

# Technical Report



INVESTOR IN PEOPLE

**Report Number** C/08/5L/20448/R01a

**Date** 5 March 2009

## **Project**

**The Laboratory Determination of  
The Airborne Sound Transmission  
of Various Door Sets**

## **Prepared for**

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**&**

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## **By**

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0444

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## 1.0 Summary

Tests have been done in SRL's Laboratory at Holbrook House, Sudbury, Suffolk, to determine the sound reduction index of various door sets in accordance with BS EN ISO 140-3:1995.

From these measurements the required results have been derived and are presented in both tabular and graphic form in Data Sheets 1 to 13.

The results are given in 1/3rd octave bands over the frequency range 50Hz to 10kHz, which is beyond that required by the test standard. Measurements outside the standard frequency range are not UKAS accredited.



.....  
**Gareth Young**  
Project Engineer



.....  
**Allen Smalls**  
Laboratory Manager  
Quality Manager

For and on behalf of  
Sound Research Laboratories Ltd

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## 2.0 Details of Measurements

### 2.1 Location

Sound Research Laboratories Ltd  
Holbrook House  
Little Waldingfield  
Sudbury  
Suffolk  
CO10 0TH

### 2.2 Test Date

5 November 2008

### 2.3 Instrumentation and Apparatus Used

Make	Description	Type
E D I	Microphone Multiplexer Microphone Power Supply Unit	
Norwegian Electronics	Real Time Analyser Rotating Microphone Boom	830 231
Brüel & Kjaer	12mm Condenser Microphones Windshields Pre Amplifiers Microphone Calibrator Omnipower Sound Source	4166 UA0237 2639, 2669C 4231 4296
Larson Davis	12mm Condenser Microphone	2560
SRL	Power Amplifiers	
Celestion	Loudspeakers	100w

Douglas Curtis	Rotating Microphone Boom	
Thermo Hygro	Temperature & Humidity Probe	
TOA	Graphic Equalizer	E-1231
	Power Amplifier	DPA-800

## 2.4 References

BS EN ISO 140-3:1995	Laboratory measurement of airborne sound insulation of building elements
BS EN ISO 717-1:1997	Rating of sound insulation in buildings and of building elements. Airborne Sound Insulation.

## 2.5 Personnel Present

S. Dennard	Moralt
K. Feile	Moralt
C. Daschner	Moralt
B. Blacklock	James Latham
P. Chudley	Lorient Polyproducts

## **3.0 Description of Test**

### **3.1 Description of Sample**

Various door sets were tested as identified in Table 1 and Drawings 1 to 5.

The door frame was sealed to the aperture with screws, wooden packers, mineral wool, mastic and additional plasterboard and mastic.

Sampling plan: Enough for test only.

Sample condition: New.

Details supplied by: Moralt.

Sample installed by: Moralt.

### **3.2 Sample Delivery date**

5 November 2008

### **3.3 Test Procedures**

The sample was mounted/located and tested in accordance with the relevant standard. The method and procedure is described in Appendix 1. The measurement uncertainty is given in Appendix 2.

## 4.0 Results

The results of the measurements and subsequent analysis are given in Data Sheets 1 to 13 and summarised below.

Results relate only to the items tested.

SRL Test No.	Description in Brief	R <sub>w</sub> (C;C <sub>tr</sub> )
2	Finesse Acoustic 42 - Fully caulked	42 (-2;-5)
3	Finesse Acoustic 42 - Flush with seals	41 (-1;-5)
4	Finesse Acoustic 42 - Flush with seals - seals adjusted	42 (-2;-5)
5	Finesse FireSound 41 - Fully caulked	42 (-2;-6)
6	Finesse FireSound 41 - Flush with seals	41 (-2;-5)
7	Finesse FireSound 41 - Flush with seals - seals adjusted	41 (-1;-5)
8	Finesse FireSound 40 - Fully caulked	41 (-2;-4)
9	Finesse FireSound 40 - Flush with seals	40 (-1;-4)
10	Finesse FireSound 36 - Flush with seals	36 (-1;-2)
11	Moralt 54mm Lamincore Firedoor - Vision P with seals	34 (-1;-2)
12	Finesse FireSound 40 - Vision P with seals	40 (-1;-3)
13	Finesse FireSound 40 - Vision P with seals - seals adjusted	41 (-2;-5)
14	Finesse FireSound 41 - Vision P with seals	41 (-1;-5)

————— *End of Text* —————

Table 1

## Summary Details

## Door Details

## Frame Details

Test	Name	Comments	Results Rw dB	Face	Thickness	Lacq	Lipping	Door mounted Threshold	Floor Threshold	Vision Panel	Glass Type	Glazing System	Ironmonger y	Ironmongery	Frame section	Frame Material	Loose stop	frame seal 1	frame seal 2	Ironmongery
2	Finesse Acoustic 42	Fully Caulked	42 dB	veneer	57mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
3	Finesse Acoustic 42	Flush with seals	41 dB	veneer	57mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
4	Finesse Acoustic 42 Seals adjusted	Flush with seals	42 dB	veneer	57mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
5	Finesse FireSound 41	Fully Caulked	42 dB	veneer	59mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
6	Finesse FireSound 41	Flush with seals	41 dB	veneer	59mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
7	Repeat of test 6 Seals adjusted																			
8	Finesse FireSound 40	Fully Caulked	41 dB	veneer	54mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
9	Finesse FireSound 40	Flush with seals	40 dB	veneer	54mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
10	Finesse FireSound 36	Flush with seals	36 dB	veneer	54mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	None			Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
11	Moralt 54mm Lamincore Firedoor	Vision P with seals	34 dB	veneer	54mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	700x 400mm	21mm Pyrobel	FF1 plus thermaliner	Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
12	Finesse FireSound 40	Vision P with seals	40 dB	veneer	54mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	700x 400mm	21mm Pyrobel	FF1 plus thermaliner	Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate
13	Repeat of test 6 Seals adjusted																			
14	Finesse FireSound 41	Vision P with seals	41 dB	veneer	59mm	a/c lacquer	8mm 4 edges	2 x Fir tree Lorient IS1511	Lorient threshold IS4220 si	700x 400mm	21mm Pyrobel	FF1 plus thermaliner	Prehung 3 x H101	1 TFS latch 22mm from face	100x 32mm	Sapele	40x 25	Lorient LE1515 15x15 batwing	Lorient 1504FDS finesse	75mm Tubular Latchstrike plate

