

## **Technical Report**

C/24307/T01

## **Project**

The Laboratory Measurement of Airborne  
Sound Insulation of Office Pods

## **Prepared for**

Era

## **By**

Allen Smalls

## **Published**

30 July 2019



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**Test Report No: C/24307/T01**

**Date: 30/07/2019**

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Quality Assurance	
Project Title	The Laboratory Measurement of Airborne Sound Insulation of Office Pods
Document Title	Report
Client	Era
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Checker	George Thomson
Report Number	C/24307/T01

### Report Version History

Version	Date	Comments

**Date:** 30/07/2019


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## Summary

Tests have been done in SRL's Laboratory at Holbrook House, Sudbury, Suffolk, to determine the airborne sound insulation of office pods generally in accordance with BS EN ISO 140-4:1998.

From these measurements the required results have been derived and are presented in Tables 1 to 2.

The results are given in 1/3rd octave bands over the frequency range 100Hz to 3150Hz.



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**George Thomson**  
Approved Signatory

**Date:** 30/07/2019

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## 1.0 Details of Measurements

### 1.1 Location

Sound Research Laboratories  
Holbrook House  
Little Waldingfield  
Sudbury  
Suffolk  
CO10 0TF

### 1.2 Test Date

30 July 2019

### 1.3 Tester

Allen Smalls of SRL Technical Services Limited

### 1.4 Instrumentation and Apparatus Used

<b>Make</b>	<b>Description</b>	<b>Type</b>
Brüel & Kjaer	Sound Level Meter	2260
	Microphone	4189
	Microphone Calibrator	4231

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## **1.5 References**

- |                      |  |
|----------------------|--|
| BS EN ISO 140-4:1998 | Acoustics – Measurements of sound insulation in buildings and of building elements – Part 4. Field measurements of airborne sound insulation between rooms |
|----------------------|--|

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## **2.0 Description of Test**

### **2.1 Description of Sample**

Free standing office pods were tested.

Sampling plan: Enough for test

Sample condition: New

Details supplied by: Era

Sample installed by: Era

### **2.2 Sample Delivery date**

30 July 2019

### **2.3 Test Procedures**

The sample was tested in accordance with BS EN ISO 140-4:1998.

Measurements were done as follows;

#### Sound Insulation – Inside to Outside

This was done with a single sound source inside, and receiving sound measurements done 3m from each of the external four faces of the office pod. See Drawing I.

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### **3.0 Results**

The results of the measurements and subsequent analysis are given in Tables 1 to 2.

The results are presented in two ways as follows;

- A) Sound level difference from inside to outside. This does not take into consideration the receiving room acoustic environment.
- B) Normalised (to  $A_0=10\text{m}^2$ ) sound pressure level difference from inside to outside. This takes into consideration the receiving room acoustic environment

Results relate only to the items received and tested.

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**Table 1 : Office Pod Sound Insulation, Inside to Outside, D, dB**

Description : Office pod

<b>Test</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>f, Hz</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>
<b>100</b>	29.6	26.1	28.2	26.1
<b>125</b>	23.3	25.0	22.3	25.1
<b>160</b>	22.7	21.2	20.1	22.0
<b>200</b>	30.1	28.8	26.3	30.2
<b>250</b>	32.6	32.3	27.3	27.8
<b>315</b>	32.2	30.3	32.2	31.2
<b>400</b>	27.8	28.6	30.3	28.1
<b>500</b>	26.5	26.8	23.7	26.3
<b>630</b>	29.6	31.7	29.6	32.2
<b>800</b>	35.0	37.8	35.3	38.7
<b>1000</b>	37.5	37.4	37.1	38.7
<b>1250</b>	38.9	38.6	38.3	38.7
<b>1600</b>	36.7	37.1	35.3	37.2
<b>2000</b>	35.5	36.0	37.2	36.3
<b>2500</b>	37.2	37.6	37.5	37.8
<b>3150</b>	38.0	38.9	37.6	39.2
<b>D<sub>w</sub></b>	<b>34</b>	<b>36</b>	<b>34</b>	<b>36</b>

- Test 1 : Position 1, 3m from pod wall (no door)
- Test 2 : Position 2, 3m from pod wall (no door)
- Test 3 : Position 3, 3m from pod wall (with door in)
- Test 4 : Position 4, 3m from pod wall (no door)



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Table 2 : Office Pod Sound Insulation, Inside to Outside,  $D_n$ , dB

