



# The Building Test Centre

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Report Number **BTC 13562A**

AN ACOUSTIC TEST REPORT COVERING A SERIES OF  
LABORATORY SOUND INSULATION TESTS TO  
BS EN ISO 140-3:1995 ON THE BRITISH GYPSUM  
GYPWALL AUDIO PARTITION.

Test Date: 8<sup>th</sup> - 17<sup>th</sup> September 2004

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**Customer:** British Gypsum Limited  
East Leake  
Loughborough  
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Customer: **British Gypsum Limited**

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**AN ACOUSTIC TEST REPORT COVERING A SERIES OF LABORATORY SOUND INSULATION TESTS TO BS EN ISO 140-3:1995 ON THE BRITISH GYPSUM GYPWALL AUDIO PARTITION.**

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## FOREWORD

This test report details a series sound insulation tests conducted on sheet and stud partition systems. The test sponsor was British Gypsum Limited.

The test specimens were installed by British Gypsum Limited. The construction of the specimen took place between the 7<sup>th</sup> and 17<sup>th</sup> September 2004. British Gypsum Limited designed the partition systems and selected the materials for the test specimen.

The tests were carried out between the 8<sup>th</sup> and 17<sup>th</sup> September 2004.

## REPORT AUTHORISATION

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## TEST CONSTRUCTION

The test specimens were constructed in an aperture having an overall opening of 2400mm (high) x 3600mm (wide).

A twin frame metal stud partition comprising Gypframe 94C70 Standard Floor & Ceiling Channels and Gypframe 92S10 C Studs was built in the aperture. The Gypframe 94C70 Standard Floor & Ceiling Channels were fixed to the head and base of the aperture using two rows of staggered 25mm Gyproc drywall screw fixings spaced at 600mm centres in each row.

Gypframe 92S10 C Studs were positioned between the head and base channels at each end of the aperture and fixed using two rows of staggered 25mm Gyproc drywall screw fixings, spaced at 600mm centres in each row. Gypframe 92S10 C Studs were positioned between the head and base channels at 600mm centres.

The insulation material used in the series of tests comprised, solely or a combination of, 100mm thick Rockwool RW3 and 100mm thick Isowool General Purpose Roll.

The frameworks were clad on one side with 15mm Gyproc SoundBloc and insulation material was positioned in the cavity. The depth of the partition, the number of board layers and the thickness and type of insulation material were all varied through out the series of tests.

25mm, 41mm and 60mm Gyproc Jack-Point Screws and 90mm Gyproc drywall screws were used to fix the first, second, third and fourth layers (where applicable) of board to the framework, respectively.

The inner board layers were screw fixed around the perimeter of the boards at 300mm centres and the final outer layer was screw fixed around the perimeter and with in the field of the boards at 300mm centres.

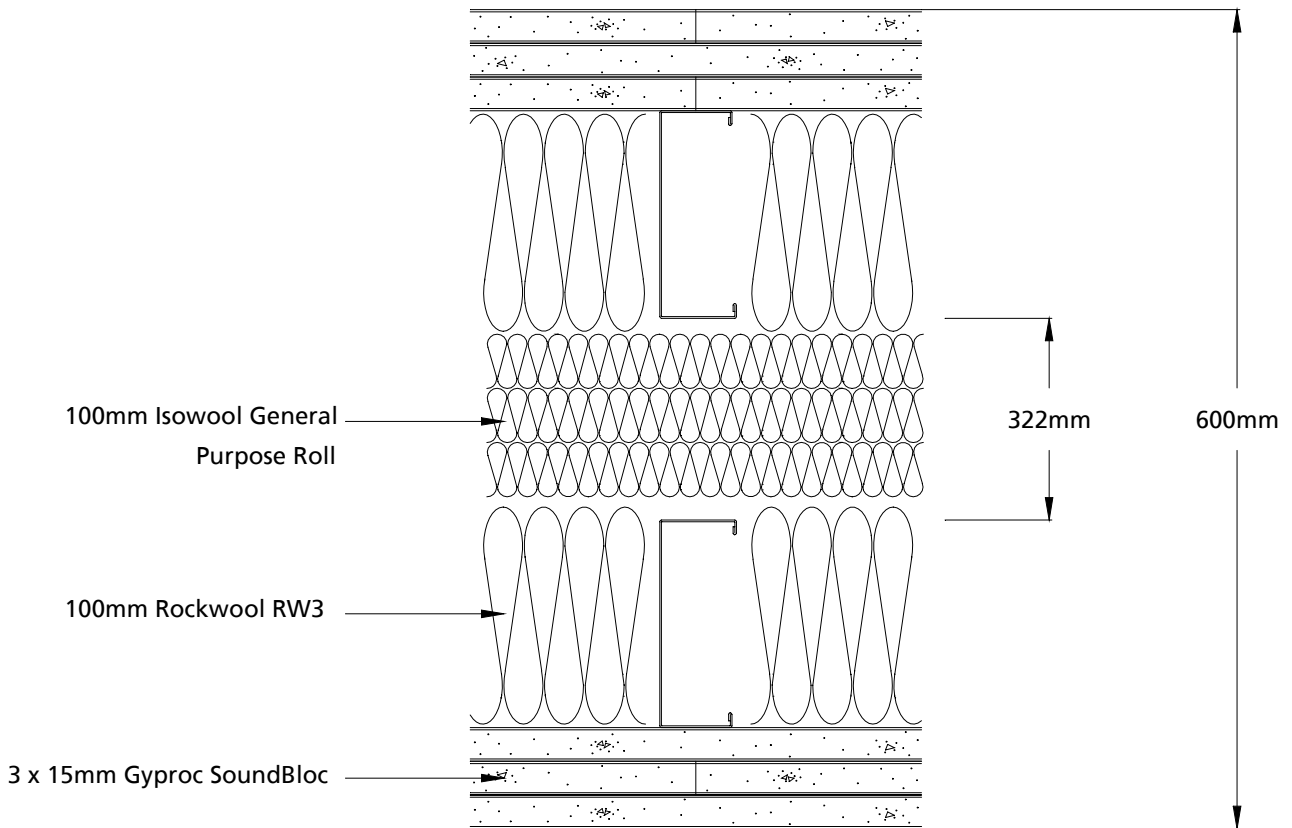
All vertical joints were staggered between layers. All joints were taped and the perimeter sealed with Gyproc Sealant.

For one of the tests (BTC 13562EA) an independent wall lining was installed comprising Gypframe 50C50 Standard Floor & Ceiling Channel and Gypframe 48S50 'C' Studs clad on one side with a single layer of 15mm Gyproc SoundBloc and with 60mm Isowool Spacesaver in the cavity. The layer of board was screw fixed around the perimeter and with in the field of the boards at 300mm centres using 32mm Gyproc drywall screws.

Below is a table showing the combinations of number of board layers, type and amount of insulation material tested.



BTC test code	Partition width (mm)	No. of board layers T1 room side	No. of board layers on T2 room side	No. of layers of Rockwool RW3	No. of layers of Isowool GPR
13562AA	800	3	3	0	2
13562BA	800	3	3	0	2
13562CA	800	3	3	0	2
13562DA	800	3	3	0	2
13562EA	1020	3 + 1 IWL	3	0	2
13562FA	800	3	3	2	3
13562GA	785	2	3	2	3
13562HA	770	2	2	2	3
13562IA	600	3	3	2	3
13562JA	615	4	3	2	3
13562KA	615	4	3	2	3
13562LA	630	4	4	2	3
13562MA	600	2	4	2	3
13562NA	700	2	4	2	3
13562PA	715	3	4	2	3
13562QA	700	3	3	2	3
13562RA	800	2	2	2	4



**Figure 1.** Cross sectional view through partition BTC 13562IA.

*The descriptions of individual components making up the test specimen were provided by the customer and were checked for accuracy wherever possible.*

## TEST MATERIALS

### Gyproc SoundBloc

Nominally, 2400mm (long) x 1200mm (wide) x 15mm (thick) Gyproc SoundBloc manufactured by British Gypsum Limited, ex Kirkby Thore.

Average surface density:	12.96 kg/m <sup>2</sup>
Average thickness:	15.163 mm
Board identification numbers:	27 240 4 08:37

The surface density was calculated using the actual weight and size of a selection of the boards used in the test specimen.

### Insulation Components

Nominally, 100mm thick Isowool General Purpose Roll supplied by British Gypsum-Isover Limited.

Actual surface density:	1.035kg/m <sup>2</sup> .
Actual density:	10.35 kg/m <sup>3</sup> .

Nominally, 100mm thick Rockwool RW3 supplied by Sheffield Insulations Limited.

Actual surface density:	6.208kg/m <sup>2</sup> .
Actual density:	62.08 kg/m <sup>3</sup> .

The surface density and density were calculated using the actual weight and size of a selection of the insulation used in the test specimen.

### Metal Components

- i) 1.0mm thick Gypframe 92S10 'C' Studs manufactured from galvanised mild steel using the 'UltraSTEEL' process.
- ii) 0.7mm thick Gypframe 94C70 Standard Flange Floor & Ceiling Channels manufactured from galvanised mild steel using the 'UltraSTEEL' process.
- iii) 0.5mm thick Gypframe 48S50 'C' Studs manufactured from galvanised mild steel using the 'UltraSTEEL' process.

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- iv) 0.5mm thick Gypframe 50C50 Standard Flange Floor & Ceiling Channels manufactured from galvanised mild steel using the 'UltraSTEEL' process.

All metal components supplied by British Gypsum Limited.

#### Fasteners

- i) 25mm Gyproc drywall screws supplied by British Gypsum Limited.
- ii) 32mm Gyproc drywall screws supplied by British Gypsum Limited.
- iii) 35mm Gyproc Jack-Point Screws supplied by British Gypsum Limited.
- iv) 41mm Gyproc Jack-Point Screws supplied by British Gypsum Limited.
- v) 60mm Gyproc Jack-Point Screws supplied by British Gypsum Limited.
- vi) 90mm Gyproc drywall screws supplied by British Gypsum Limited.

#### Miscellaneous Components

- i) Gyproc Sealant supplied by British Gypsum Limited.
- ii) Joint tape.

Where measurements could not be taken then weight and dimensions were provided by the customer or the manufacturer e.g. from material labelling. Material information was recorded according to procedure MAT/1.



## TEST PROCEDURE

The test specimens (3.6 m x 2.4 m) were constructed in an aperture in a wall dividing two reverberant rooms with volumes of approximately 98m<sup>3</sup> and 62m<sup>3</sup>.

The accuracy of the test method conforms to BS EN 20140-2:1993.

The test procedure used was 140/3 issue 5.

Broad-band white noise was used to measure the level differences and broad-band pink noise was used to measure the reverberation times. Third octave band pass filters were used in real time mode. Where serial measurements were taken band-pass noise was used. See appendix B for further information.



## TEST RESULTS

BTC Test Number	Weighted Airborne Sound Reduction Index
13562AA	$R_w (C; Ctr) = 76 (-2; -7) \text{ dB}$
13562BA	$R_w (C; Ctr) = 76 (-2; -7) \text{ dB}$
13562CA	$R_w (C; Ctr) = 76 (-2; -7) \text{ dB}$
13562DA	$R_w (C; Ctr) = 76 (-2; -7) \text{ dB}$
13562EA	$R_w (C; Ctr) = 87 (-3; -9) \text{ dB}$
13562FA	$R_w (C; Ctr) = 80 (-3; -9) \text{ dB}$
13562GA	$R_w (C; Ctr) = 79 (-3; -9) \text{ dB}$
13562HA	$R_w (C; Ctr) = 78 (-3; -10) \text{ dB}$
13562IA	$R_w (C; Ctr) = 77 (-2; -8) \text{ dB}$
13562JA	$R_w (C; Ctr) = 77 (-2; -7) \text{ dB}$
13562 KA	$R_w (C; Ctr) = 77 (-1; -7) \text{ dB}$
13562LA	$R_w (C; Ctr) = 77 (-2; -7) \text{ dB}$
13562MA	$R_w (C; Ctr) = 76 (-2; -8) \text{ dB}$
13562NA	$R_w (C; Ctr) = 76 (-1; -7) \text{ dB}$
13562PA	$R_w (C; Ctr) = 78 (-2; -7) \text{ dB}$
13562QA	$R_w (C; Ctr) = 78 (-2; -7) \text{ dB}$
13562RA	$R_w (C; Ctr) = 81 (-4; -10) \text{ dB}$

For full data see pages 12 - 45.

Test conducted in accordance with BS EN ISO 140-3: 1995

Rated in accordance with BS EN ISO 717-1: 1997

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## LIMITATIONS

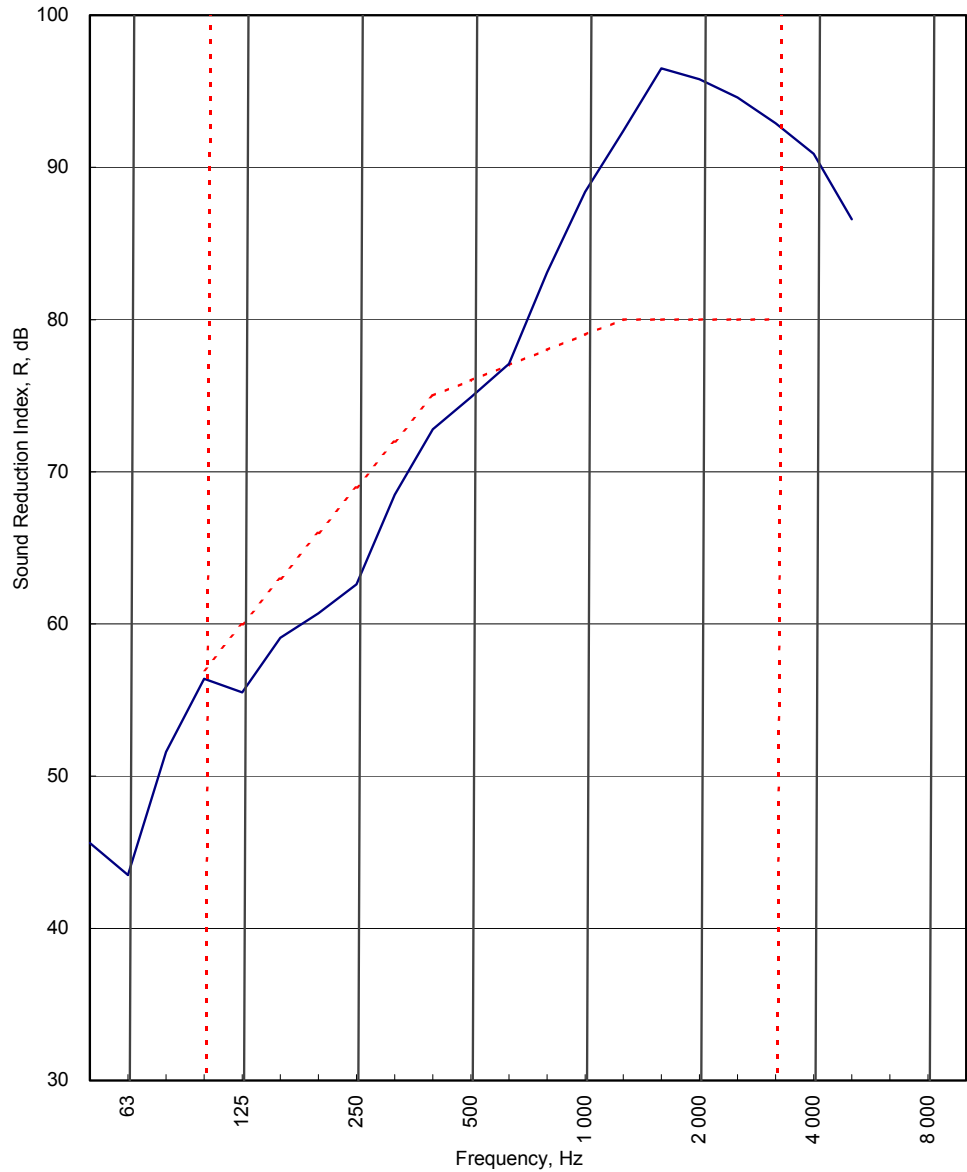
The results only relate to the behaviour of the element of construction under the particular conditions of test; they are not intended to be the sole criteria for assessing the potential acoustic performance of the element in use nor do they reflect the actual behaviour.