All Doors tested with a standard veneer

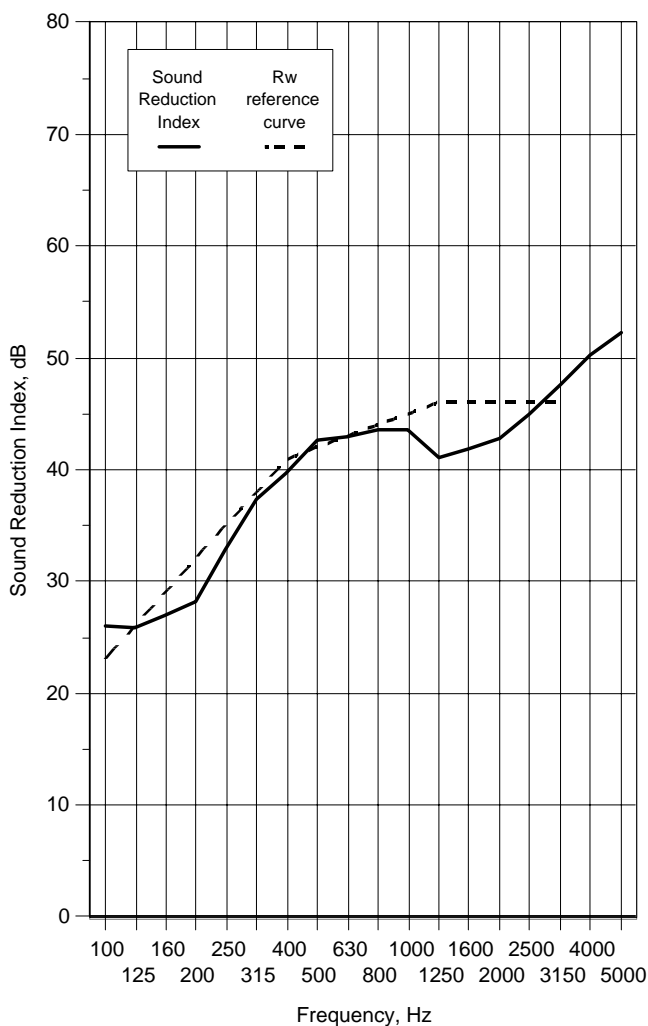
Sapele Density 640kgm<sup>3</sup>

Latch standard generic 75mm tubular latch seals interrupted at strike

## Data Sheet 1

<b>Test Number :</b>	2	<b>Air temperature:</b>	12.5 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	79 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	41.3 kg/m2
<b>Product</b>	Finesse Acoustic 42 - Fully caulked		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	31.6	25.1
63+	27.7	
80+	21.6	
100	26.0	26.2
125	25.9	
160	27.0	
200	28.2	31.3
250	32.8	
315	37.4	
400	39.7	41.5
500	42.6	
630	43.0	
800	43.5	42.5
1000	43.5	
1250	41.1	
1600	41.8	43.0
2000	42.8	
2500	44.9	
3150	47.6	49.6
4000	50.2	
5000	52.3	
6300+	53.1	55.1
8000+	55.9 *	
10000+	57.4 #	
Average 100-3150	38.0	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **42 (-2;-5) dB**

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

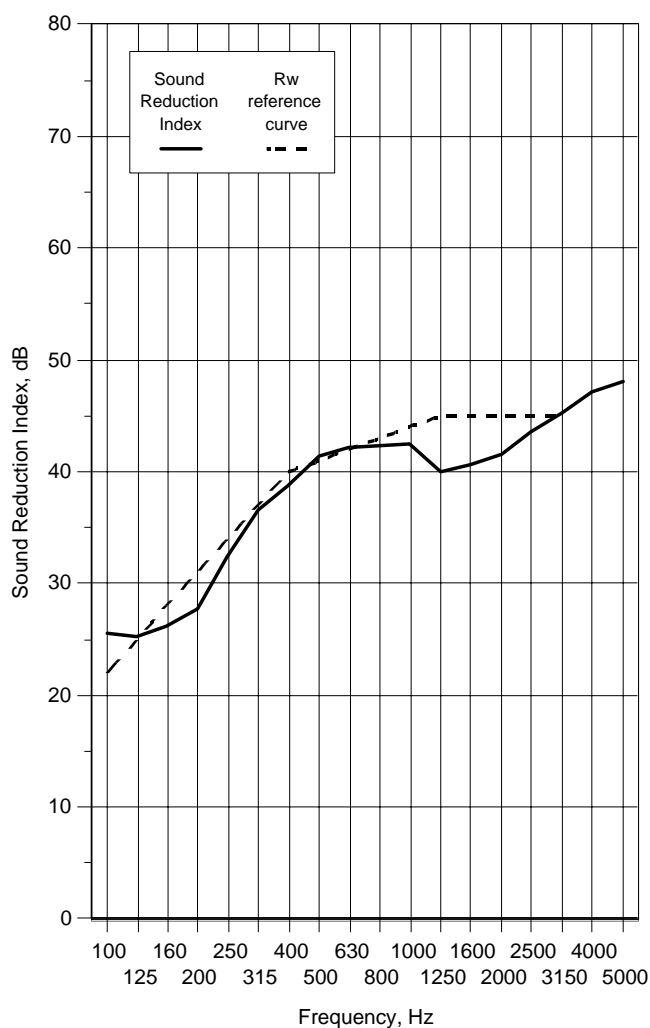
+ designates frequency beyond standard and not UKAS accredited

v1.6

## Data Sheet 2

<b>Test Number :</b>	3	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	79 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	41.3 kg/m2
<b>Product</b>	Finesse Acoustic 42 - Flush with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	30.8	25.2
63+	26.9	
80+	22.0	
100	25.6	25.7
125	25.2	
160	26.1	
200	27.8	30.9
250	32.4	
315	36.6	
400	38.7	40.5
500	41.4	
630	42.2	
800	42.4	41.5
1000	42.5	
1250	40.0	
1600	40.6	41.7
2000	41.6	
2500	43.5	
3150	45.3	46.7
4000	47.1	
5000	48.1	
6300+	49.0	51.5
8000+	52.2 *	
10000+	55.9 #	
Average 100-3150	37.0	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-1;-5) dB**