Description : Office pod

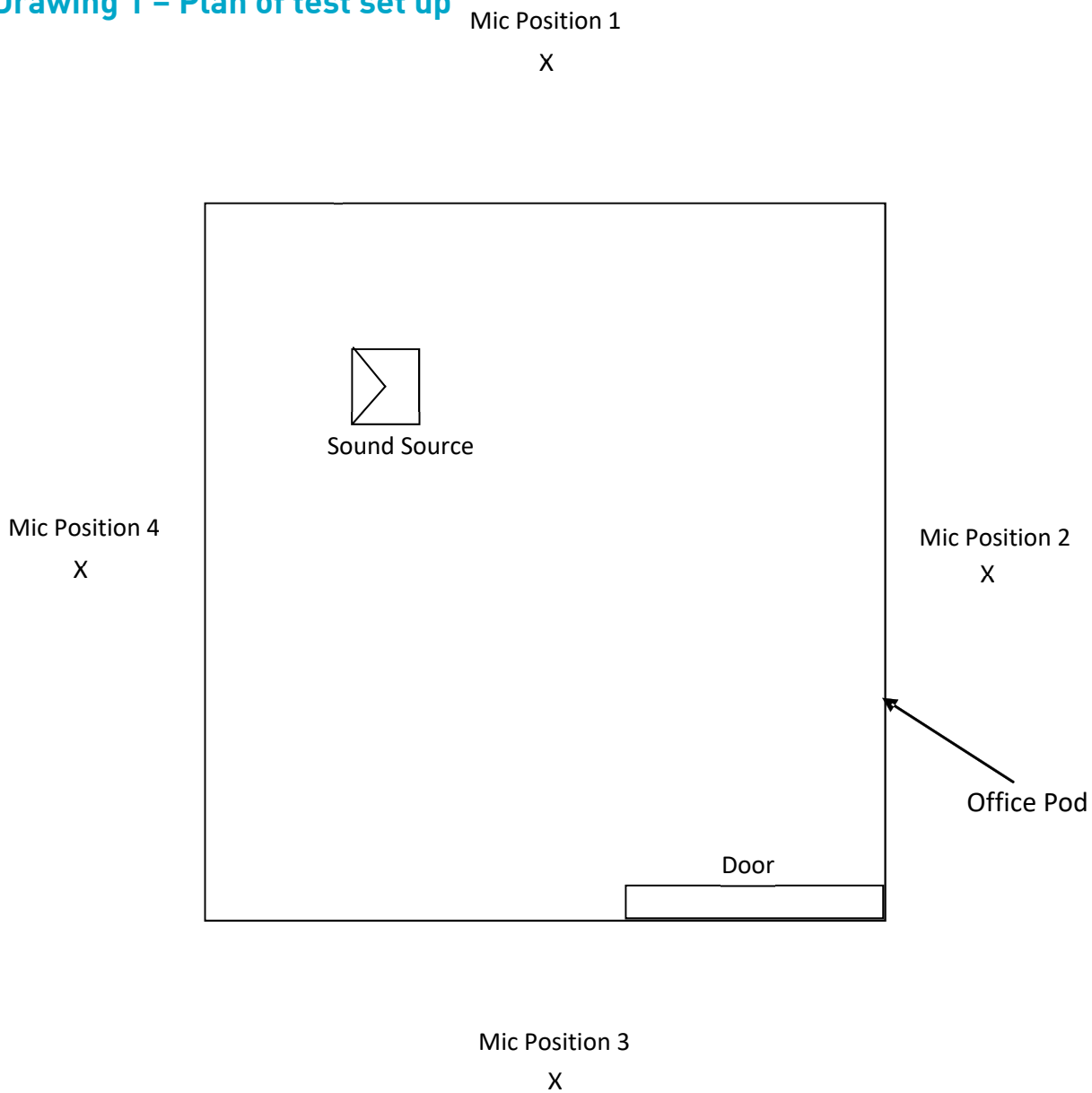
<b>Test</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>f, Hz</b>	<b><math>D_n</math></b>	<b><math>D_n</math></b>	<b><math>D_n</math></b>	<b><math>D_n</math></b>
<b>100</b>	15.3	11.8	13.9	11.8
<b>125</b>	8.8	10.5	7.8	10.6
<b>160</b>	9.3	7.8	6.7	8.6
<b>200</b>	17.8	16.4	13.9	17.8
<b>250</b>	20.3	20.0	15.1	15.5
<b>315</b>	19.5	17.6	19.5	18.5
<b>400</b>	15.9	16.7	18.4	16.1
<b>500</b>	14.9	15.2	12.1	14.7
<b>630</b>	18.3	20.3	18.3	20.9
<b>800</b>	23.9	26.7	24.1	27.6
<b>1000</b>	26.6	26.5	26.2	27.8
<b>1250</b>	27.6	27.3	27.0	27.5
<b>1600</b>	25.3	25.7	23.9	25.9
<b>2000</b>	24.1	24.7	25.8	25.0
<b>2500</b>	25.7	26.1	26.0	26.3
<b>3150</b>	26.0	27.0	25.7	27.3
<b><math>D_{n,w}</math></b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>

- Test 1 : Position 1, 3m from pod wall (no door)
- Test 2 : Position 2, 3m from pod wall (no door)
- Test 3 : Position 3, 3m from pod wall (with door in)
- Test 4 : Position 4, 3m from pod wall (no door)

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## Drawing 1 – Plan of test set up



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**SRL offers services in:**

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