The specification and interpretation of test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

**APPENDIX A- TEST DATA**

Test Code: <b>H13562AA</b>
Test Date: <b>08/09/04</b>

Freq. Hz	R dB
50	45.6
63	43.5
80	51.6
100	56.4
125	55.5
160	59.1
200	60.7
250	62.6
315	68.5
400	72.8
500	74.9
630	77.1
800	83.1
1 000	88.4
1 250	92.4
1 600	96.5
2 000	95.8
2 500	94.6
3 150	92.9
4 000	90.9
5 000	86.6
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 76 (-2;-7) dB</b>		
	<b>Max dev. 6.4 dB at 250 Hz</b>		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>C<sub>50-3150</sub> = -3 dB</b>	<b>C<sub>50-5000</sub> = -2 dB</b>	<b>C<sub>100-5000</sub> = -1 dB</b>
	<b>C<sub>tr,50-3150</sub> = -13 dB</b>	<b>C<sub>tr,50-5000</sub> = -13 dB</b>	<b>C<sub>tr,100-5000</sub> = -7 dB</b>

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562AA**

Test Date: **08/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.09</b>
Temperature, deg.C:	<b>20.7</b>	<b>20.4</b>
Rel. Humidity, %RH:	<b>62.3</b>	<b>62.8</b>

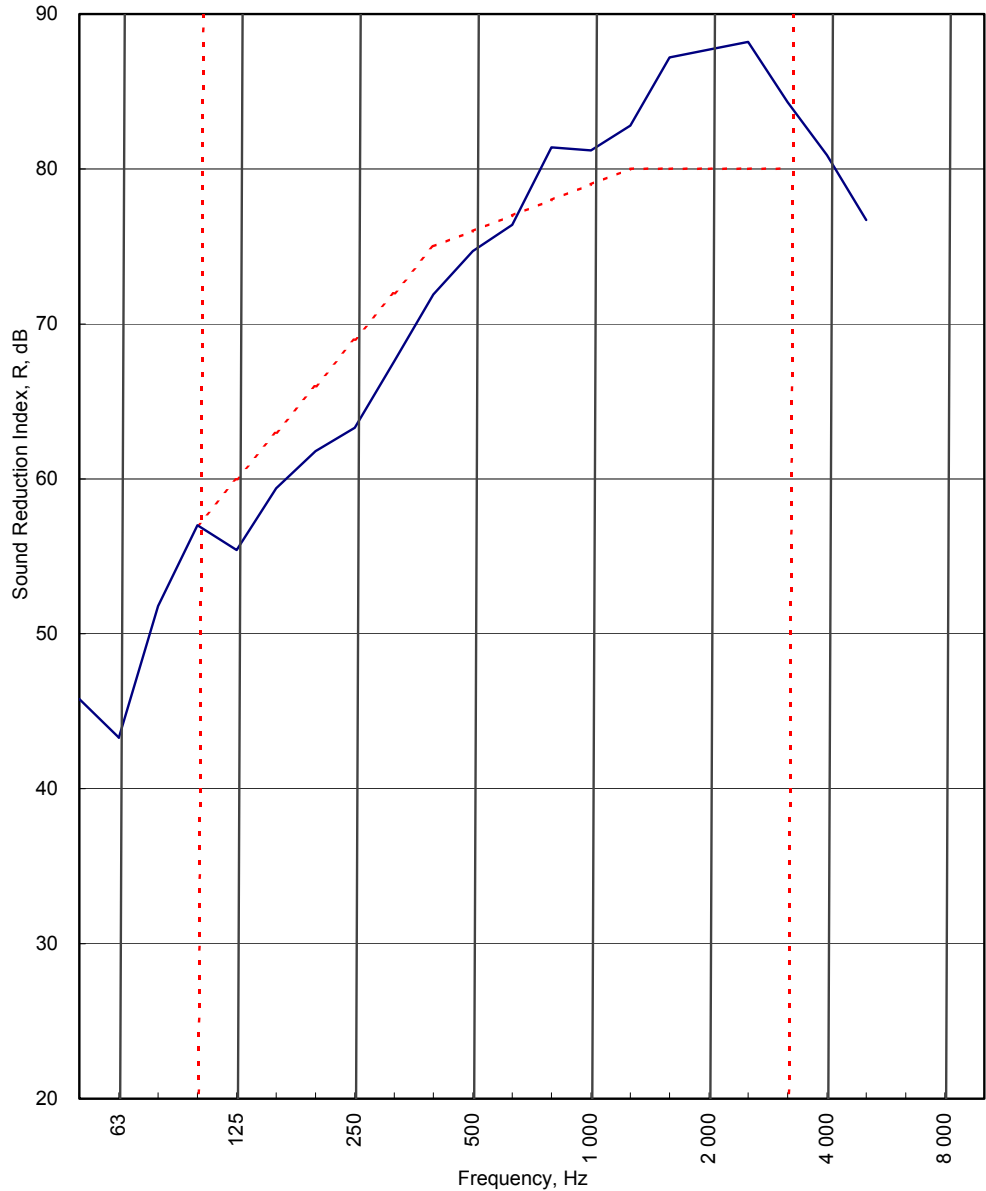
Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	89.6	42.6	15.7	42.6	0.73	-1.4	<b>45.6</b>		
63	90.2	44.2	10.8	44.2	0.56	-2.5	<b>43.5</b>		45.8
80	94.5	41.0	9.9	41.0	0.65	-1.9	<b>51.6</b>		
100	97.3	40.0	14.3	40.0	0.82	-0.9	<b>56.4</b>	0.6	
125	100.9	45.4	10.8	45.4	1.01	0.0	<b>55.5</b>	4.5	56.8
160	107.3	48.9	8.5	48.9	1.18	0.7	<b>59.1</b>	3.9	
200	113.1	54.0	15.9	54.0	1.44	1.6	<b>60.7</b>	5.3	
250	114.3	53.3	16.3	53.3	1.46	1.6	<b>62.6</b>	6.4	62.9
315	113.2	46.7	16.9	46.7	1.58	2.0	<b>68.5</b>	3.5	
400	110.4	38.7	19.2	38.7	1.29	1.1	<b>72.8</b>	2.2	
500	107.7	34.1	18.2	34.1	1.34	1.3	<b>74.9</b>	1.1	74.6
630	104.9	29.6	16.4	<b>29.4</b>	1.46	1.6	<b>77.1</b>		
800	104.5	23.7	13.5	<b>23.3</b>	1.54	1.9	<b>83.1</b>		
1 000	103.2	18.7	16.1	<b>17.4</b>	1.84	2.6	<b>88.4</b>		86.4
1 250	102.2	14.4	12.6	<b>13.1</b>	2.14	3.3	<b>92.4</b>		
1 600	104.8	13.0	11.8	<b>11.7</b>	2.21	3.4	<b>96.5</b>		
2 000	105.4	14.3	12.7	<b>13.0</b>	2.19	3.4	<b>95.8</b>		95.6
2 500	103.6	13.2	10.8	<b>11.9</b>	1.97	2.9	<b>94.6</b>		
3 150	101.7	12.5	10.7	<b>11.2</b>	1.74	2.4	<b>92.9</b>		
4 000	99.8	12.6	12.4	<b>11.3</b>	1.73	2.4	<b>90.9</b>		89.3
5 000	96.2	12.8	12.5	<b>11.5</b>	1.56	1.9	<b>86.6</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>27.5</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-13</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-13</b>		
				Test Procedure: 140/3/issue 5	
				Worksheet: 140_3_1.XLS	



Test Code:  
**H13562BA**  
 Test Date:  
**08/09/04**

Freq. Hz	R dB
50	45.8
63	43.3
80	51.8
100	57.0
125	55.4
160	59.4
200	61.8
250	63.3
315	67.6
400	71.9
500	74.7
630	76.4
800	81.4
1 000	81.2
1 250	82.8
1 600	87.2
2 000	87.7
2 500	88.2
3 150	84.3
4 000	80.9
5 000	76.7
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;C<sub>tr</sub>) = 76 (-2;-7) dB</b>		
	Max dev. 5.7 dB at 250 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	C <sub>50-3150</sub> = -3 dB	C <sub>50-5000</sub> = -3 dB	C <sub>100-5000</sub> = -1 dB
	C <sub>tr,50-3150</sub> = -13 dB	C <sub>tr,50-5000</sub> = -13 dB	C <sub>tr,100-5000</sub> = -7 dB

Customer: **British Gypsum Limited**



LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995

Test Code: **H13562BA**

Test Date: **08/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.09</b>
Temperature, deg.C:	<b>20.7</b>	<b>20.4</b>
Rel. Humidity, %RH:	<b>62.3</b>	<b>62.8</b>

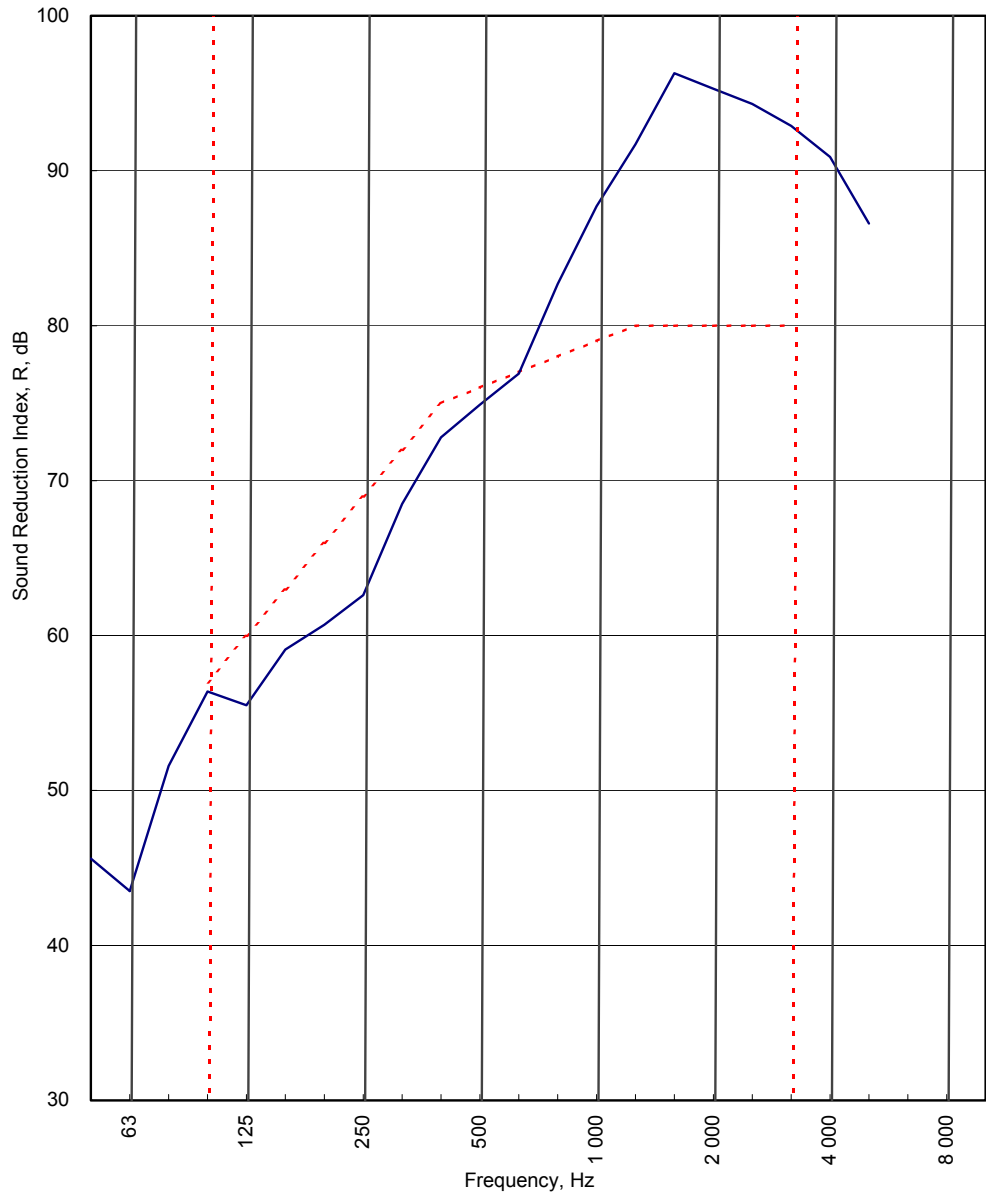
Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	78.5	31.9	14.1	31.9	0.83	-0.8	<b>45.8</b>		
63	79.1	33.3	11.7	33.3	0.56	-2.5	<b>43.3</b>		45.8
80	83.2	30.1	12.1	30.1	0.75	-1.3	<b>51.8</b>		
100	87.2	29.9	16.1	<b>29.7</b>	0.89	-0.5	<b>57.0</b>		
125	91.1	35.2	11.5	35.2	0.90	-0.5	<b>55.4</b>	4.6	57.0
160	97.7	39.0	9.2	39.0	1.17	0.7	<b>59.4</b>	3.6	
200	103.4	43.1	15.4	43.1	1.40	1.5	<b>61.8</b>	4.2	
250	104.4	43.2	16.2	43.2	1.61	2.1	<b>63.3</b>	5.7	63.6
315	103.2	36.9	17.9	36.9	1.34	1.3	<b>67.6</b>	4.4	
400	100.6	30.0	18.8	<b>29.7</b>	1.25	1.0	<b>71.9</b>	3.1	
500	97.6	25.1	18.0	<b>24.2</b>	1.36	1.3	<b>74.7</b>	1.3	73.9
630	95.3	21.8	18.8	<b>20.5</b>	1.45	1.6	<b>76.4</b>	0.6	
800	94.8	17.2	16.0	<b>15.9</b>	1.78	2.5	<b>81.4</b>		
1 000	93.7	16.1	16.5	<b>14.8</b>	1.71	2.3	<b>81.2</b>		81.7
1 250	92.9	14.5	14.5	<b>13.2</b>	2.05	3.1	<b>82.8</b>		
1 600	95.7	13.1	15.1	<b>11.8</b>	2.14	3.3	<b>87.2</b>		
2 000	96.0	13.1	15.2	<b>11.8</b>	2.24	3.5	<b>87.7</b>		87.7
2 500	94.1	10.0	12.5	<b>8.7</b>	1.93	2.8	<b>88.2</b>		
3 150	92.2	11.5	12.9	<b>10.2</b>	1.71	2.3	<b>84.3</b>		
4 000	89.9	12.6	13.4	<b>11.3</b>	1.72	2.3	<b>80.9</b>		79.6
5 000	86.3	12.8	14.2	<b>11.5</b>	1.54	1.9	<b>76.7</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>27.5</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-13</b>		
	<b>(50-5000)</b>	<b>-3</b>	<b>-13</b>		
				Test Procedure: 140/3/issue 5	
				Worksheet: 140_3_1.XLS	



Test Code:  
H13562CA  
Test Date:  
08/09/04

Freq. Hz	R dB
50	45.6
63	43.5
80	51.6
100	56.4
125	55.5
160	59.1
200	60.7
250	62.6
315	68.5
400	72.8
500	74.9
630	76.9
800	82.7
1 000	87.7
1 250	91.7
1 600	96.3
2 000	95.3
2 500	94.3
3 150	92.9
4 000	90.9
5 000	86.6
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 76 (-2;-7) dB</b>		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>Max dev. 6.4 dB at 250 Hz</b>		
	C <sub>50-3150</sub> = <b>-3 dB</b>	C <sub>50-5000</sub> = <b>-2 dB</b>	C <sub>100-5000</sub> = <b>-1 dB</b>
	C <sub>tr,50-3150</sub> = <b>-13 dB</b>	C <sub>tr,50-5000</sub> = <b>-13 dB</b>	C <sub>tr,100-5000</sub> = <b>-7 dB</b>

Customer: **British Gypsum Limited**





**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562CA**

Test Date: **08/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.09</b>
Temperature, deg.C:	<b>20.7</b>	<b>20.4</b>
Rel. Humidity, %RH:	<b>62.3</b>	<b>62.8</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	89.6	42.6	11.6	42.6	0.73	-1.4	<b>45.6</b>		
63	90.2	44.2	12.3	44.2	0.56	-2.5	<b>43.5</b>		45.8
80	94.5	41.0	8.6	41.0	0.65	-1.9	<b>51.6</b>		
100	97.3	40.0	15.7	40.0	0.82	-0.9	<b>56.4</b>	0.6	
125	100.9	45.4	9.3	45.4	1.01	0.0	<b>55.5</b>	4.5	56.8
160	107.3	48.9	6.1	48.9	1.18	0.7	<b>59.1</b>	3.9	
200	113.1	54.0	9.3	54.0	1.44	1.6	<b>60.7</b>	5.3	
250	114.3	53.3	6.3	53.3	1.46	1.6	<b>62.6</b>	6.4	62.9
315	113.2	46.7	7.7	46.7	1.58	2.0	<b>68.5</b>	3.5	
400	110.4	38.7	14.9	38.7	1.29	1.1	<b>72.8</b>	2.2	
500	107.7	34.1	8.5	34.1	1.34	1.3	<b>74.9</b>	1.1	74.5
630	104.9	29.6	8.4	29.6	1.46	1.6	<b>76.9</b>	0.1	
800	104.5	23.7	6.8	23.7	1.54	1.9	<b>82.7</b>		
1 000	103.2	18.7	9.5	<b>18.1</b>	1.84	2.6	<b>87.7</b>		85.9
1 250	102.2	14.4	5.6	<b>13.8</b>	2.14	3.3	<b>91.7</b>		
1 600	104.8	13.0	6.5	<b>11.9</b>	2.21	3.4	<b>96.3</b>		
2 000	105.4	14.3	6.6	<b>13.5</b>	2.19	3.4	<b>95.3</b>		95.2
2 500	103.6	13.2	6.4	<b>12.2</b>	1.97	2.9	<b>94.3</b>		
3 150	101.7	12.5	7.4	<b>11.2</b>	1.74	2.4	<b>92.9</b>		
4 000	99.8	12.6	11.9	<b>11.3</b>	1.73	2.4	<b>90.9</b>		89.3
5 000	96.2	12.8	12.8	<b>11.5</b>	1.56	1.9	<b>86.6</b>		
6 300									
8 000									
10 000									