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

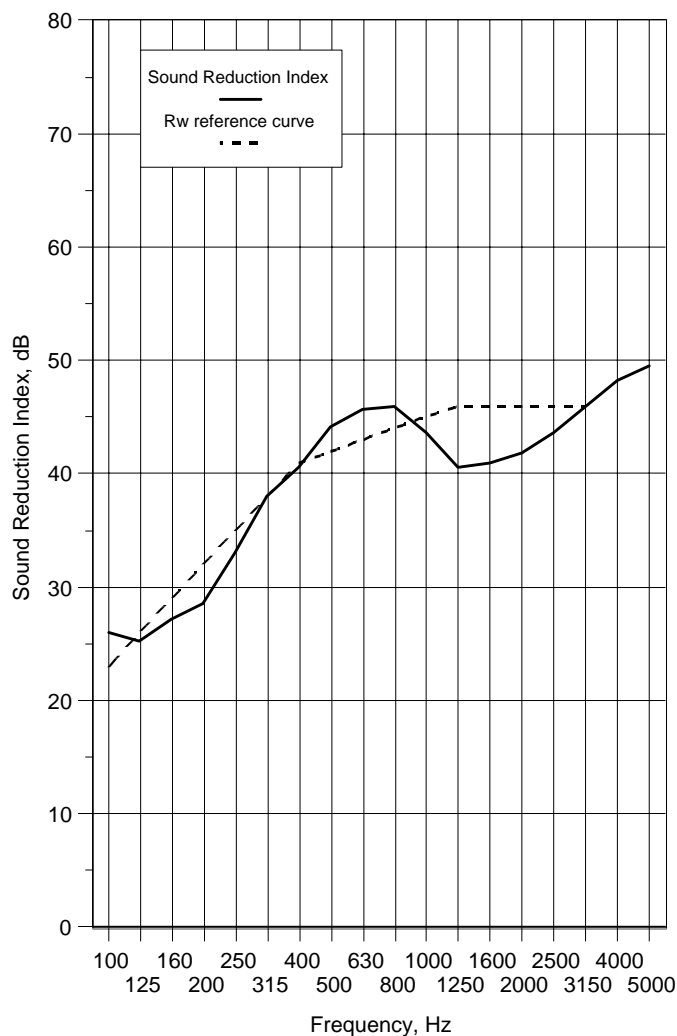
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 3

<b>Test Number :</b>	4	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	79 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume:</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	41.3 kg/m2
<b>Product</b>	Finesse Acoustic 42 - Flush with seals - Seals adjusted		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	31.5	24.8
63+	27.3	
80+	21.3	
100	26.0	26.0
125	25.2	
160	27.1	
200	28.5	31.6
250	33.0	
315	38.0	
400	40.6	42.9
500	44.1	
630	45.7	
800	45.9	42.8
1000	43.7	
1250	40.6	
1600	41.0	42.1
2000	41.9	
2500	43.7	
3150	45.9	47.6
4000	48.2	
5000	49.5	
6300+	50.1	52.3
8000+	52.9 *	
10000+	55.8 #	
Average 100-3150	38.2	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **42 (-2;-5)** dB

Notes : \* designates measurement corrected for background

# designates limit of measurement due to background

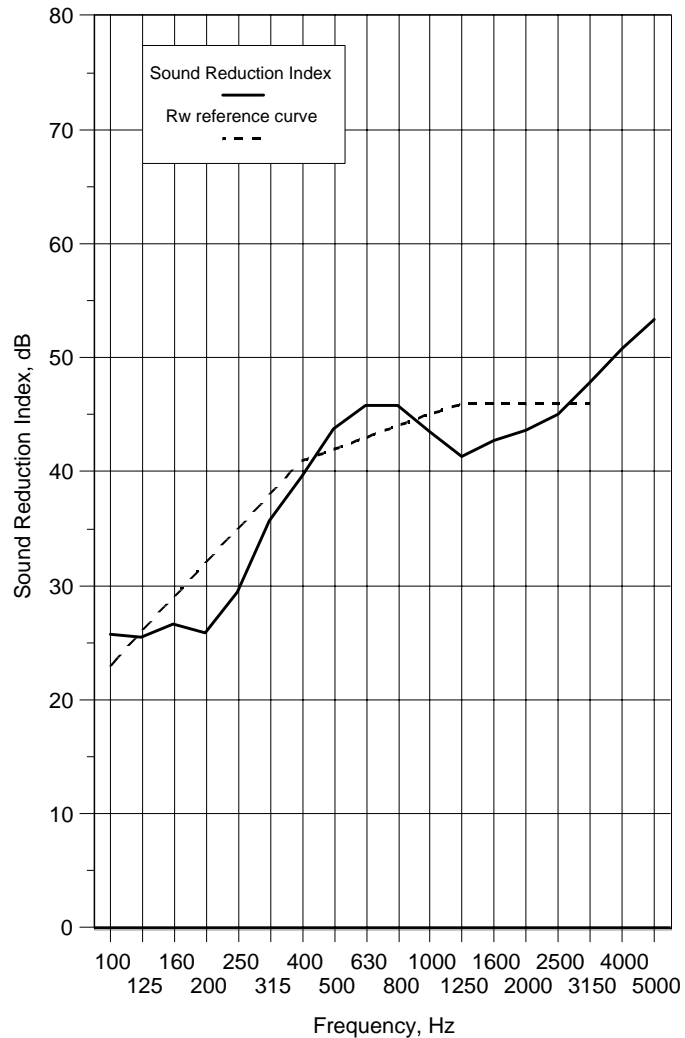
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 4

<b>Test Number :</b>	5	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume:</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	35.4 kg/m2
<b>Product</b>	Finesse FireSound 41 - Fully caulked		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	31.5	24.2
63+	26.6	
80+	20.7	
100	25.7	25.9
125	25.5	
160	26.6	
200	25.9	28.8
250	29.4	
315	35.7	
400	39.5	42.2
500	43.8	
630	45.8	
800	45.8	43.2
1000	43.5	
1250	41.3	
1600	42.7	43.7
2000	43.6	
2500	45.0	
3150	47.8	50.1
4000	50.8	
5000	53.4	
6300+	54.8	55.4
8000+	55.3 *	
10000+	56.1 #	
Average 100-3150	38.0	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **42 (-2;-6)** dB

Notes :\* designates measurement corrected for background

# designates limit of measurement due to background

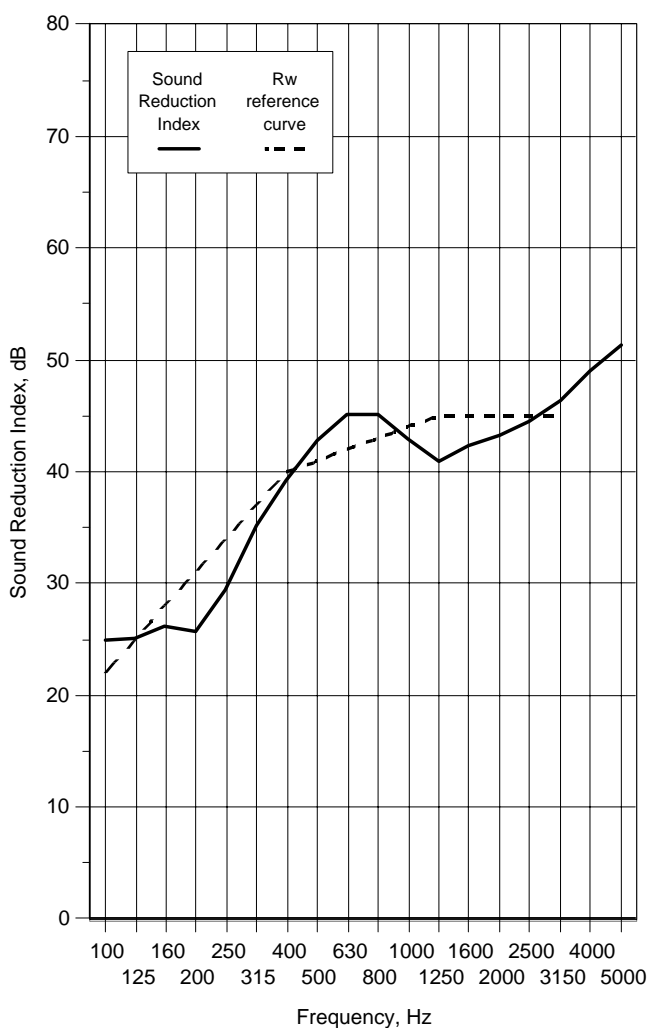
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 5

