140-4&7.

Approved Document E of The Building Regulations: *Resistance to the passage of sound* [5] sets out the following requirements for purpose built dwellings:

#### Airborne Sound Insulation

The insulation values for airborne insulation for walls and floors shall not be less than  $D_{nTw} + C_{tr} = 45$  dB

#### Impact Sound Insulation

The insulation values for impact sound shall not be more than  $L_{nTw} = 62$  dB

**3.2 Separating floors (airborne sound):**

Source Room	Receiving Room	DnTw (dB)	DnTw +Ctr (dB)	Minimum Pass Criteria DnTw+Ctr	Pass/ Fail	Reference No.
Flat 4 Lounge/Kitchen	Flat 1 Lounge Kitchen	53	48	45	P	MOME/1368/11714140/ 1
Flat 4 Bedroom 1	Flat 1 Bedroom 1	62	55	45	P	MOME/1368/11714140/ 3

**3.3 Separating Walls (airborne sound):**

Source Room	Receiving Room	DnTw (dB)	DnTw +Ctr (dB)	Minimum Pass Criteria DnTw+Ctr	Pass/ Fail	Reference No.
Flat 4 Lounge/Kitchen	Flat 6 Lounge/Kitchen	54	51	45	P	MOME/1368/11714140/ 5
Flat 5 Lounge/Kitchen	Flat 4 Bedroom 2	52	48	45	P	MOME/1368/11714140/ 6

**3.4 Separating floors (impact sound):**

Source Room	Receiving Room	LnTw (dB)	Maximum Pass Criteria	Pass/ Fail	Reference No.
Flat 4 Lounge/Kitchen	Flat 1 Lounge Kitchen	49	62	P	MOME/1368/11714140/ 2
Flat 4 Bedroom 1	Flat 1 Bedroom 1	48	62	P	MOME/1368/11714140/ 4

**N.B.** For the purposes of interpretation of the tabulated data above, with airborne sound insulation it is the level difference that is being measured between rooms and the higher the result the better the insulation. With impact sound insulation it is the actual sound pressure level in the receiving room that is measured, and therefore the lower results, the better the insulation.



## Certificate of Measured Sound Insulation of a Wall or Floor

This certificate is based on measurements made by an ANC Organisation registered under the Association of Noise Consultants Registration Scheme (2003)

**Site** 69 South Coast Road

**Town/City** Peacehaven

**Builder/Developer** Mometco Developments Ltd.

**Floor/Wall** Wall

**Airborne/Impact** Airborne

**Source Room** Flat 4 Lounge/Kitchen  
**Receiving Room** Flat 6 Lounge/Kitchen

**Calculated Rating Value: 51 dB  $D_{nT,w}$  +  $C_{tr}$**

*Guidance in Approved Document E (2003) of the Building Regulations 2000:  
Walls in purpose built dwelling-houses and flats (airborne): Minimum value of  $D_{nT,w}$  +  $C_{tr}$  = 45 dB*

This certificate should be read in conjunction with the test report by the ANC Registered Organisation, which contains details of the test method, the equipment used, the construction tested, any unusual features of the test, and a comparison of the result with the guidance in Approved Document E (2003) of the Building Regulations 2000. The Association of Noise Consultants certifies that the data submitted by the Registered Organisation named above, in relation to the sound insulation of the wall or floor separating the rooms described, results in the Calculated Rating Value shown.

**Registered Organisation**  
Acoustic Associates Sussex Ltd

**Test Reference Number**  
117/14140/5

**Date of Test**  
17 OCT 07

**Certificate Date**  
20 OCT 07

**Test Engineer**  
George Orton Beng MIOA

**Signature**