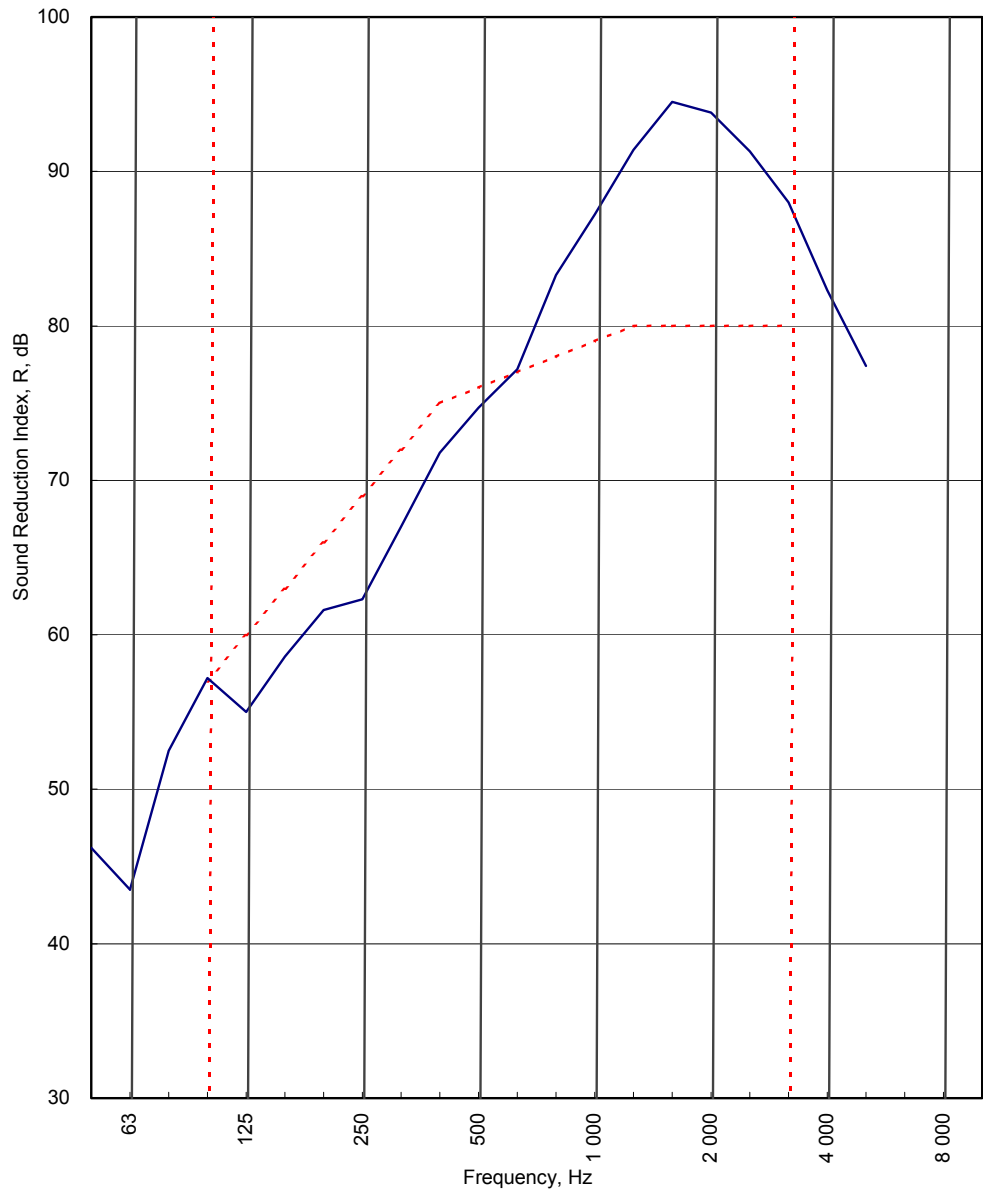
<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>27.6</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-13</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-13</b>		

Test Procedure: 140/3/issue 5  
Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562DA**  
 Test Date:  
**08/09/04**

Freq. Hz	R dB
50	46.2
63	43.5
80	52.5
100	57.2
125	55.0
160	58.6
200	61.6
250	62.3
315	67.0
400	71.8
500	74.7
630	77.2
800	83.3
1 000	87.2
1 250	91.4
1 600	94.5
2 000	93.8
2 500	91.3
3 150	88.0
4 000	82.3
5 000	77.4
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 76 (-2;-7) dB</b>		
	Max dev. 6.7 dB at 250 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	C <sub>50-3150</sub> = <b>-4 dB</b>	C <sub>50-5000</sub> = <b>-3 dB</b>	C <sub>100-5000</sub> = <b>-1 dB</b>
	C <sub>tr,50-3150</sub> = <b>-13 dB</b>	C <sub>tr,50-5000</sub> = <b>-13 dB</b>	C <sub>tr,100-5000</sub> = <b>-7 dB</b>

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562DA**

Test Date: **08/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.09</b>
Temperature, deg.C:	<b>20.7</b>	<b>20.4</b>
Rel. Humidity, %RH:	<b>62.3</b>	<b>62.8</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	76.0	29.1	11.4	29.1	0.85	-0.7	<b>46.2</b>		
63	78.8	33.6	11.4	33.6	0.68	-1.7	<b>43.5</b>		46.1
80	83.0	29.4	9.6	29.4	0.77	-1.1	<b>52.5</b>		
100	87.1	29.9	17.2	<b>29.7</b>	0.96	-0.2	<b>57.2</b>		
125	91.0	35.3	9.8	35.3	0.85	-0.7	<b>55.0</b>	5.0	56.7
160	97.3	39.1	5.9	39.1	1.09	0.4	<b>58.6</b>	4.4	
200	103.1	42.6	8.3	42.6	1.28	1.1	<b>61.6</b>	4.4	
250	104.2	43.4	5.4	43.4	1.43	1.5	<b>62.3</b>	6.7	63.1
315	103.1	37.1	6.0	37.1	1.26	1.0	<b>67.0</b>	5.0	
400	100.3	29.3	14.2	29.3	1.20	0.8	<b>71.8</b>	3.2	
500	97.5	23.9	6.6	23.9	1.28	1.1	<b>74.7</b>	1.3	74.0
630	95.3	19.8	5.1	<b>19.7</b>	1.45	1.6	<b>77.2</b>		
800	94.7	14.2	4.6	<b>13.7</b>	1.70	2.3	<b>83.3</b>		
1 000	93.7	10.6	9.1	<b>9.3</b>	1.89	2.8	<b>87.2</b>		86.1
1 250	93.0	5.9	5.0	<b>4.6</b>	1.99	3.0	<b>91.4</b>		
1 600	95.8	5.8	5.0	<b>4.5</b>	2.11	3.2	<b>94.5</b>		
2 000	96.0	6.8	5.9	<b>5.5</b>	2.15	3.3	<b>93.8</b>		93.0
2 500	94.1	6.9	5.6	<b>5.6</b>	1.91	2.8	<b>91.3</b>		
3 150	92.1	7.7	7.1	<b>6.4</b>	1.72	2.3	<b>88.0</b>		
4 000	89.9	11.3	11.4	<b>10.0</b>	1.75	2.4	<b>82.3</b>		80.7
5 000	86.3	12.3	12.3	<b>11.0</b>	1.62	2.1	<b>77.4</b>		
6 300									
8 000									
10 000									

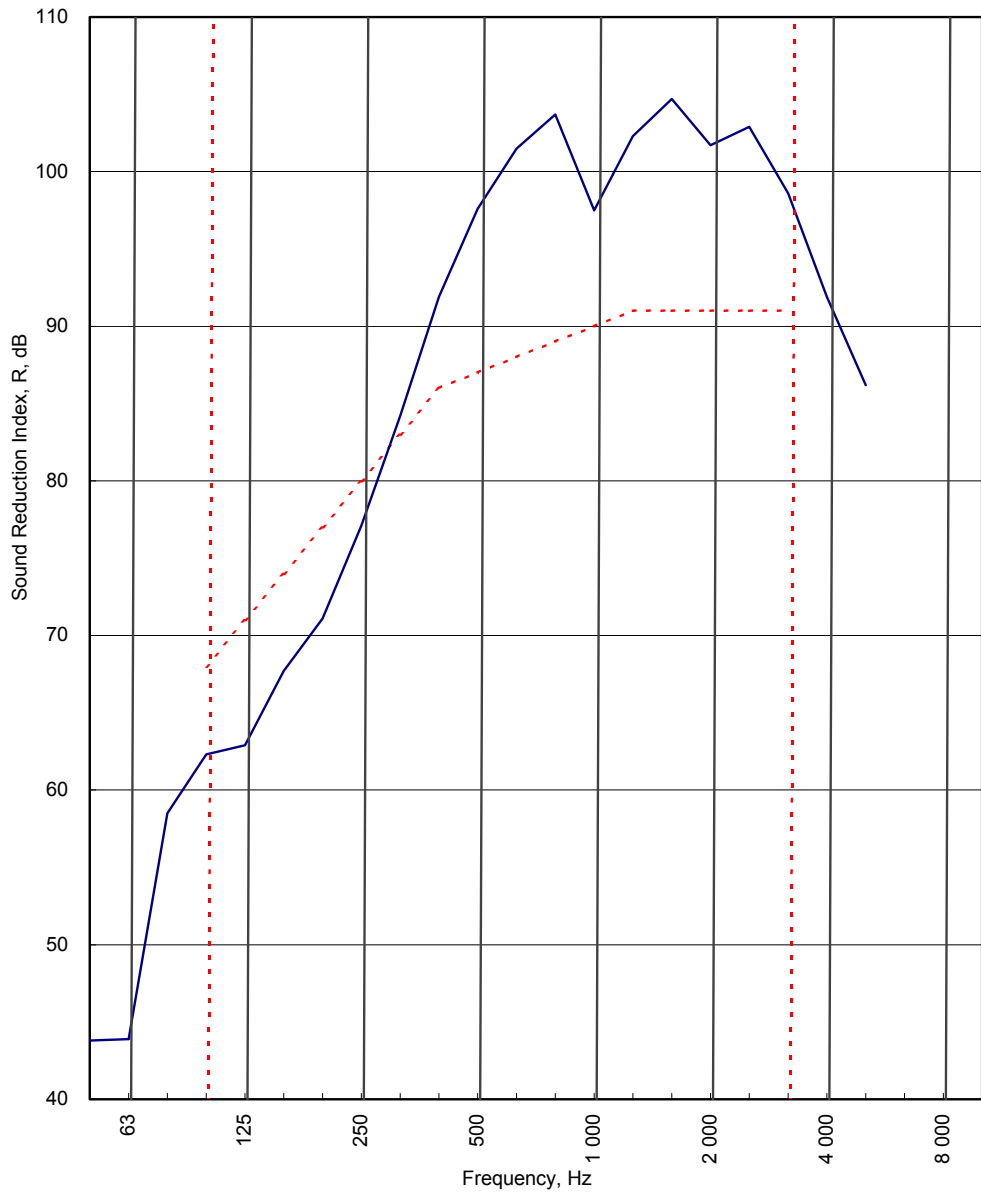
<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>30</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>	<b>(50-3150)</b>	<b>-4</b>	<b>-13</b>		
	<b>(50-5000)</b>	<b>-3</b>	<b>-13</b>		

Test Procedure: 140/3/issue 5  
Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562EA**  
 Test Date:  
**08/09/04**

Freq. Hz	R dB
50	43.8
63	43.9
80	58.5
100	62.3
125	62.9
160	67.7
200	71.1
250	77.1
315	84.2
400	91.9
500	97.6
630	101.5
800	103.7
1 000	97.5
1 250	102.3
1 600	104.7
2 000	101.7
2 500	102.9
3 150	98.6
4 000	91.9
5 000	86.2
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;C<sub>tr</sub>) = 87 (-3;-9) dB</b>		
	Max dev. 8.1 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>C<sub>50-3150</sub> = -10 dB</b>	<b>C<sub>50-5000</sub> = -9 dB</b>	<b>C<sub>100-5000</sub> = -2 dB</b>
	<b>C<sub>tr,50-3150</sub> = -23 dB</b>	<b>C<sub>tr,50-5000</sub> = -23 dB</b>	<b>C<sub>tr,100-5000</sub> = -9 dB</b>

Customer: **British Gypsum Limited**



LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995

Test Code: **H13562EA**

Test Date: **08/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>52.19</b>
Temperature, deg.C:	<b>21.5</b>	<b>22</b>
Rel. Humidity, %RH:	<b>57</b>	<b>59.7</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	89.7	43.8	27.0	43.8	0.60	-2.1	43.8		
63	90.7	42.7	22.9	42.7	0.38	-4.1	43.9		45.5
80	95.7	35.8	20.8	35.7	0.69	-1.5	58.5		
100	98.2	37.2	20.9	37.2	1.32	1.4	62.4	5.6	
125	102.3	41.5	16.2	41.5	1.58	2.1	62.9	8.1	63.8
160	108.7	43.3	16.0	43.3	1.65	2.3	67.7	6.3	
200	113.6	45.0	15.4	45.0	1.75	2.6	71.2	5.8	
250	115.5	41.2	12.0	41.2	1.87	2.9	77.2	2.8	74.8
315	113.9	32.4	13.0	32.4	1.81	2.7	84.2		
400	110.9	22.3	20.1	21.0	1.57	2.1	92.0		
500	107.8	14.1	18.1	12.8	1.78	2.7	97.7		95.4
630	105.9	8.3	18.1	7.0	1.77	2.6	101.5		
800	105.2	6.1	14.8	4.8	2.12	3.4	103.8		
1 000	103.8	11.4	13.2	10.1	2.37	3.9	97.6		100.4
1 250	102.6	5.9	11.2	4.6	2.66	4.4	102.4		
1 600	105.4	6.3	16.0	5.0	2.64	4.4	104.8		
2 000	105.9	9.4	12.6	8.1	2.43	4.0	101.8		103.0
2 500	104.3	6.1	13.8	4.8	2.13	3.4	102.9		
3 150	102.2	7.5	13.1	6.2	1.78	2.7	98.7		
4 000	100.2	12.5	14.1	11.2	1.90	2.9	91.9		89.8
5 000	96.8	14.2	14.0	12.9	1.68	2.4	86.3		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>28.6</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>87</b>	<b>-3</b>	<b>-9</b>		
	<b>(100-5000)</b>	<b>-2</b>	<b>-9</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-10</b>	<b>-23</b>		
<b>RT's &gt; factor 1.5 apart</b>					
<b>Tested Serially[ ] Real Time[ ]</b>	<b>(50-5000)</b>	<b>-9</b>	<b>-23</b>		

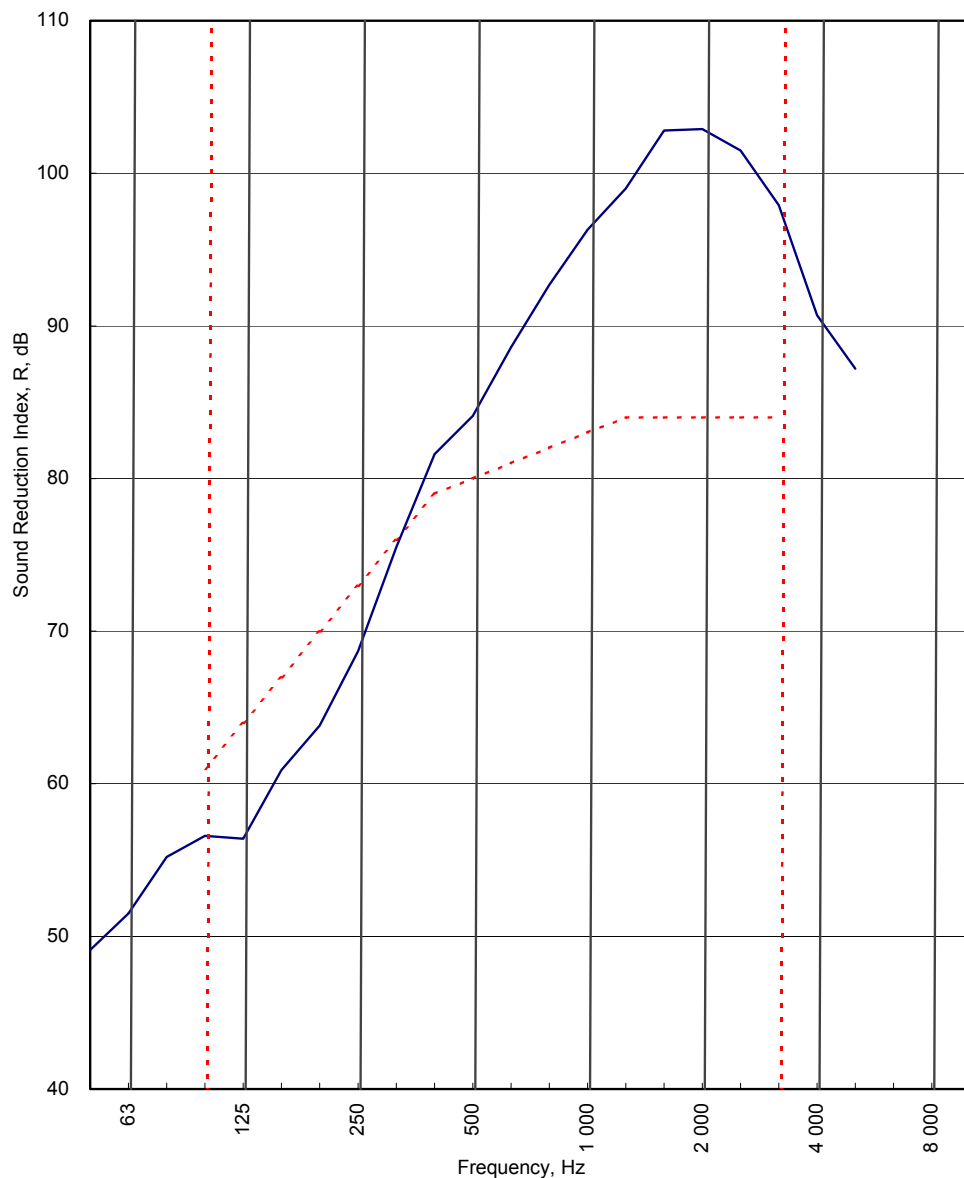
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562FA**  
 Test Date:  
**09/09/04**