<b>Test Number :</b>	6	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	35.4 kg/m2
<b>Product</b>	Finesse FireSound 41 - Flush with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	31.1	24.5
63+	26.7	
80+	21.1	
100	24.9	25.3
125	25.1	
160	26.1	
200	25.7	28.6
250	29.5	
315	35.2	
400	39.2	41.7
500	42.8	
630	45.1	
800	45.2	42.7
1000	42.9	
1250	40.9	
1600	42.3	43.2
2000	43.2	
2500	44.5	
3150	46.3	48.4
4000	49.0	
5000	51.3	
6300+	52.1	53.2
8000+	53.0 *	
10000+	55.0 #	
Average 100-3150	37.4	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-2;-5) dB**

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

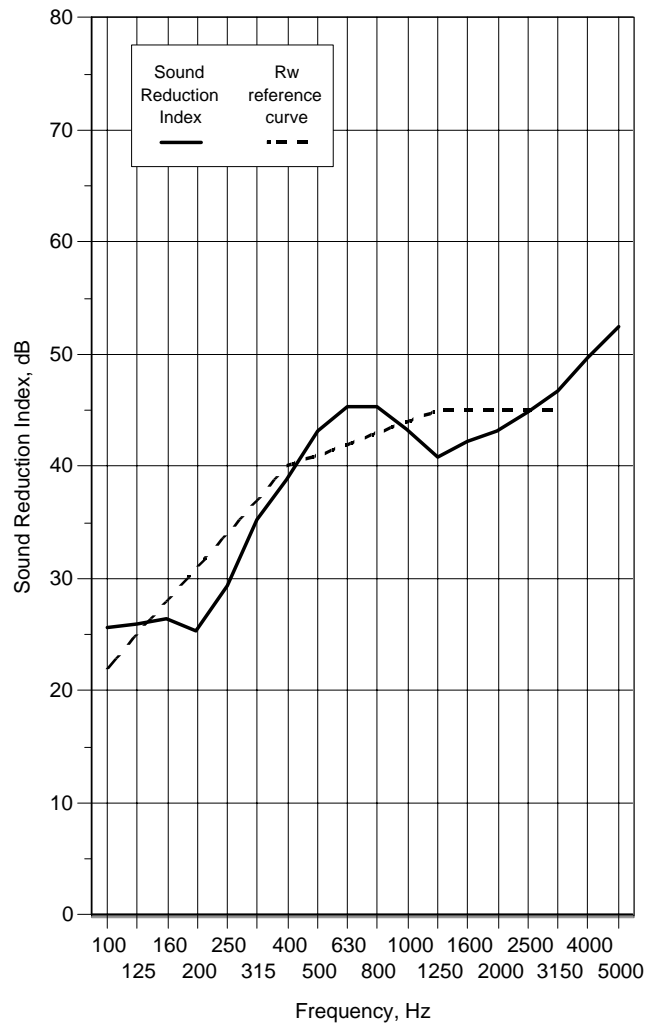
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 6

<b>Test Number :</b>	7	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	35.4 kg/m2
<b>Product</b>	Finesse FireSound 41 - Flush with seals - Seals adjusted		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	30.6	24.1
63+	26.6	
80+	20.7	
100	25.7	26.0
125	25.9	
160	26.4	
200	25.4	28.4
250	29.4	
315	35.3	
400	38.9	41.6
500	43.2	
630	45.3	
800	45.3	42.8
1000	43.3	
1250	40.8	
1600	42.3	43.3
2000	43.2	
2500	44.9	
3150	46.7	49.0
4000	49.7	
5000	52.5	
6300+	53.8	54.4
8000+	54.3 *	
10000+	55.2 #	
Average 100-3150	37.6	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-1;-5) dB**

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

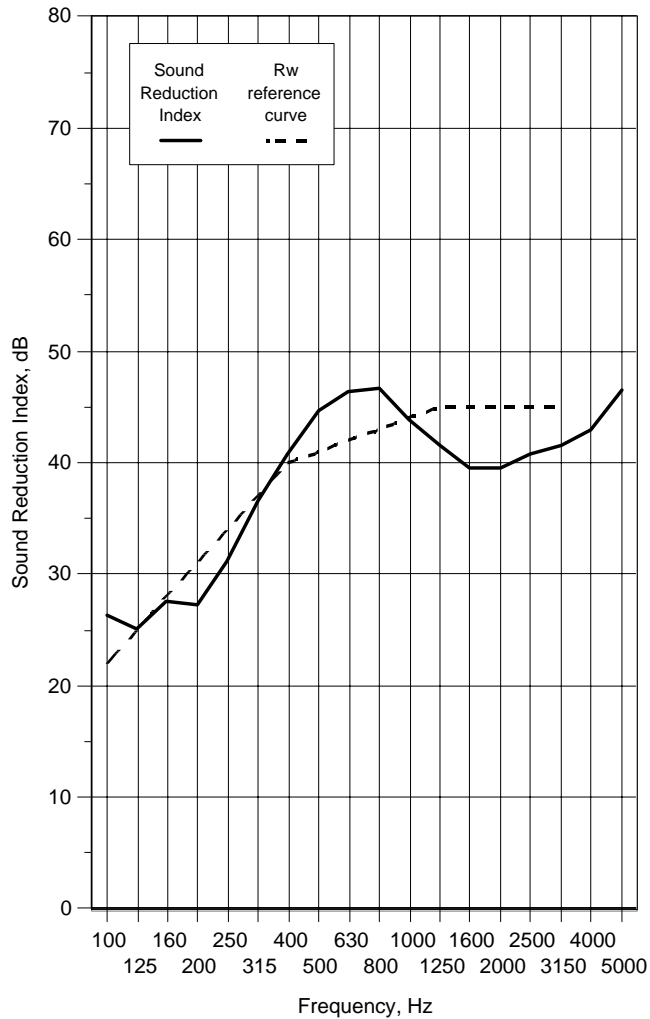
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 7