Freq. Hz	R dB
50	49.1
63	51.5
80	55.2
100	56.6
125	56.4
160	60.9
200	63.8
250	68.7
315	75.5
400	81.6
500	84.1
630	88.6
800	92.7
1 000	96.3
1 250	99.0
1 600	102.8
2 000	102.9
2 500	101.5
3 150	97.9
4 000	90.7
5 000	87.2
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to  
 BS EN ISO 717-1:1997

**R<sub>w</sub> (C;C<sub>tr</sub>) = 80 (-3;-9) dB**

Max dev. 7.6 dB at 125 Hz

Evaluation based on laboratory  
 measurement results obtained by  
 an engineering method:

C<sub>50-3150</sub> = **-4 dB**

C<sub>50-5000</sub> = **-3 dB**

C<sub>100-5000</sub> = **-2 dB**

C<sub>tr,50-3150</sub> = **-12 dB**

C<sub>tr,50-5000</sub> = **-12 dB**

C<sub>tr,100-5000</sub> = **-9 dB**

Customer: **British Gypsum Limited**

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0296

**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562FA**

Test Date: **09/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

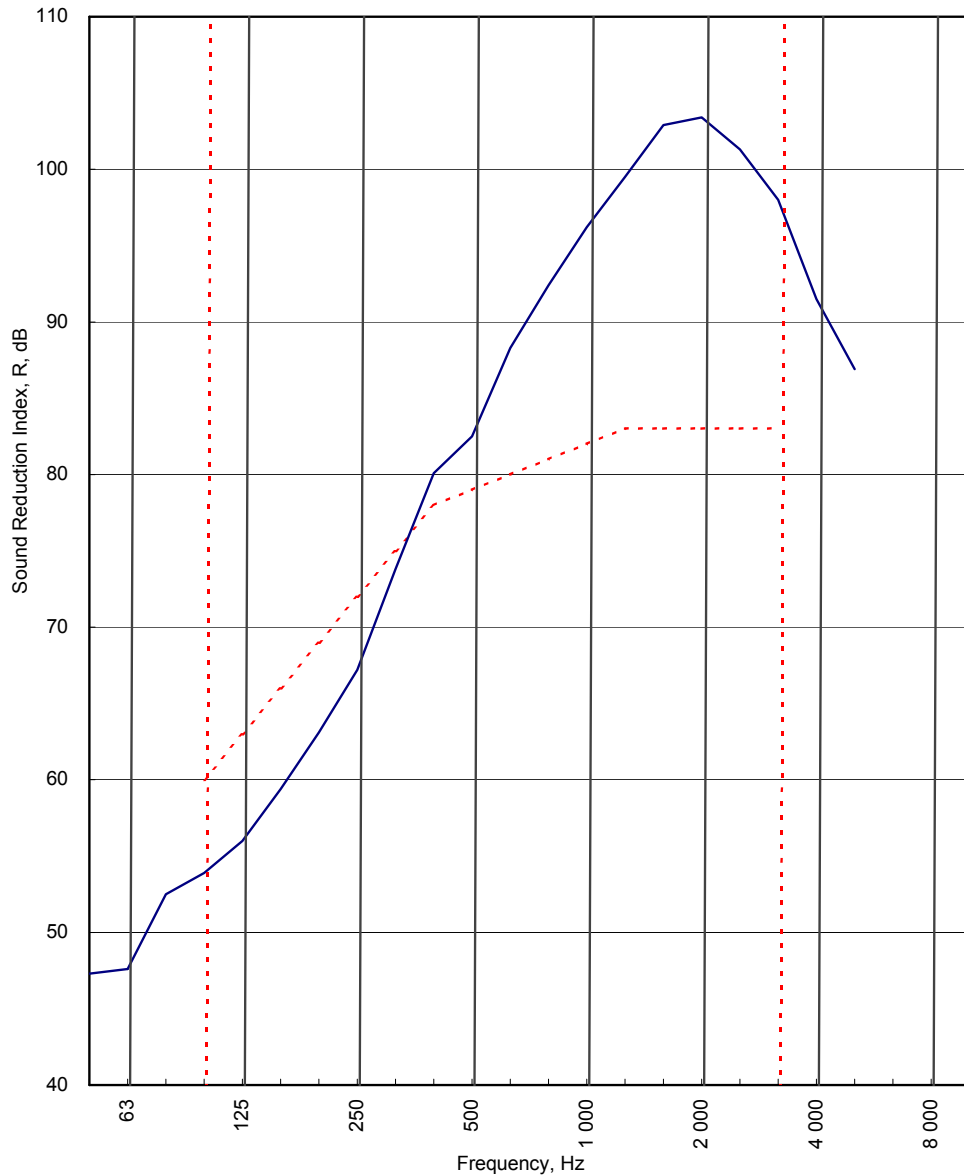
	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.01</b>
Temperature, deg.C:	<b>21.9</b>	<b>21.9</b>
Rel. Humidity, %RH:	<b>57</b>	<b>57.3</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.0	38.6	23.1	38.6	0.93	-0.3	<b>49.1</b>		
63	91.0	38.1	12.5	38.1	0.73	-1.4	<b>51.5</b>		51.3
80	94.5	38.1	11.4	38.1	0.76	-1.2	<b>55.2</b>		
100	98.5	41.0	16.5	41.0	0.82	-0.9	<b>56.6</b>	4.4	
125	102.3	45.7	11.9	45.7	0.96	-0.2	<b>56.4</b>	7.6	57.5
160	108.2	47.6	11.7	47.6	1.08	0.3	<b>60.9</b>	6.1	
200	113.3	50.4	10.9	50.4	1.22	0.9	<b>63.8</b>	6.2	
250	114.9	47.8	8.0	47.8	1.44	1.6	<b>68.7</b>	4.3	67.1
315	113.4	39.7	11.5	39.7	1.50	1.8	<b>75.5</b>	0.5	
400	110.9	30.3	17.9	<b>30.0</b>	1.17	0.7	<b>81.6</b>		
500	107.6	25.0	13.9	<b>24.6</b>	1.28	1.1	<b>84.1</b>		83.9
630	105.2	18.9	12.1	<b>17.9</b>	1.36	1.3	<b>88.6</b>		
800	105.1	15.2	7.4	<b>14.4</b>	1.58	2.0	<b>92.7</b>		
1 000	103.9	11.2	11.2	<b>9.9</b>	1.68	2.3	<b>96.3</b>		95.2
1 250	102.3	7.4	8.1	<b>6.1</b>	1.89	2.8	<b>99.0</b>		
1 600	105.2	6.8	10.0	<b>5.5</b>	2.03	3.1	<b>102.8</b>		
2 000	105.6	7.4	11.7	<b>6.1</b>	2.20	3.4	<b>102.9</b>		102.4
2 500	103.9	6.5	6.9	<b>5.2</b>	1.90	2.8	<b>101.5</b>		
3 150	102.0	7.5	7.3	<b>6.2</b>	1.61	2.1	<b>97.9</b>		
4 000	99.8	12.6	11.6	<b>11.3</b>	1.65	2.2	<b>90.7</b>		90.1
5 000	96.4	12.2	12.3	<b>10.9</b>	1.47	1.7	<b>87.2</b>		
6 300									
8 000									
10 000									
<b>Single Figure Ratings</b>		<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>			<b>29.1</b>	
<b>BS EN ISO 717-1: 1997</b>		<b>dB</b>	<b>dB</b>	<b>dB</b>					
		<b>80</b>	<b>-3</b>	<b>-9</b>					
		<b>(100-5000)</b>	<b>-2</b>	<b>-9</b>					
<b>Background Corrected</b>		<b>(50-3150)</b>	<b>-4</b>	<b>-12</b>					
		<b>(50-5000)</b>	<b>-3</b>	<b>-12</b>					
					Test Procedure: 140/3/issue 5				
					Worksheet: 140_3_1.XLS				



Test Code:  
**H13562GA**  
 Test Date:  
**10/09/04**

Freq. Hz	R dB
50	47.3
63	47.6
80	52.5
100	53.9
125	56.0
160	59.4
200	63.1
250	67.2
315	73.8
400	80.1
500	82.5
630	88.3
800	92.4
1 000	96.2
1 250	99.5
1 600	102.9
2 000	103.4
2 500	101.3
3 150	98.0
4 000	91.5
5 000	86.9
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to  
 BS EN ISO 717-1:1997

**R<sub>w</sub> (C;Ctr) = 79 (-3;-9) dB**

Max dev. 7 dB at 125 Hz

Evaluation based on laboratory  
 measurement results obtained by  
 an engineering method:

C<sub>50-3150</sub> = **-4 dB**

C<sub>50-5000</sub> = **-3 dB**

C<sub>100-5000</sub> = **-2 dB**

C<sub>tr,50-3150</sub> = **-14 dB**

C<sub>tr,50-5000</sub> = **-14 dB**

C<sub>tr,100-5000</sub> = **-9 dB**



LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995

Test Code: **H13562GA**

Test Date: **10/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.22</b>
Temperature, deg.C:	<b>20.1</b>	<b>20.6</b>
Rel. Humidity, %RH:	<b>65.5</b>	<b>63</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	87.2	38.9	25.9	<b>38.7</b>	0.76	-1.2	<b>47.3</b>		
63	89.8	39.7	12.0	39.7	0.57	-2.5	<b>47.6</b>		48.6
80	94.4	40.3	10.4	40.3	0.69	-1.6	<b>52.5</b>		
100	98.0	43.5	14.2	43.5	0.88	-0.6	<b>53.9</b>	6.1	
125	102.1	47.1	11.0	47.1	1.26	1.0	<b>56.0</b>	7.0	55.9
160	108.4	49.4	11.4	49.4	1.11	0.4	<b>59.4</b>	6.6	
200	113.9	52.5	12.1	52.5	1.50	1.7	<b>63.1</b>	5.9	
250	114.6	49.5	10.4	49.5	1.64	2.1	<b>67.2</b>	4.8	66.2
315	113.9	41.1	12.4	41.1	1.26	1.0	<b>73.8</b>	1.2	
400	111.0	31.9	17.2	<b>31.8</b>	1.24	0.9	<b>80.1</b>		
500	107.5	26.5	15.3	<b>26.2</b>	1.32	1.2	<b>82.5</b>		82.5
630	105.3	19.9	16.3	<b>18.6</b>	1.46	1.6	<b>88.3</b>		
800	105.1	16.2	13.6	<b>14.9</b>	1.66	2.2	<b>92.4</b>		
1 000	103.6	11.5	12.4	<b>10.2</b>	1.92	2.8	<b>96.2</b>		95.1
1 250	102.5	7.7	10.2	<b>6.4</b>	2.21	3.4	<b>99.5</b>		
1 600	105.2	7.1	14.0	<b>5.8</b>	2.24	3.5	<b>102.9</b>		
2 000	106.0	7.4	11.5	<b>6.1</b>	2.23	3.5	<b>103.4</b>		102.4
2 500	103.7	6.4	13.1	<b>5.1</b>	1.87	2.7	<b>101.3</b>		
3 150	101.9	7.4	12.6	<b>6.1</b>	1.65	2.2	<b>98.0</b>		
4 000	100.1	12.2	12.4	<b>10.9</b>	1.71	2.3	<b>91.5</b>		90.1
5 000	96.7	13.0	13.1	<b>11.7</b>	1.56	1.9	<b>86.9</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>31.6</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>79</b>	<b>-3</b>	<b>-9</b>		
	<b>(100-5000)</b>	<b>-2</b>	<b>-9</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-4</b>	<b>-14</b>		
	<b>(50-5000)</b>	<b>-3</b>	<b>-14</b>		

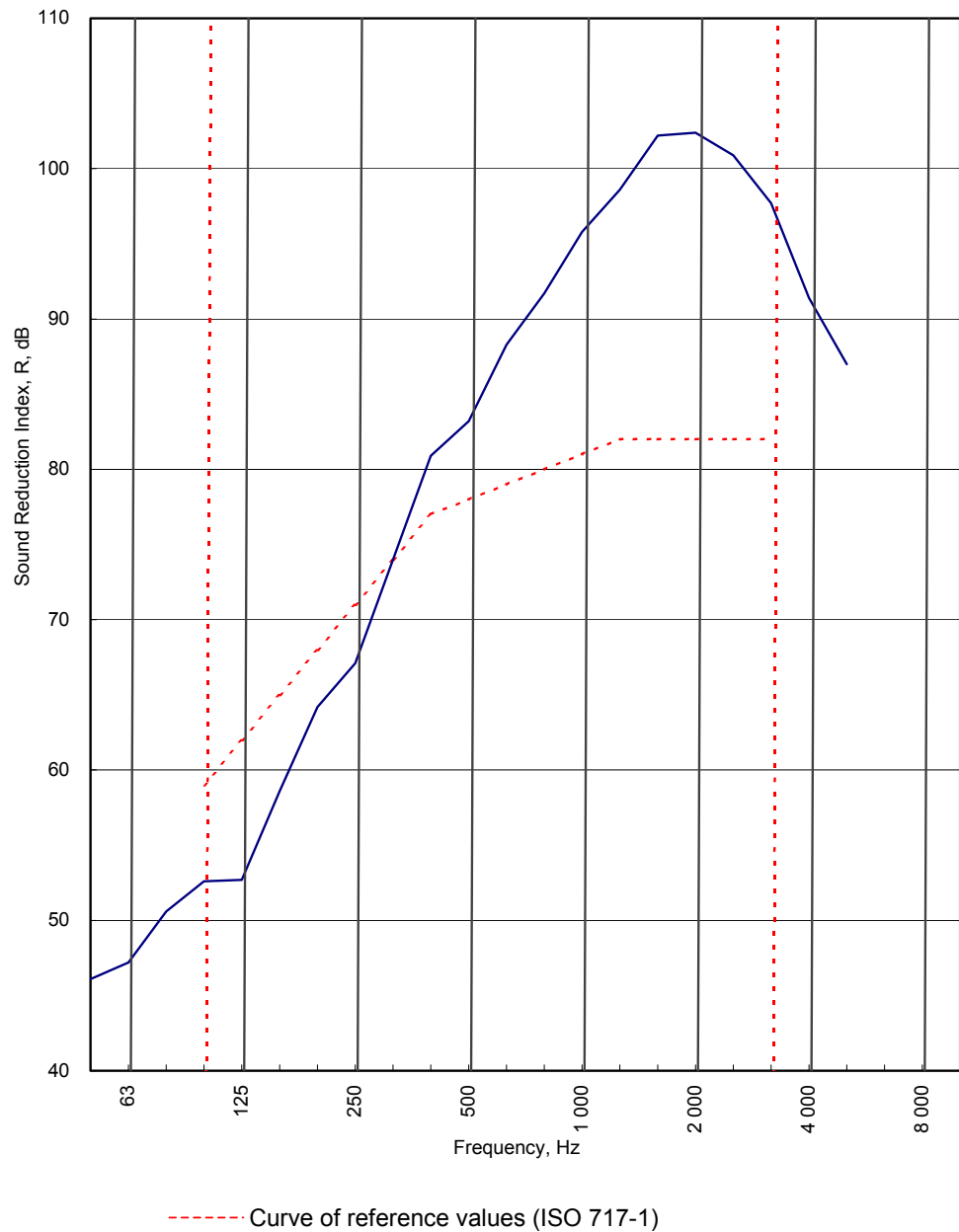
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
H13562HA  
Test Date:  
10/09/04

Freq. Hz	R dB
50	46.1
63	47.2
80	50.6
100	52.6
125	52.7
160	58.6
200	64.2
250	67.1
315	74.0
400	80.9
500	83.2
630	88.3
800	91.7
1 000	95.8
1 250	98.6
1 600	102.2
2 000	102.4
2 500	100.9
3 150	97.7
4 000	91.4
5 000	87.0
6 300	
8 000	
10 000	



Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 78 (-3;-10) dB</b>		
	Max dev. 9.3 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	C <sub>50-3150</sub> = -5 dB	C <sub>50-5000</sub> = -4 dB	C <sub>100-5000</sub> = -2 dB
	C <sub>tr,50-3150</sub> = -14 dB	C <sub>tr,50-5000</sub> = -14 dB	C <sub>tr,100-5000</sub> = -10 dB

Customer: British Gypsum Limited



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562HA**

Test Date: **10/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.35</b>
Temperature, deg.C:	<b>21</b>	<b>20.9</b>
Rel. Humidity, %RH:	<b>65</b>	<b>64.6</b>

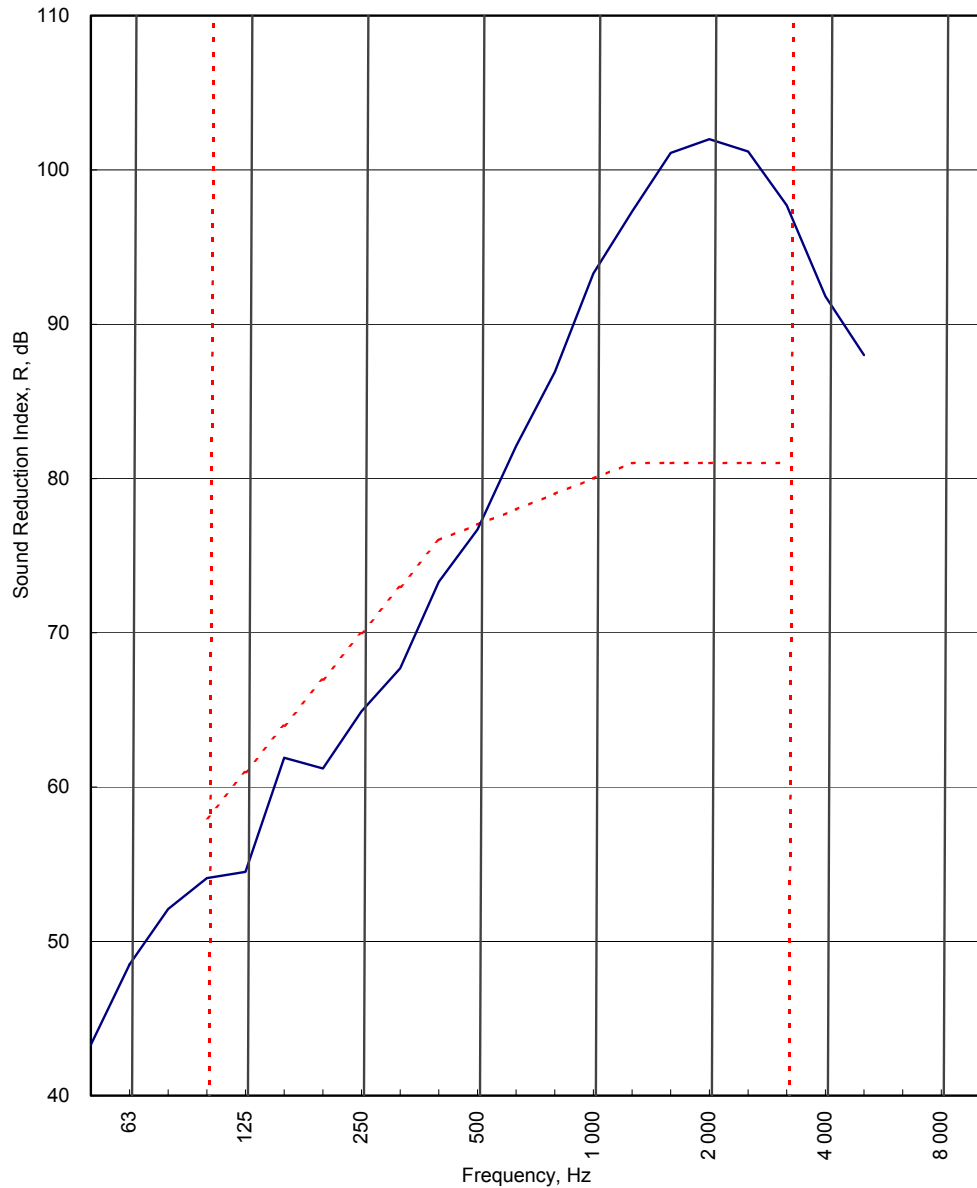
Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.4	41.0	24.0	41.0	0.74	-1.3	<b>46.1</b>		
63	90.6	40.9	15.8	40.9	0.57	-2.5	<b>47.2</b>		47.6
80	95.1	42.7	13.1	42.7	0.66	-1.8	<b>50.6</b>		
100	98.8	45.6	14.2	45.6	0.88	-0.6	<b>52.6</b>	6.4	
125	101.7	48.8	10.8	48.8	0.96	-0.2	<b>52.7</b>	9.3	53.9
160	108.4	49.5	8.7	49.5	0.93	-0.3	<b>58.6</b>	6.4	
200	114.1	51.2	9.1	51.2	1.35	1.3	<b>64.2</b>	3.8	
250	114.7	49.4	6.4	49.4	1.53	1.8	<b>67.1</b>	3.9	66.9
315	113.4	41.0	6.8	41.0	1.47	1.6	<b>74.0</b>		
400	110.8	31.4	14.5	31.4	1.41	1.5	<b>80.9</b>		
500	107.7	25.6	6.6	25.6	1.29	1.1	<b>83.2</b>		83.2
630	105.7	19.4	5.1	<b>19.2</b>	1.53	1.8	<b>88.3</b>		
800	105.0	15.7	4.6	<b>15.3</b>	1.58	2.0	<b>91.7</b>		
1 000	103.6	11.9	8.7	<b>10.6</b>	1.92	2.8	<b>95.8</b>		94.4
1 250	102.1	7.9	4.8	<b>6.6</b>	2.04	3.1	<b>98.6</b>		
1 600	105.2	7.8	4.9	<b>6.5</b>	2.25	3.5	<b>102.2</b>		
2 000	105.7	8.2	6.3	<b>6.9</b>	2.32	3.6	<b>102.4</b>		101.8
2 500	103.9	7.1	5.7	<b>5.8</b>	1.91	2.8	<b>100.9</b>		
3 150	102.4	8.3	7.2	<b>7.0</b>	1.69	2.3	<b>97.7</b>		
4 000	100.1	12.2	11.7	<b>10.9</b>	1.68	2.2	<b>91.4</b>		90.2
5 000	96.6	12.8	11.6	<b>11.5</b>	1.55	1.9	<b>87.0</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>29.8</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>78</b>	<b>-3</b>	<b>-10</b>		
	<b>(100-5000)</b>	<b>-2</b>	<b>-10</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-5</b>	<b>-14</b>		
	<b>(50-5000)</b>	<b>-4</b>	<b>-14</b>		
				Test Procedure: 140/3/issue 5	
				Worksheet: 140_3_1.XLS	



Test Code:  
H13562IA  
Test Date:  
13/09/04

Freq. Hz	R dB
50	43.3
63	48.5
80	52.1
100	54.1
125	54.5
160	61.9
200	61.2
250	64.9
315	67.7
400	73.3
500	76.7
630	82.1
800	86.9
1 000	93.3
1 250	97.3
1 600	101.1
2 000	102.0
2 500	101.2
3 150	97.7
4 000	91.8
5 000	88.0
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;C<sub>tr</sub>) = 77 (-2;-8) dB</b>		
	<b>Max dev. 6.5 dB at 125 Hz</b>		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>C<sub>50-3150</sub> = -4 dB</b>	<b>C<sub>50-5000</sub> = -3 dB</b>	<b>C<sub>100-5000</sub> = -1 dB</b>
	<b>C<sub>tr,50-3150</sub> = -13 dB</b>	<b>C<sub>tr,50-5000</sub> = -13 dB</b>	<b>C<sub>tr,100-5000</sub> = -8 dB</b>

Customer: **British Gypsum Limited**

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**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562IA**

Test Date: **13/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

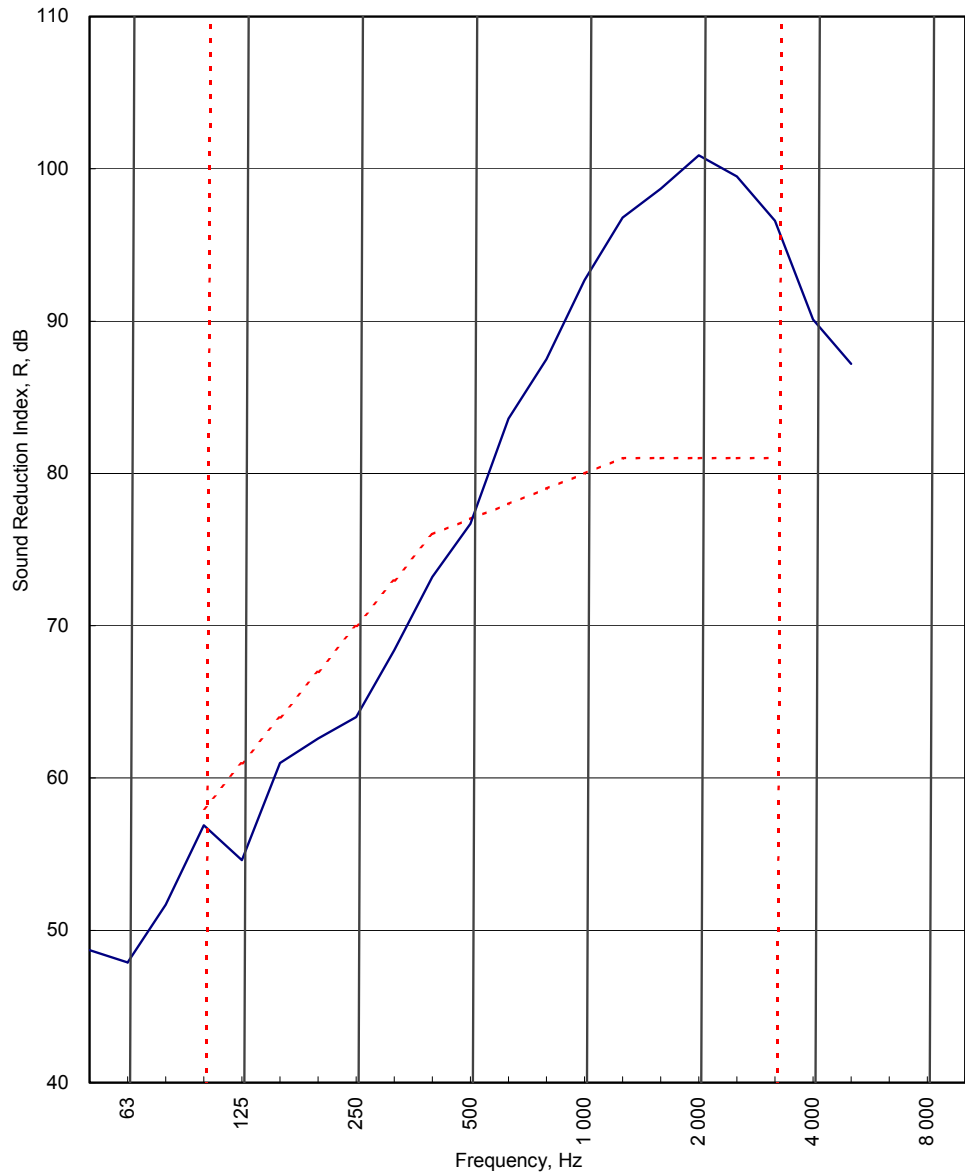
	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>55.82</b>
Temperature, deg.C:	<b>19.1</b>	<b>18.8</b>
Rel. Humidity, %RH:	<b>52</b>	<b>53.8</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	86.2	39.8	10.5	39.8	0.51	-3.1	<b>43.3</b>		
63	90.7	40.9	9.6	40.9	0.76	-1.3	<b>48.5</b>		46.5
80	96.2	42.8	8.6	42.8	0.77	-1.3	<b>52.1</b>		
100	98.0	43.3	7.2	43.3	0.90	-0.6	<b>54.1</b>	3.9	
125	102.0	47.9	7.2	47.9	1.13	0.4	<b>54.5</b>	6.5	55.7
160	108.9	47.8	5.9	47.8	1.25	0.8	<b>61.9</b>	2.1	
200	113.5	53.2	10.8	53.2	1.27	0.9	<b>61.2</b>	5.8	
250	114.5	51.2	7.1	51.2	1.50	1.6	<b>64.9</b>	5.1	63.8
315	113.1	47.0	8.7	47.0	1.50	1.6	<b>67.7</b>	5.3	
400	111.1	38.6	14.8	38.6	1.24	0.8	<b>73.3</b>	2.7	
500	107.6	32.2	9.8	32.2	1.40	1.3	<b>76.7</b>	0.3	76.1
630	105.4	24.5	8.6	24.5	1.35	1.2	<b>82.1</b>		
800	104.9	19.7	6.9	<b>19.5</b>	1.47	1.5	<b>86.9</b>		
1 000	103.5	13.8	10.4	<b>12.5</b>	1.75	2.3	<b>93.3</b>		90.5
1 250	102.5	9.3	6.5	<b>8.0</b>	1.98	2.8	<b>97.3</b>		
1 600	105.3	8.5	6.3	<b>7.2</b>	2.05	3.0	<b>101.1</b>		
2 000	105.8	7.8	7.2	<b>6.5</b>	1.93	2.7	<b>102.0</b>		101.4
2 500	103.8	5.9	7.2	<b>4.6</b>	1.63	2.0	<b>101.2</b>		
3 150	102.0	7.3	8.3	<b>6.0</b>	1.54	1.7	<b>97.7</b>		
4 000	99.7	11.0	10.9	<b>9.7</b>	1.58	1.8	<b>91.8</b>		90.9
5 000	96.6	11.2	11.0	<b>9.9</b>	1.39	1.3	<b>88.0</b>		
6 300									
8 000									
10 000									
<b>Single Figure Ratings</b>		<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>			<b>31.7</b>	
<b>BS EN ISO 717-1: 1997</b>		<b>dB</b>	<b>dB</b>	<b>dB</b>					
		<b>77</b>	<b>-2</b>	<b>-8</b>					
		<b>(100-5000)</b>	<b>-1</b>	<b>-8</b>					
<b>Background Corrected</b>		<b>(50-3150)</b>	<b>-4</b>	<b>-13</b>					
		<b>(50-5000)</b>	<b>-3</b>	<b>-13</b>					
							Test Procedure: 140/3/issue 5		
							Worksheet: 140_3_1.XLS		



Test Code:  
**H13562JA**  
 Test Date:  
**13/09/04**

Freq. Hz	R dB
50	48.7
63	47.9
80	51.7
100	56.9
125	54.6
160	61.0
200	62.6
250	64.0
315	68.4
400	73.2
500	76.7
630	83.6
800	87.5
1 000	92.7
1 250	96.8
1 600	98.7
2 000	100.9
2 500	99.5
3 150	96.6
4 000	90.1
5 000	87.2
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 77 (-2;-7) dB</b>		
	Max dev. 6.4 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	$C_{50-3150} = -3$ dB	$C_{50-5000} = -2$ dB	$C_{100-5000} = -1$ dB
	$C_{tr,50-3150} = -12$ dB	$C_{tr,50-5000} = -12$ dB	$C_{tr,100-5000} = -7$ dB

Customer: **British Gypsum Limited**

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**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562JA**

Test Date: **13/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>55.69</b>
Temperature, deg.C:	<b>19.6</b>	<b>19.8</b>
Rel. Humidity, %RH:	<b>47.6</b>	<b>50.6</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	91.5	39.8	13.9	39.8	0.52	-3.0	<b>48.7</b>		
63	89.9	39.9	11.6	39.9	0.63	-2.1	<b>47.9</b>		49.2
80	96.1	42.7	12.6	42.7	0.69	-1.7	<b>51.7</b>		
100	99.1	41.8	15.1	41.8	0.94	-0.4	<b>56.9</b>	1.1	
125	101.5	46.9	11.2	46.9	1.02	0.0	<b>54.6</b>	6.4	56.8
160	108.2	48.3	8.9	48.3	1.33	1.1	<b>61.0</b>	3.0	
200	112.8	51.9	12.6	51.9	1.53	1.7	<b>62.6</b>	4.4	
250	114.5	51.3	11.2	51.3	1.25	0.8	<b>64.0</b>	6.0	64.4
315	113.5	47.1	13.7	47.1	1.63	2.0	<b>68.4</b>	4.6	
400	110.6	38.3	21.0	38.3	1.28	0.9	<b>73.2</b>	2.8	
500	107.3	31.8	19.4	<b>31.5</b>	1.27	0.9	<b>76.7</b>	0.3	76.1
630	105.2	24.4	18.8	<b>23.1</b>	1.45	1.5	<b>83.6</b>		
800	104.6	20.0	15.8	<b>18.7</b>	1.48	1.6	<b>87.5</b>		
1 000	103.3	13.9	13.7	<b>12.6</b>	1.65	2.0	<b>92.7</b>		90.7
1 250	102.2	9.6	11.8	<b>8.3</b>	2.01	2.9	<b>96.8</b>		
1 600	105.0	10.5	16.3	<b>9.2</b>	2.02	2.9	<b>98.7</b>		
2 000	105.4	8.6	13.4	<b>7.3</b>	1.96	2.8	<b>100.9</b>		99.6
2 500	103.3	7.1	15.2	<b>5.8</b>	1.62	2.0	<b>99.5</b>		
3 150	101.5	8.0	14.4	<b>6.7</b>	1.57	1.8	<b>96.6</b>		
4 000	99.2	12.2	14.2	<b>10.9</b>	1.57	1.8	<b>90.1</b>		89.9
5 000	96.2	11.6	13.4	<b>10.3</b>	1.39	1.3	<b>87.2</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>28.6</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>77</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-12</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-12</b>		

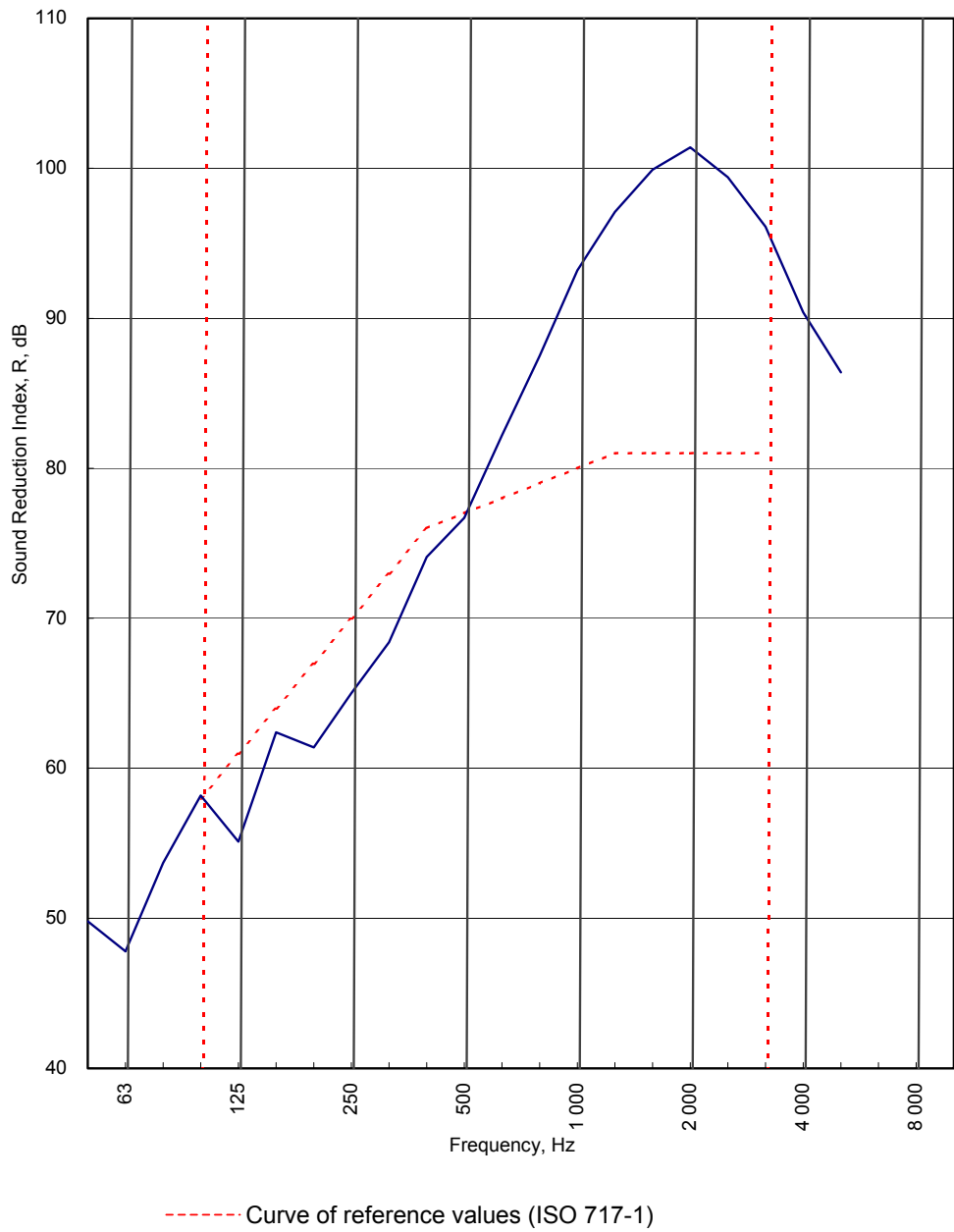
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562KA**  
 Test Date:  
**14/09/04**