<b>Test Number :</b>	8	<b>Air temperature:</b>	12.7 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	80 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	39 kg/m2
<b>Product</b>	Finesse FireSound 40 - Fully caulked		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	29.8	25.7
63+	26.7	
80+	23.1	
100	26.3	26.2
125	25.1	
160	27.5	
200	27.2	30.2
250	31.2	
315	36.6	
400	40.8	43.3
500	44.6	
630	46.4	
800	46.7	43.6
1000	43.9	
1250	41.6	
1600	39.6	39.9
2000	39.6	
2500	40.7	
3150	41.5	43.2
4000	42.9	
5000	46.6	
6300+	51.7	53.8
8000+	54.8 *	
10000+	56.2 #	
Average 100-3150	37.5	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-2;-4)** dB

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

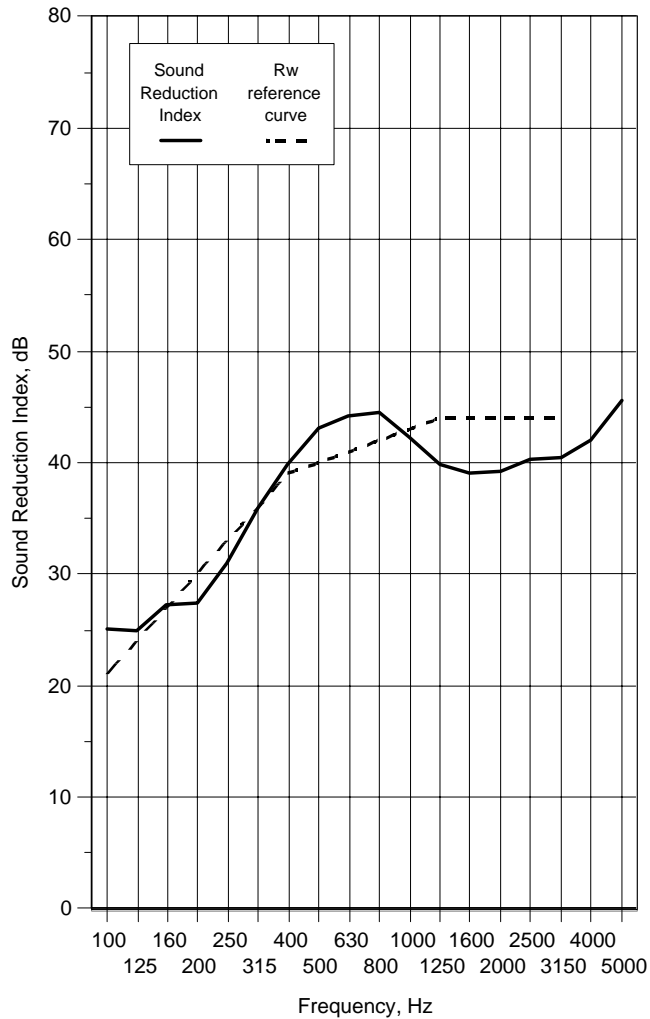
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 8

<b>Test Number :</b>	9	<b>Air temperature:</b>	12.7 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	80 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	39 kg/m2
<b>Product</b>	Finesse FireSound 40 - Flush with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	29.9	24.7
63+	26.4	
80+	21.6	
100	25.1	25.6
125	24.9	
160	27.3	
200	27.4	30.2
250	31.0	
315	35.9	
400	39.9	42.0
500	43.1	
630	44.2	
800	44.5	41.9
1000	42.4	
1250	39.9	
1600	39.0	39.5
2000	39.3	
2500	40.3	
3150	40.5	42.3
4000	42.0	
5000	45.6	
6300+	50.2	52.5
8000+	53.5 *	
10000+	55.2 #	
Average 100-3150	36.5	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **40 (-1;-4)** dB

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

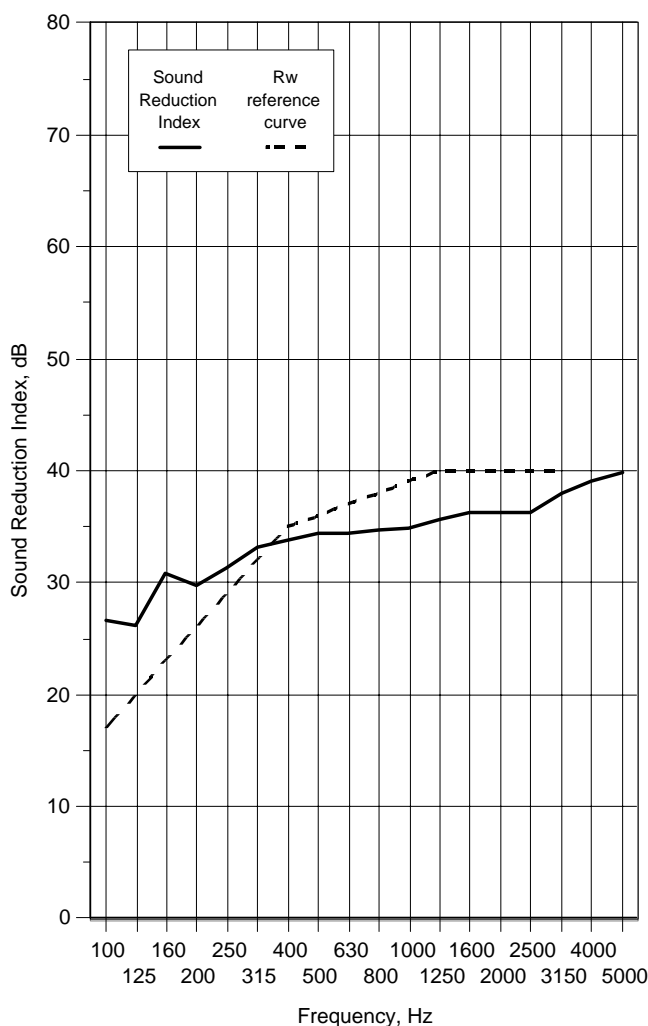
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 9

<b>Test Number :</b>	10	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	80 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	38 kg/m2
<b>Product</b>	Finesse FireSound 36 - Flush with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	28.3	23.5
63+	20.9	
80+	24.3	
100	26.7	27.5
125	26.2	
160	30.8	
200	29.7	31.2
250	31.3	
315	33.2	
400	33.8	34.2
500	34.4	
630	34.4	
800	34.7	35.0
1000	34.8	
1250	35.7	
1600	36.3	36.3
2000	36.3	
2500	36.3	
3150	38.0	38.9
4000	39.0	
5000	39.9	
6300+	42.0	43.6
8000+	44.0	
10000+	45.3 *	
Average 100-3150	33.3	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **36 (-1;-2)** dB