Freq. Hz	R dB
50	49.8
63	47.8
80	53.7
100	58.2
125	55.1
160	62.4
200	61.4
250	65.0
315	68.4
400	74.1
500	76.7
630	82.2
800	87.5
1 000	93.2
1 250	97.1
1 600	99.9
2 000	101.4
2 500	99.4
3 150	96.1
4 000	90.4
5 000	86.4
6 300	
8 000	
10 000	



Rating according to <b>BS EN ISO 717-1:1997</b>  Evaluation based on laboratory measurement results obtained by an engineering method:	<b>R<sub>w</sub> (C;Ctr) = 77 (-1;-7) dB</b> <b>Max dev. 5.9 dB at 125 Hz</b>  $C_{50-3150} = -3 \text{ dB}$ $C_{50-5000} = -2 \text{ dB}$ $C_{100-5000} = -1 \text{ dB}$ $C_{tr,50-3150} = -11 \text{ dB}$ $C_{tr,50-5000} = -11 \text{ dB}$ $C_{tr,100-5000} = -7 \text{ dB}$
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Customer: **British Gypsum Limited**





**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562KA**

Test Date: **14/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>55.69</b>
Temperature, deg.C:	<b>19.2</b>	<b>18.6</b>
Rel. Humidity, %RH:	<b>55.5</b>	<b>57</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.4	35.8	10.2	35.8	0.54	-2.8	<b>49.8</b>		
63	88.4	38.0	10.4	38.0	0.57	-2.6	<b>47.8</b>		49.8
80	94.6	39.4	7.5	39.4	0.73	-1.5	<b>53.7</b>		
100	98.8	40.3	15.5	40.3	0.97	-0.3	<b>58.2</b>		
125	101.6	46.1	6.9	46.1	0.94	-0.4	<b>55.1</b>	5.9	57.6
160	108.3	47.1	5.6	47.1	1.35	1.2	<b>62.4</b>	1.6	
200	112.9	52.4	10.1	52.4	1.28	0.9	<b>61.4</b>	5.6	
250	114.2	50.6	5.0	50.6	1.44	1.4	<b>65.0</b>	5.0	64.0
315	113.4	46.1	5.8	46.1	1.33	1.1	<b>68.4</b>	4.6	
400	110.4	37.5	13.0	37.5	1.37	1.2	<b>74.1</b>	1.9	
500	106.6	30.7	6.0	30.7	1.24	0.8	<b>76.7</b>	0.3	76.6
630	105.0	23.9	4.6	23.9	1.33	1.1	<b>82.2</b>		
800	104.3	18.9	4.6	<b>18.7</b>	1.58	1.9	<b>87.5</b>		
1 000	103.0	13.4	10.0	<b>12.1</b>	1.77	2.3	<b>93.2</b>		90.9
1 250	102.3	9.4	5.2	<b>8.1</b>	2.02	2.9	<b>97.1</b>		
1 600	104.6	8.7	5.2	<b>7.4</b>	1.92	2.7	<b>99.9</b>		
2 000	105.2	7.8	6.3	<b>6.5</b>	1.94	2.7	<b>101.4</b>		100.2
2 500	103.1	7.0	5.6	<b>5.7</b>	1.62	2.0	<b>99.4</b>		
3 150	101.1	7.9	7.0	<b>6.6</b>	1.48	1.6	<b>96.1</b>		
4 000	99.2	12.0	10.8	<b>10.7</b>	1.58	1.9	<b>90.4</b>		89.4
5 000	95.9	12.1	10.6	<b>10.8</b>	1.38	1.3	<b>86.4</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>24.9</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>77</b>	<b>-1</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>	<b>(50-3150)</b>	<b>-3</b>	<b>-11</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-11</b>		

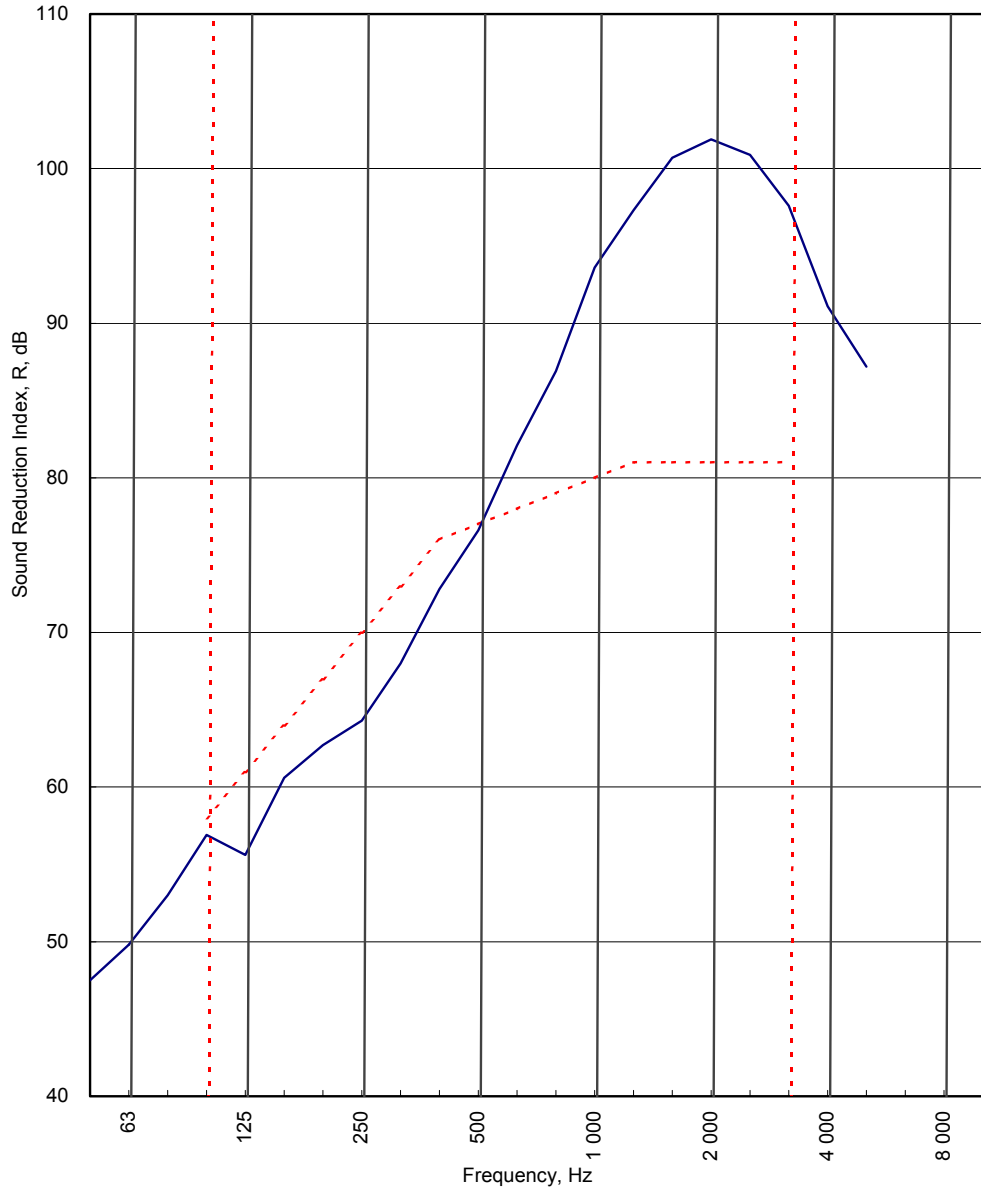
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562LA**  
 Test Date:  
**14/09/04**

Freq. Hz	R dB
50	47.5
63	49.8
80	53.0
100	56.9
125	55.6
160	60.6
200	62.7
250	64.3
315	68.0
400	72.8
500	76.6
630	82.1
800	86.9
1 000	93.6
1 250	97.3
1 600	100.7
2 000	101.9
2 500	100.9
3 150	97.6
4 000	91.1
5 000	87.2
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 77 (-2;-7) dB</b>		
	Max dev. 5.7 dB at 250 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	C <sub>50-3150</sub> = <b>-3 dB</b>	C <sub>50-5000</sub> = <b>-2 dB</b>	C <sub>100-5000</sub> = <b>-1 dB</b>
	C <sub>tr,50-3150</sub> = <b>-11 dB</b>	C <sub>tr,50-5000</sub> = <b>-11 dB</b>	C <sub>tr,100-5000</sub> = <b>-7 dB</b>

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562LA**

Test Date: **14/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>55.56</b>
Temperature, deg.C:	<b>20</b>	<b>21</b>
Rel. Humidity, %RH:	<b>53.8</b>	<b>52.2</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.2	37.7	19.4	37.7	0.52	-3.0	<b>47.5</b>		
63	91.1	39.4	11.1	39.4	0.67	-1.9	<b>49.8</b>		49.6
80	95.1	40.6	10.5	40.6	0.73	-1.5	<b>53.0</b>		
100	98.8	41.1	13.2	41.1	0.85	-0.8	<b>56.9</b>	1.1	
125	102.4	46.6	9.1	46.6	0.99	-0.2	<b>55.6</b>	5.4	57.2
160	108.1	48.6	6.5	48.6	1.33	1.1	<b>60.6</b>	3.4	
200	113.8	51.9	7.3	51.9	1.24	0.8	<b>62.7</b>	4.3	
250	114.4	51.0	3.9	51.0	1.26	0.9	<b>64.3</b>	5.7	64.5
315	113.3	46.5	4.7	46.5	1.37	1.2	<b>68.0</b>	5.0	
400	110.5	38.7	15.6	38.7	1.29	1.0	<b>72.8</b>	3.2	
500	107.2	31.3	5.3	31.3	1.22	0.7	<b>76.6</b>	0.4	75.7
630	105.4	24.6	3.9	24.6	1.39	1.3	<b>82.1</b>		
800	104.4	19.4	3.3	19.4	1.58	1.9	<b>86.9</b>		
1 000	103.2	13.3	7.9	<b>12.0</b>	1.79	2.4	<b>93.6</b>		90.5
1 250	102.3	9.1	4.5	<b>7.8</b>	1.95	2.8	<b>97.3</b>		
1 600	105.1	8.5	4.9	<b>7.2</b>	1.98	2.8	<b>100.7</b>		
2 000	105.9	8.0	6.3	<b>6.7</b>	1.91	2.7	<b>101.9</b>		101.1
2 500	103.6	6.1	5.2	<b>4.8</b>	1.66	2.1	<b>100.9</b>		
3 150	101.6	7.1	6.9	<b>5.8</b>	1.57	1.8	<b>97.6</b>		
4 000	99.8	11.8	11.2	<b>10.5</b>	1.54	1.8	<b>91.1</b>		90.2
5 000	96.5	11.9	11.2	<b>10.6</b>	1.39	1.3	<b>87.2</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>28.5</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>77</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-11</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-11</b>		

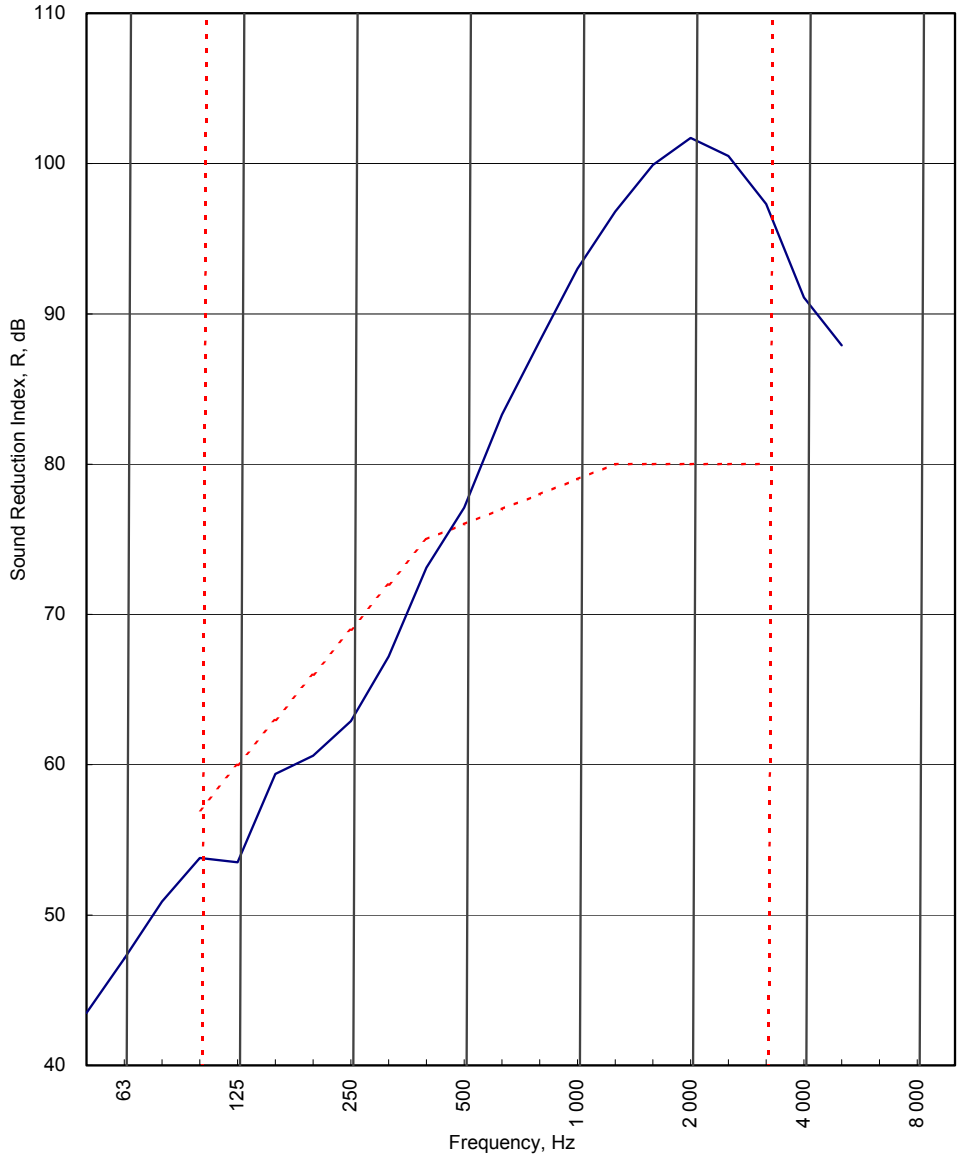
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562MA**  
 Test Date:  
**15/09/04**

Freq. Hz	R dB
50	43.5
63	47.1
80	50.9
100	53.8
125	53.5
160	59.4
200	60.6
250	62.9
315	67.2
400	73.1
500	77.1
630	83.3
800	88.2
1 000	93.0
1 250	96.8
1 600	99.9
2 000	101.7
2 500	100.5
3 150	97.3
4 000	91.1
5 000	87.9
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 76 (-2;-8) dB</b>		
	Max dev. 6.5 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>C<sub>50-3150</sub> = -3 dB</b>	<b>C<sub>50-5000</sub> = -2 dB</b>	<b>C<sub>100-5000</sub> = -1 dB</b>
	<b>C<sub>tr,50-3150</sub> = -13 dB</b>	<b>C<sub>tr,50-5000</sub> = -13 dB</b>	<b>C<sub>tr,100-5000</sub> = -8 dB</b>