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

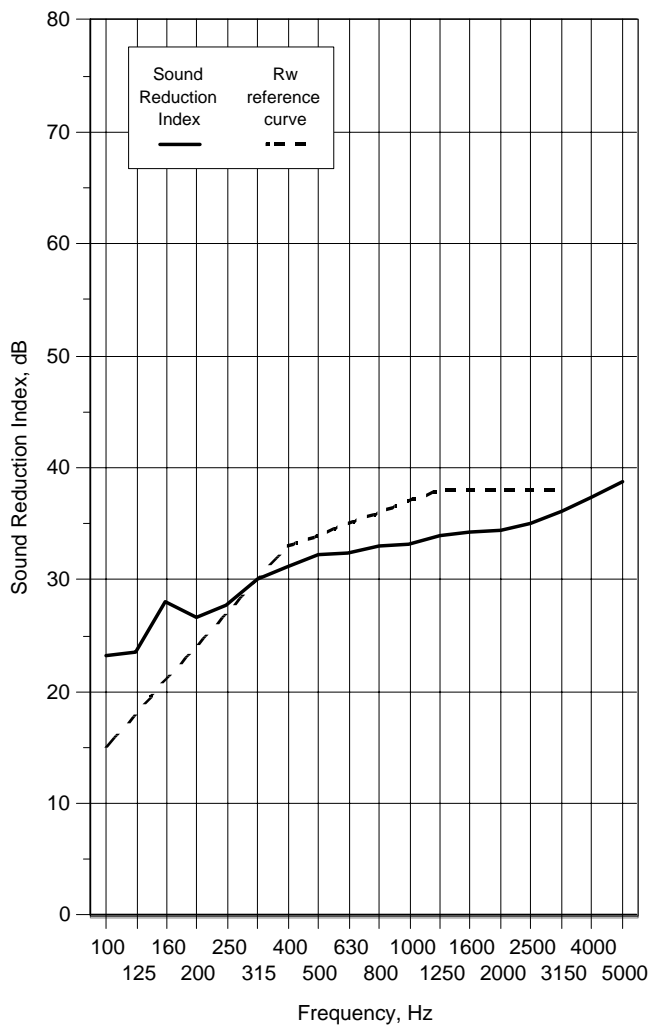
+ designates frequency beyond standard and not UKAS accredited

v1.6

## Data Sheet 10

<b>Test Number :</b>	11	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	40.5 kg/m2
<b>Product</b>	Moralt 54mm Lamincore Firedoor - Vision P with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	19.8	19.7
63+	21.3	
80+	18.4	
100	23.2	24.5
125	23.6	
160	28.1	
200	26.7	28.0
250	27.8	
315	30.1	
400	31.1	31.9
500	32.3	
630	32.4	
800	33.0	33.4
1000	33.2	
1250	34.0	
1600	34.2	34.6
2000	34.4	
2500	35.1	
3150	36.1	37.3
4000	37.4	
5000	38.8	
6300+	41.2	41.7
8000+	41.1	
10000+	43.1	
Average 100-3150	31.0	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **34 (-1;-2) dB**

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

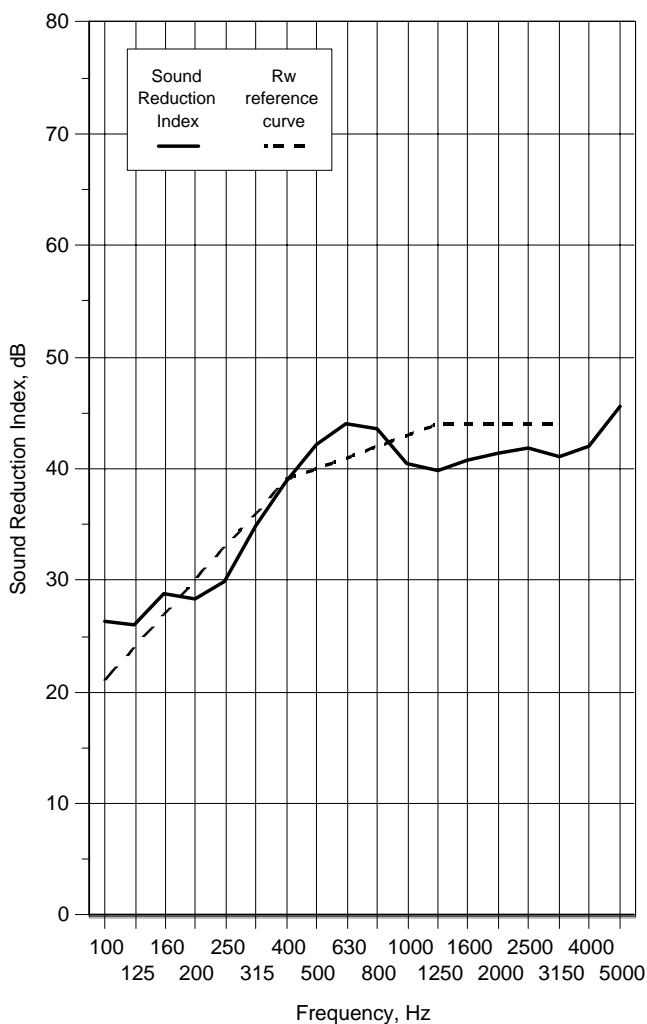
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 11

<b>Test Number :</b>	12	<b>Air temperature:</b>	12.6 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	37.6 kg/m2
<b>Product</b>	Finesse FireSound 40 - Vision P with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	29.6	25.8
63+	25.9	
80+	23.7	
100	26.4	26.9
125	26.0	
160	28.8	
200	28.3	30.3
250	29.9	
315	34.9	
400	38.8	41.1
500	42.1	
630	44.1	
800	43.5	41.0
1000	40.4	
1250	39.9	
1600	40.7	41.3
2000	41.4	
2500	41.8	
3150	41.1	42.5
4000	42.0	
5000	45.6	
6300+	50.4	52.4
8000+	53.3 *	
10000+	54.8 #	
Average 100-3150	36.8	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **40 (-1;-3)** dB