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562MA**

Test Date: **15/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>55.82</b>
Temperature, deg.C:	<b>19.1</b>	<b>19.6</b>
Rel. Humidity, %RH:	<b>57.4</b>	<b>57.2</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.6	42.3	16.5	42.3	0.54	-2.8	<b>43.5</b>		
63	89.8	40.5	13.4	40.5	0.62	-2.2	<b>47.1</b>		46.2
80	95.5	43.0	11.9	43.0	0.72	-1.6	<b>50.9</b>		
100	99.0	44.5	14.3	44.5	0.88	-0.7	<b>53.8</b>	3.2	
125	102.7	49.4	11.9	49.4	1.09	0.2	<b>53.5</b>	6.5	54.9
160	107.7	49.3	10.0	49.3	1.31	1.0	<b>59.4</b>	3.6	
200	113.5	53.7	12.0	53.7	1.23	0.8	<b>60.6</b>	5.4	
250	114.2	52.6	17.6	52.6	1.39	1.3	<b>62.9</b>	6.1	62.8
315	113.7	47.7	17.4	47.7	1.37	1.2	<b>67.2</b>	4.8	
400	110.4	38.6	19.7	38.6	1.39	1.3	<b>73.1</b>	1.9	
500	107.2	31.9	19.4	<b>31.6</b>	1.47	1.5	<b>77.1</b>		76.1
630	105.2	24.5	20.6	<b>23.2</b>	1.40	1.3	<b>83.3</b>		
800	104.7	19.8	17.0	<b>18.5</b>	1.62	2.0	<b>88.2</b>		
1 000	103.5	13.9	16.7	<b>12.6</b>	1.66	2.1	<b>93.0</b>		91.3
1 250	102.4	9.6	15.3	<b>8.3</b>	1.94	2.7	<b>96.8</b>		
1 600	105.2	9.1	22.1	<b>7.8</b>	1.85	2.5	<b>99.9</b>		
2 000	105.8	8.0	25.7	<b>6.7</b>	1.88	2.6	<b>101.7</b>		100.6
2 500	103.6	6.4	18.1	<b>5.1</b>	1.64	2.0	<b>100.5</b>		
3 150	101.9	7.5	14.4	<b>6.2</b>	1.51	1.6	<b>97.3</b>		
4 000	99.8	11.8	15.2	<b>10.5</b>	1.57	1.8	<b>91.1</b>		90.6
5 000	96.7	11.4	13.4	<b>10.1</b>	1.39	1.3	<b>87.9</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>31.5</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-2</b>	<b>-8</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-8</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-3</b>	<b>-13</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-13</b>		

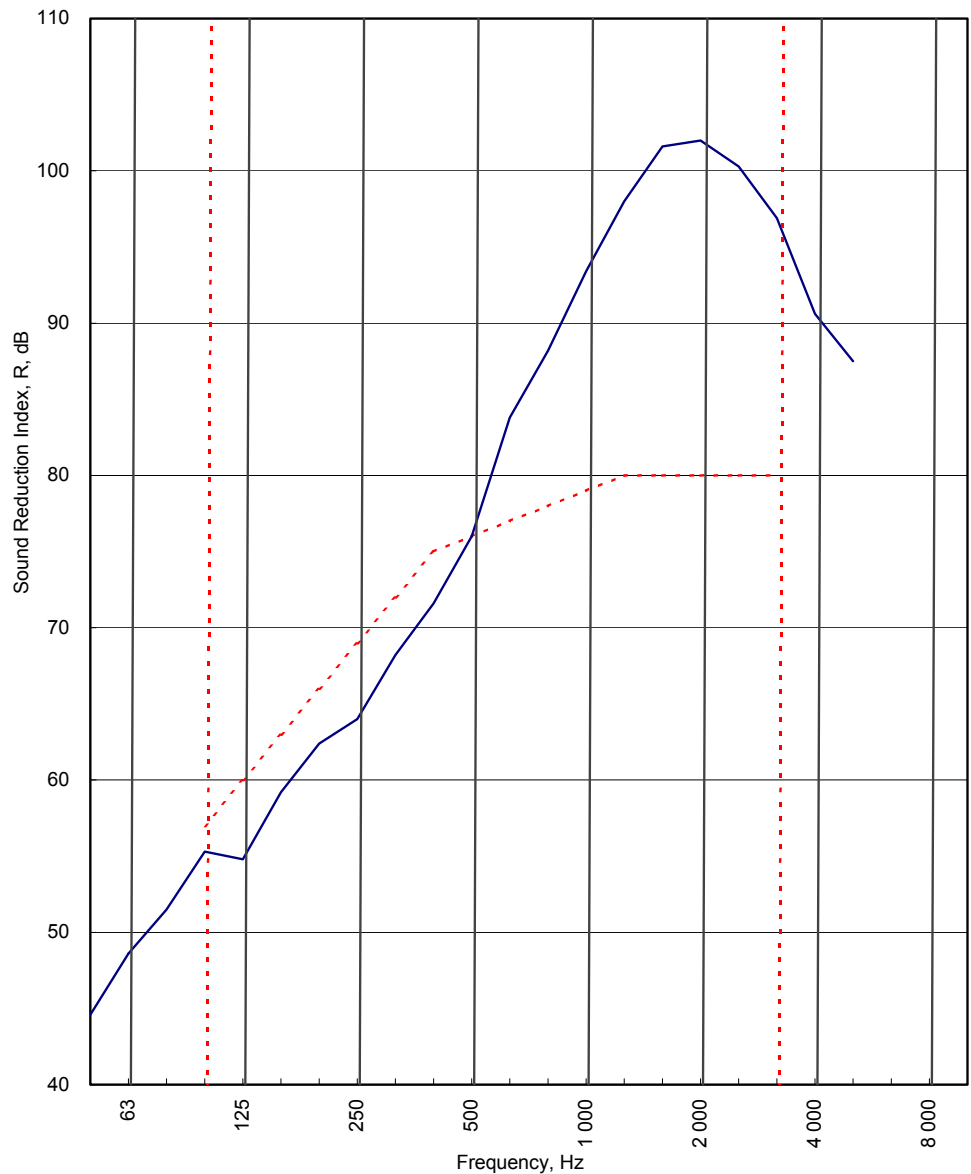
Test Procedure: 140/3/issue 5

Worksheet: 140\_3\_1.XLS



Test Code:  
**H13562NA**  
 Test Date:  
**15/09/04**

Freq. Hz	R dB
50	44.6
63	48.6
80	51.5
100	55.3
125	54.8
160	59.2
200	62.4
250	64.0
315	68.2
400	71.6
500	76.0
630	83.8
800	88.2
1 000	93.4
1 250	98.0
1 600	101.6
2 000	102.0
2 500	100.3
3 150	96.9
4 000	90.6
5 000	87.5
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;Ctr) = 76 (-1;-7) dB</b>		
	Max dev. 5.2 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	$C_{50-3150} = -3$ dB	$C_{50-5000} = -2$ dB	$C_{100-5000} = 0$ dB
	$C_{tr,50-3150} = -12$ dB	$C_{tr,50-5000} = -12$ dB	$C_{tr,100-5000} = -7$ dB

Customer: **British Gypsum Limited**

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0296

**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562NA**

Test Date: **15/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.95</b>
Temperature, deg.C:	<b>19.9</b>	<b>19.3</b>
Rel. Humidity, %RH:	<b>50.5</b>	<b>55.3</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	88.9	42.1	14.7	42.1	0.61	-2.2	<b>44.6</b>		
63	91.0	40.5	11.5	40.5	0.66	-1.9	<b>48.6</b>		47.3
80	95.8	42.5	11.9	42.5	0.68	-1.8	<b>51.5</b>		
100	98.5	42.9	15.1	42.9	0.96	-0.3	<b>55.3</b>	1.7	
125	102.5	47.4	12.1	47.4	0.96	-0.3	<b>54.8</b>	5.2	56.0
160	107.5	49.5	9.3	49.5	1.35	1.2	<b>59.2</b>	3.8	
200	113.6	52.4	13.1	52.4	1.34	1.2	<b>62.4</b>	3.6	
250	114.3	51.9	11.0	51.9	1.46	1.6	<b>64.0</b>	5.0	64.3
315	113.6	46.9	13.6	46.9	1.45	1.5	<b>68.2</b>	3.8	
400	110.8	40.3	20.8	40.3	1.32	1.1	<b>71.6</b>	3.4	
500	107.5	33.1	19.3	<b>32.9</b>	1.39	1.4	<b>76.0</b>		74.8
630	105.4	24.4	19.3	<b>23.1</b>	1.43	1.5	<b>83.8</b>		
800	104.8	20.1	15.4	<b>18.8</b>	1.67	2.2	<b>88.2</b>		
1 000	103.4	13.6	13.2	<b>12.3</b>	1.71	2.3	<b>93.4</b>		91.5
1 250	102.4	8.6	11.5	<b>7.3</b>	2.00	2.9	<b>98.0</b>		
1 600	105.3	8.1	17.5	<b>6.8</b>	2.07	3.1	<b>101.6</b>		
2 000	105.8	8.1	14.2	<b>6.8</b>	2.02	3.0	<b>102.0</b>		101.2
2 500	103.8	7.0	15.6	<b>5.7</b>	1.69	2.2	<b>100.3</b>		
3 150	101.8	8.1	14.7	<b>6.8</b>	1.57	1.9	<b>96.9</b>		
4 000	99.8	12.7	13.8	<b>11.4</b>	1.69	2.2	<b>90.6</b>		90.2
5 000	96.8	12.2	13.9	<b>10.9</b>	1.47	1.6	<b>87.5</b>		
6 300									
8 000									
10 000									

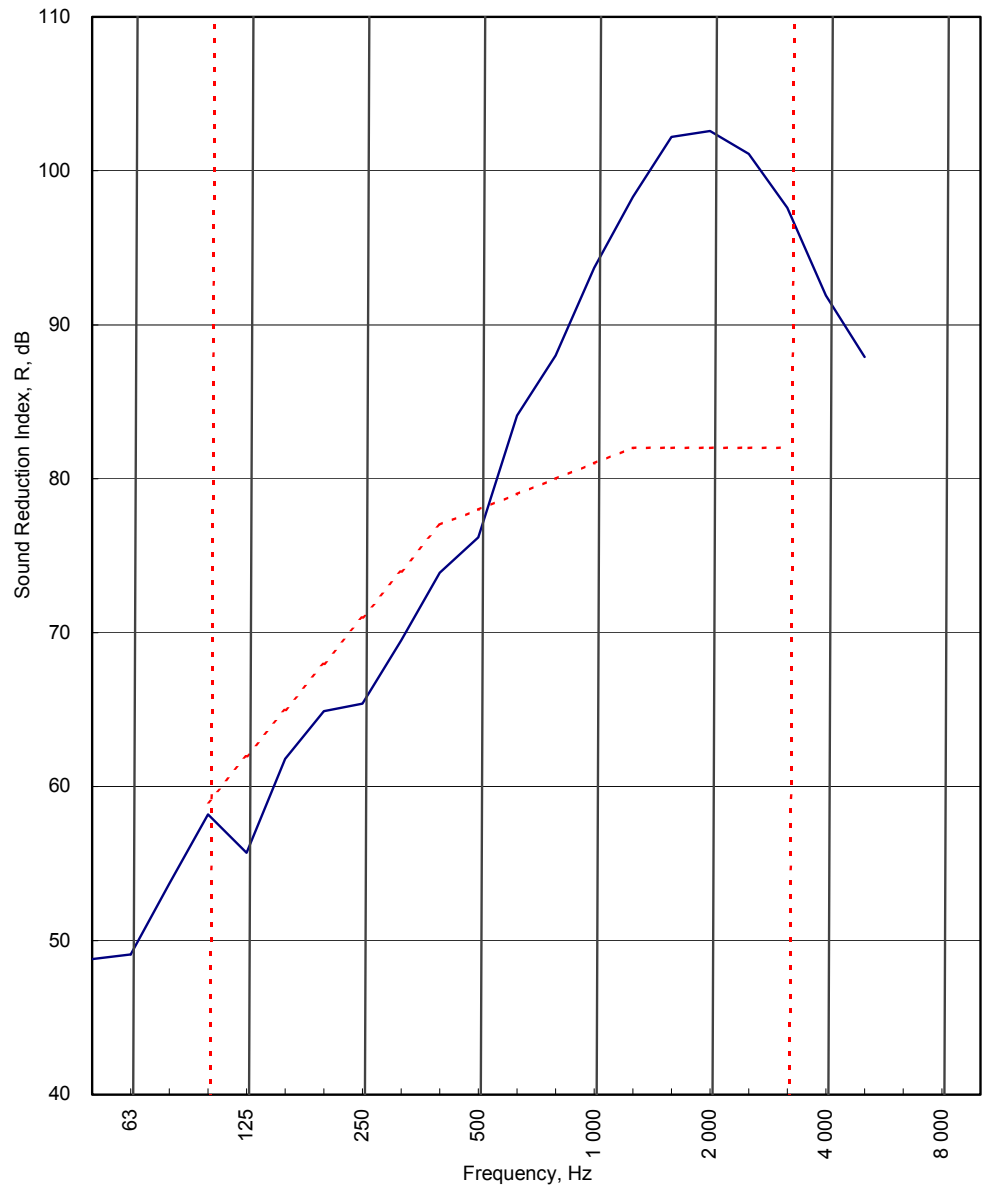
<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>26.5</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>76</b>	<b>-1</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>0</b>	<b>-7</b>		
<b>Background Corrected</b>	<b>(50-3150)</b>	<b>-3</b>	<b>-12</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-12</b>		

Test Procedure: 140/3/issue 5  
Worksheet: 140\_3\_1.XLS



Test Code:  
**H135262PA**  
 Test Date:  
**16/09/04**

Freq. Hz	R dB
50	48.8
63	49.1
80	53.7
100	58.2
125	55.7
160	61.8
200	64.9
250	65.4
315	69.5
400	73.9
500	76.2
630	84.1
800	88.0
1 000	93.7
1 250	98.3
1 600	102.2
2 000	102.6
2 500	101.1
3 150	97.6
4 000	91.9
5 000	87.9
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;C<sub>tr</sub>) = 78 (-2;-7) dB</b>		
	Max dev. 6.3 dB at 125 Hz		
Evaluation based on laboratory measurement results obtained by an engineering method:	C <sub>50-3150</sub> = <b>-3 dB</b>	C <sub>50-5000</sub> = <b>-2 dB</b>	C <sub>100-5000</sub> = <b>-1 dB</b>
	C <sub>tr,50-3150</sub> = <b>-11 dB</b>	C <sub>tr,50-5000</sub> = <b>-11 dB</b>	C <sub>tr,100-5000</sub> = <b>-7 dB</b>

Customer: **British Gypsum Limited**

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**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H135262PA**

Test Date: **16/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.82</b>
Temperature, deg.C:	<b>18.9</b>	<b>18.4</b>
Rel. Humidity, %RH:	<b>53</b>	<b>53.8</b>

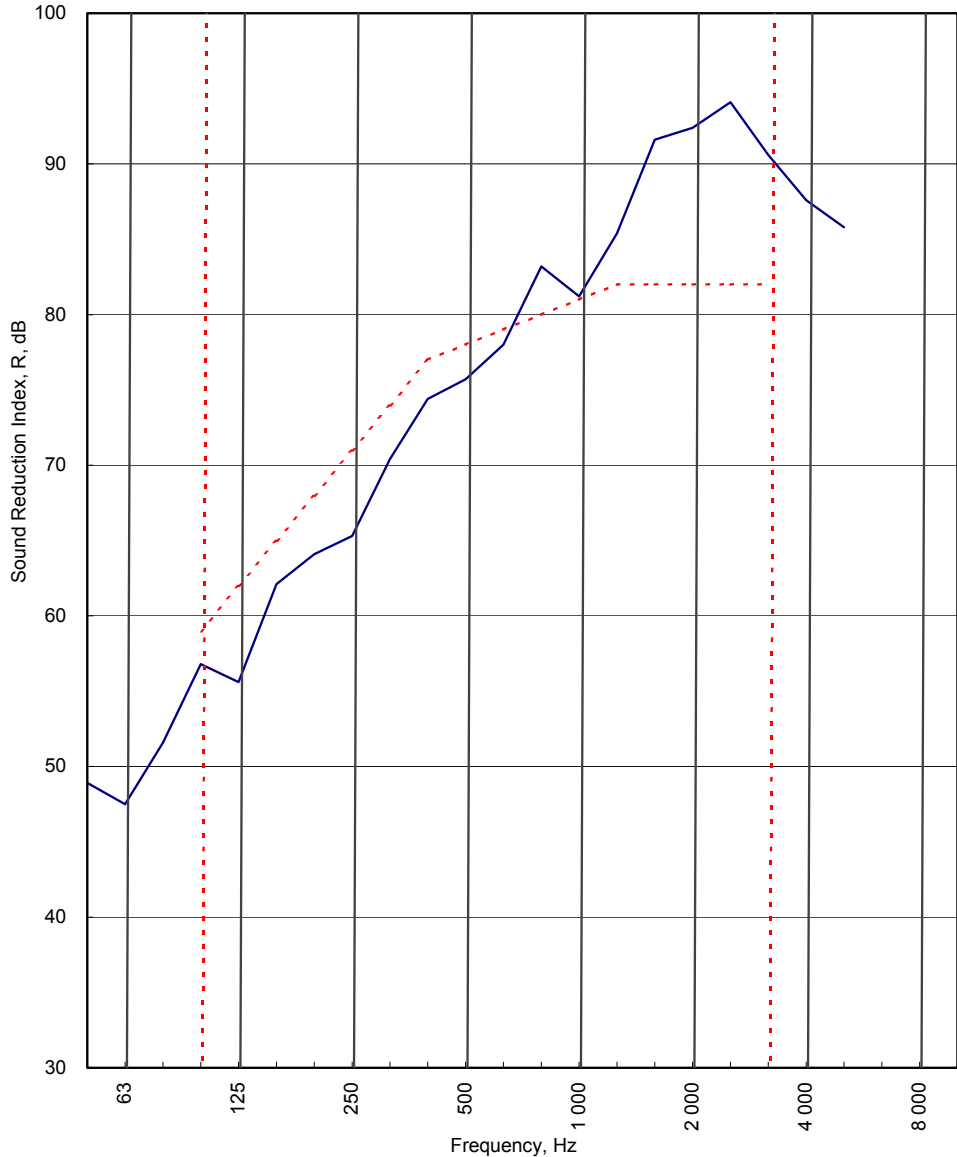
Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	87.7	36.5	19.8	36.5	0.59	-2.4	<b>48.8</b>		
63	91.1	39.7	12.6	39.7	0.60	-2.3	<b>49.1</b>		50.0
80	95.5	40.2	11.5	40.2	0.71	-1.6	<b>53.7</b>		
100	98.9	40.6	13.2	40.6	0.99	-0.1	<b>58.2</b>	0.8	
125	102.2	46.7	8.6	46.7	1.07	0.2	<b>55.7</b>	6.3	57.9
160	107.9	46.7	7.7	46.7	1.16	0.6	<b>61.8</b>	3.2	
200	113.5	50.3	9.4	50.3	1.49	1.7	<b>64.9</b>	3.1	
250	114.2	50.4	4.3	50.4	1.47	1.6	<b>65.4</b>	5.6	66.2
315	113.5	45.2	5.2	45.2	1.33	1.2	<b>69.5</b>	4.5	
400	110.3	37.8	15.9	37.8	1.40	1.4	<b>73.9</b>	3.1	
500	107.2	32.1	5.9	32.1	1.31	1.1	<b>76.2</b>	1.8	76.4
630	105.2	22.8	4.1	22.8	1.50	1.7	<b>84.1</b>		
800	104.7	19.1	3.2	19.1	1.77	2.4	<b>88.0</b>		
1 000	103.5	13.4	9.4	<b>12.1</b>	1.74	2.3	<b>93.7</b>		91.4
1 250	102.5	8.4	4.9	<b>7.1</b>	1.99	2.9	<b>98.3</b>		
1 600	105.3	7.5	5.1	<b>6.2</b>	2.08	3.1	<b>102.2</b>		
2 000	105.9	7.7	6.2	<b>6.4</b>	2.07	3.1	<b>102.6</b>		101.9
2 500	103.6	6.1	5.4	<b>4.8</b>	1.73	2.3	<b>101.1</b>		
3 150	101.7	7.3	6.6	<b>6.0</b>	1.59	1.9	<b>97.6</b>		
4 000	99.6	11.0	10.6	<b>9.7</b>	1.60	2.0	<b>91.9</b>		90.9
5 000	96.7	11.7	10.7	<b>10.4</b>	1.46	1.6	<b>87.9</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>28.4</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>78</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>	<b>(50-3150)</b>	<b>-3</b>	<b>-11</b>		
	<b>(50-5000)</b>	<b>-2</b>	<b>-11</b>		
				Test Procedure: 140/3/issue 5	
				Worksheet: 140_3_1.XLS	