Notes \* designates measurement corrected for background

# designates limit of measurement due to background

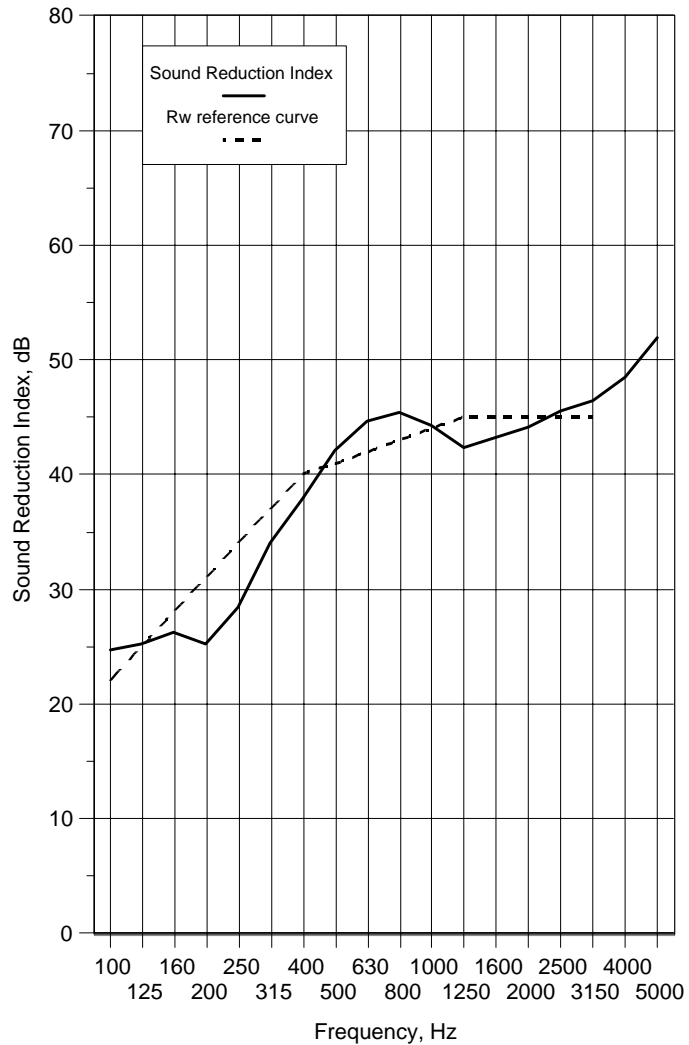
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 12

<b>Test Number :</b>	13	<b>Air temperature:</b>	12.8 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume:</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	35.4 kg/m2
<b>Product</b>	Finesse FireSound 40 - Vision P with seals - Seals adjusted		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	28.0	23.6
63+	24.9	
80+	20.8	
100	24.7	25.4
125	25.3	
160	26.2	
200	25.2	27.9
250	28.4	
315	34.1	
400	37.9	40.7
500	42.1	
630	44.7	
800	45.4	43.9
1000	44.3	
1250	42.4	
1600	43.2	44.2
2000	44.1	
2500	45.5	
3150	46.5	48.4
4000	48.5	
5000	51.9	
6300+	55.1	55.2
8000+	55.5 *	
10000+	55.0 #	
Average 100-3150	37.5	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-2;-5) dB**

Notes : \* designates measurement corrected for background

# designates limit of measurement due to background

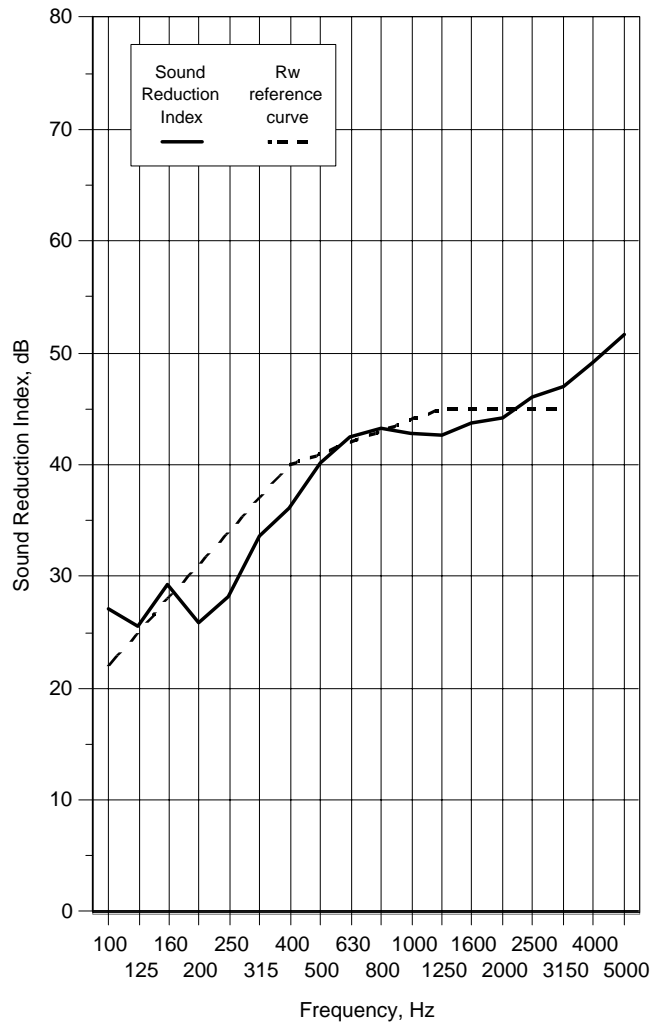
+ designates frequency beyond standard and not UKAS accredited

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## Data Sheet 13

<b>Test Number :</b>	14	<b>Air temperature:</b>	12.8 °C
<b>Client:</b>	Moralt / James Latham	<b>Air humidity:</b>	81 %
<b>Test Date:</b>	05/11/2008	<b>Receiving room volume</b>	300 m3
<b>Sample height:</b>	2.2 m	<b>Source room volume:</b>	115 m3
<b>Sample width:</b>	1 m	<b>Sample weight:</b>	38.3 kg/m2
<b>Product</b>	Finesse FireSound 41 - Vision P with seals		
<b>Identification:</b>	See Report Table 1 for full details.		

Freq f Hz	Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	31.0	25.8
63+	25.4	
80+	23.8	
100	27.1	27.0
125	25.5	
160	29.3	
200	25.8	28.2
250	28.2	
315	33.7	
400	36.1	38.8
500	40.2	
630	42.5	
800	43.2	42.9
1000	42.8	
1250	42.6	
1600	43.7	44.5
2000	44.2	
2500	46.0	
3150	47.0	48.8
4000	49.1	
5000	51.6	
6300+	54.2	55.1
8000+	55.5 *	
10000+	55.7 #	
Average 100-3150	37.4	