Test Code:  
**H13562QA**  
 Test Date:  
**16/09/04**

Freq. Hz	R dB
50	48.9
63	47.5
80	51.6
100	56.8
125	55.6
160	62.1
200	64.1
250	65.3
315	70.4
400	74.4
500	75.7
630	78.0
800	83.2
1 000	81.2
1 250	85.4
1 600	91.6
2 000	92.4
2 500	94.1
3 150	90.6
4 000	87.6
5 000	85.8
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to  
**BS EN ISO 717-1:1997**

Evaluation based on laboratory  
 measurement results obtained by  
 an engineering method:

**R<sub>w</sub> (C;Ctr) = 78 (-2;-7) dB**  
**Max dev. 6.4 dB at 125 Hz**

C<sub>50-3150</sub> = **-4 dB**      C<sub>50-5000</sub> = **-3 dB**      C<sub>100-5000</sub> = **-1 dB**  
 C<sub>tr,50-3150</sub> = **-12 dB**      C<sub>tr,50-5000</sub> = **-12 dB**      C<sub>tr,100-5000</sub> = **-7 dB**

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562QA**

Test Date: **16/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.95</b>
Temperature, deg.C:	<b>19.3</b>	<b>18.9</b>
Rel. Humidity, %RH:	<b>50.2</b>	<b>54</b>

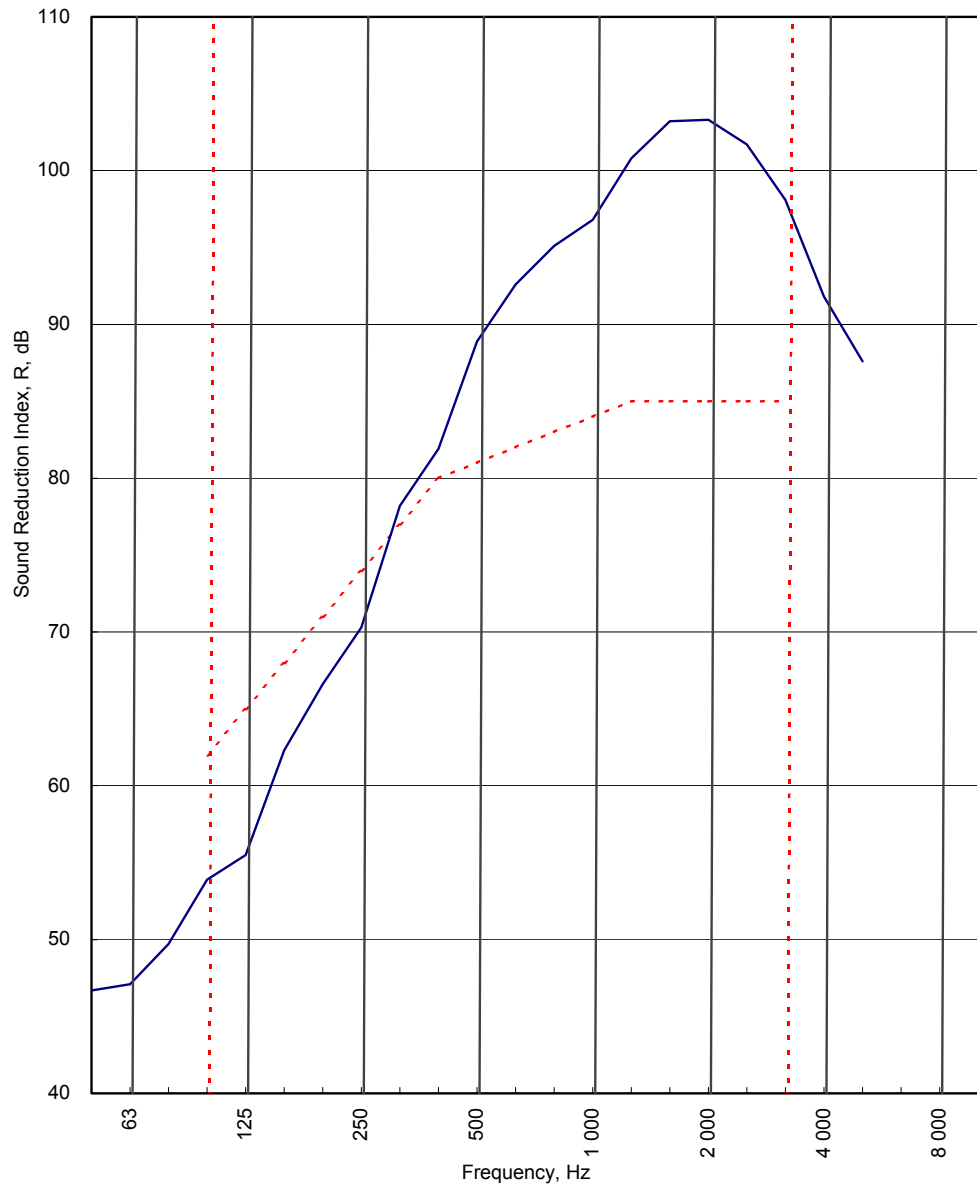
Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/1Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	87.8	36.9	17.2	36.9	0.64	-2.0	<b>48.9</b>		
63	89.8	40.3	13.9	40.3	0.64	-2.0	<b>47.5</b>		49.0
80	95.1	42.1	11.2	42.1	0.73	-1.4	<b>51.6</b>		
100	98.9	42.1	13.2	42.1	1.01	0.0	<b>56.8</b>	2.2	
125	102.0	47.0	8.8	47.0	1.18	0.6	<b>55.6</b>	6.4	57.4
160	108.6	47.3	6.3	47.3	1.22	0.8	<b>62.1</b>	2.9	
200	114.3	51.0	8.0	51.0	1.21	0.8	<b>64.1</b>	3.9	
250	114.6	51.1	3.9	51.1	1.54	1.8	<b>65.3</b>	5.7	65.9
315	113.9	45.0	4.7	45.0	1.43	1.5	<b>70.4</b>	3.6	
400	111.1	37.7	13.1	37.7	1.29	1.0	<b>74.4</b>	2.6	
500	107.5	33.1	5.6	33.1	1.37	1.3	<b>75.7</b>	2.3	75.8
630	105.5	29.4	3.7	29.4	1.56	1.9	<b>78.0</b>	1.0	
800	105.1	24.2	3.4	24.2	1.73	2.3	<b>83.2</b>		
1 000	103.6	25.0	9.2	25.0	1.84	2.6	<b>81.2</b>		82.9
1 250	102.4	20.1	4.1	20.1	2.08	3.1	<b>85.4</b>		
1 600	105.2	16.9	4.3	<b>16.7</b>	2.09	3.1	<b>91.6</b>		
2 000	105.9	17.1	5.6	<b>16.8</b>	2.16	3.3	<b>92.4</b>		92.6
2 500	103.8	13.0	5.3	<b>12.2</b>	1.79	2.5	<b>94.1</b>		
3 150	101.7	13.9	6.7	<b>13.0</b>	1.58	1.9	<b>90.6</b>		
4 000	99.9	15.5	10.8	<b>14.2</b>	1.59	1.9	<b>87.6</b>		87.6
5 000	96.5	13.6	11.1	<b>12.3</b>	1.46	1.6	<b>85.8</b>		
6 300									
8 000									
10 000									

<b>Single Figure Ratings</b>	<b>Rw</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>	<b>30.6</b>
<b>BS EN ISO 717-1: 1997</b>	<b>dB</b>	<b>dB</b>	<b>dB</b>		
	<b>78</b>	<b>-2</b>	<b>-7</b>		
	<b>(100-5000)</b>	<b>-1</b>	<b>-7</b>		
<b>Background Corrected</b>					
	<b>(50-3150)</b>	<b>-4</b>	<b>-12</b>		
	<b>(50-5000)</b>	<b>-3</b>	<b>-12</b>		
				Test Procedure: 140/3/issue 5	
				Worksheet: 140_3_1.XLS	



Test Code:  
**H13562RA**  
 Test Date:  
**17/09/04**

Freq. Hz	R dB
50	46.7
63	47.1
80	49.7
100	53.9
125	55.5
160	62.3
200	66.6
250	70.3
315	78.2
400	81.9
500	88.9
630	92.6
800	95.1
1 000	96.8
1 250	100.8
1 600	103.2
2 000	103.3
2 500	101.7
3 150	98.1
4 000	91.8
5 000	87.6
6 300	
8 000	
10 000	



----- Curve of reference values (ISO 717-1)

Rating according to BS EN ISO 717-1:1997	<b>R<sub>w</sub> (C;C<sub>tr</sub>) = 81 (-4;-10) dB</b>		
Evaluation based on laboratory measurement results obtained by an engineering method:	<b>Max dev. 9.5 dB at 125 Hz</b>		
	<b>C<sub>50-3150</sub> = -6 dB</b>	<b>C<sub>50-5000</sub> = -5 dB</b>	<b>C<sub>100-5000</sub> = -3 dB</b>
	<b>C<sub>tr,50-3150</sub> = -16 dB</b>	<b>C<sub>tr,50-5000</sub> = -16 dB</b>	<b>C<sub>tr,100-5000</sub> = -10 dB</b>

Customer: **British Gypsum Limited**



**LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995**

Test Code: **H13562RA**

Test Date: **17/09/04**

Specimen Area, S = **8.64** m<sup>2</sup>

	Room T2	Room T1
Room Volume, m <sup>3</sup> :	<b>98</b>	<b>54.09</b>
Temperature, deg.C:	<b>19.1</b>	<b>19.2</b>
Rel. Humidity, %RH:	<b>65.9</b>	<b>67.2</b>

Freq Hz	Test Room T2 to Test Room T1						R dB	U.Dev. dB	R 1/10Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	90.2	41.9	20.2	41.9	0.70	-1.6	<b>46.7</b>		
63	91.4	41.5	10.3	41.5	0.53	-2.8	<b>47.1</b>		47.6
80	95.1	43.9	10.0	43.9	0.71	-1.5	<b>49.7</b>		
100	98.9	44.8	13.5	44.8	0.96	-0.2	<b>53.9</b>	8.1	
125	102.2	47.0	11.5	47.0	1.08	0.3	<b>55.5</b>	9.5	56.0
160	107.7	46.7	9.2	46.7	1.35	1.3	<b>62.3</b>	5.7	
200	113.8	49.2	12.7	49.2	1.59	2.0	<b>66.6</b>	4.4	
250	114.4	46.0	10.0	46.0	1.55	1.9	<b>70.3</b>	3.7	69.6
315	113.6	37.2	11.6	37.2	1.51	1.8	<b>78.2</b>		
400	110.8	30.2	16.9	<b>30.0</b>	1.30	1.1	<b>81.9</b>		
500	107.8	21.6	14.6	<b>20.6</b>	1.47	1.7	<b>88.9</b>		85.6
630	105.5	16.3	15.5	<b>15.0</b>	1.63	2.1	<b>92.6</b>		
800	104.8	13.0	13.0	<b>11.7</b>	1.57	2.0	<b>95.1</b>		
1 000	103.6	10.7	12.1	<b>9.4</b>	1.84	2.6	<b>96.8</b>		97.0
1 250	102.6	6.5	9.0	<b>5.2</b>	2.18	3.4	<b>100.8</b>		
1 600	105.2	6.7	12.2	<b>5.4</b>	2.20	3.4	<b>103.2</b>		
2 000	105.9	7.5	10.6	<b>6.2</b>	2.27	3.6	<b>103.3</b>		102.7
2 500	103.7	6.2	12.1	<b>4.9</b>	1.94	2.9	<b>101.7</b>		
3 150	102.0	7.5	11.6	<b>6.2</b>	1.71	2.3	<b>98.1</b>		
4 000	100.0	11.9	11.8	<b>10.6</b>	1.73	2.4	<b>91.8</b>		90.7
5 000	96.6	12.3	11.3	<b>11.0</b>	1.58	2.0	<b>87.6</b>		
6 300									
8 000									
10 000									
<b>Single Figure Ratings</b>		<b>RW</b>	<b>C</b>	<b>Ctr</b>	<b>Total U. Dev., dB</b>		<b>31.4</b>		
<b>BS EN ISO 717-1: 1997</b>		<b>81</b>	<b>-4</b>	<b>-10</b>					
		<b>(100-5000)</b>	<b>-3</b>	<b>-10</b>					
<b>Background Corrected</b>		<b>(50-3150)</b>	<b>-6</b>	<b>-16</b>					
		<b>(50-5000)</b>	<b>-5</b>	<b>-16</b>					
							Test Procedure: 140/3/issue 5		
							Worksheet: 140_3_1.XLS		



## APPENDIX B - TEST METHOD AND CONDITIONS

The source room (T2) was treated with six perspex diffusers of approximately 900mm x 1220mm. An omni-directional loudspeaker sound source is placed near a back corner of the source room (T2), rotating at 1 rpm and at least 0.7m from any room boundary to satisfy Annex C of BS EN ISO 140-3: 1995. A stationary loudspeaker sound source is placed in the corner of the receiving room (T1) opposite the test specimen.

The average sound pressure level in each 1/3 octave band is measured using a rotating microphone boom, positioned such that the minimum distance between microphone and sound source is 1m and between microphone and room boundaries is 0.7m. The rotating microphone has a sweep radius of at least 1m and is inclined in relation to the boundaries at an angle of at least 30° to the horizontal. The microphone has a traverse time of 32 seconds, and the sound pressure levels are averaged over 64 seconds which is equivalent to two complete sweeps of the microphone boom.

The equivalent absorption area of the receiving room is determined by producing the arithmetic average of six reverberation times and applying this to the Sabine formula.

The test specimen is installed in the aperture so that it finishes flush with the first independent timber in room T2 side to eliminate indirect transmission between rooms. The specimen is not installed so that the aperture depth ratio 2:1 is met as recommended in section 5.2.1 of BS EN ISO 140-3:1995. Laboratory tests have been carried out to prove the insignificance of this installation position on the test results.

The laboratory limit for measurement due to flanking is (BTC 11709A)

Freq Hz	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
R'max	45.0	46.9	56.3	61.8	58.5	60.6	62.5	66.3	74.1	79.5	85.0	90.4	93.8	95.0	95.3	98.3	100.4	98.5	96.3	93.9	91.1

The figure below show flanking and isolation treatments in the test chamber.

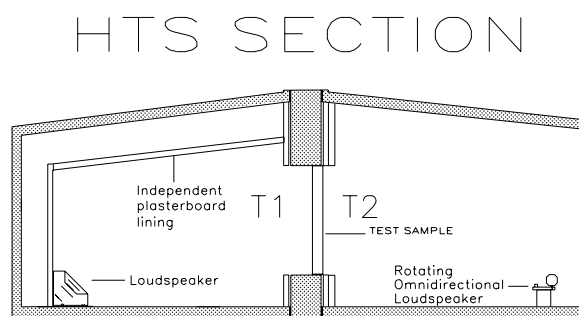


Figure 2. Cross sectional view of the horizontal transmission suite.