Rating according to BS EN ISO 717-1:1997

Rw(C;Ctr)= **41 (-1;-5) dB**

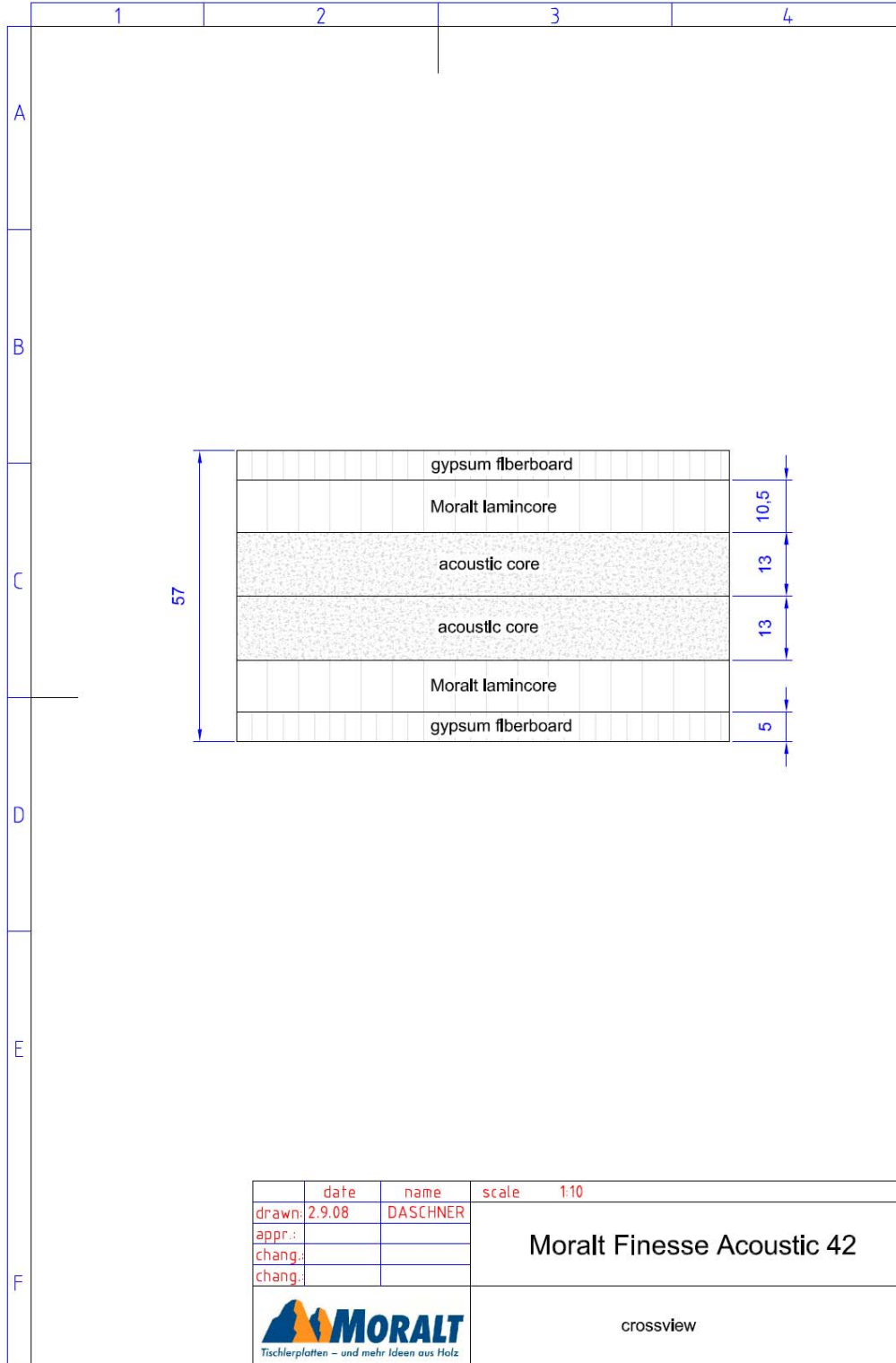
Notes \* designates measurement corrected for background

# designates limit of measurement due to background

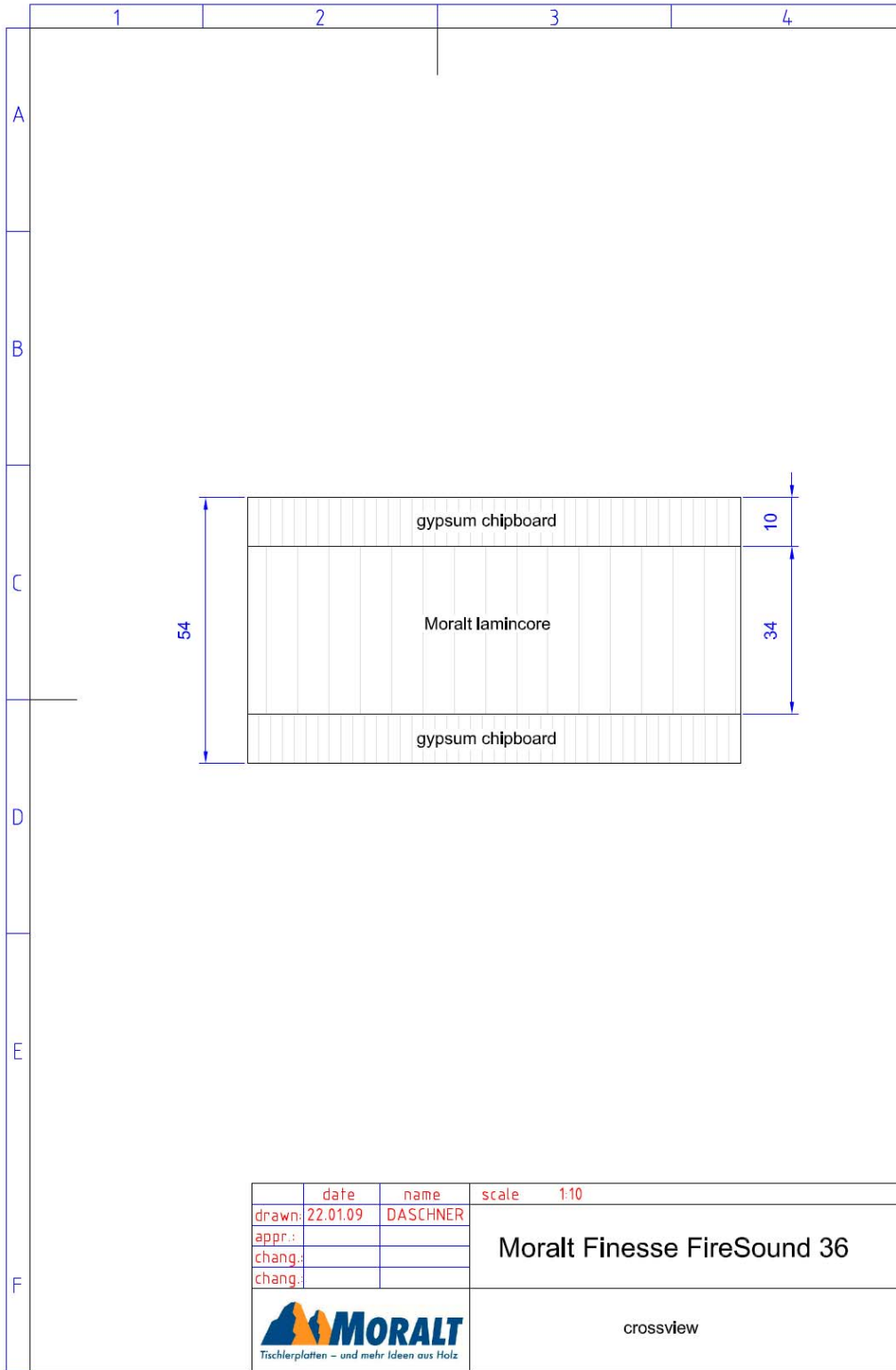
+ designates frequency beyond standard and not UKAS accredited

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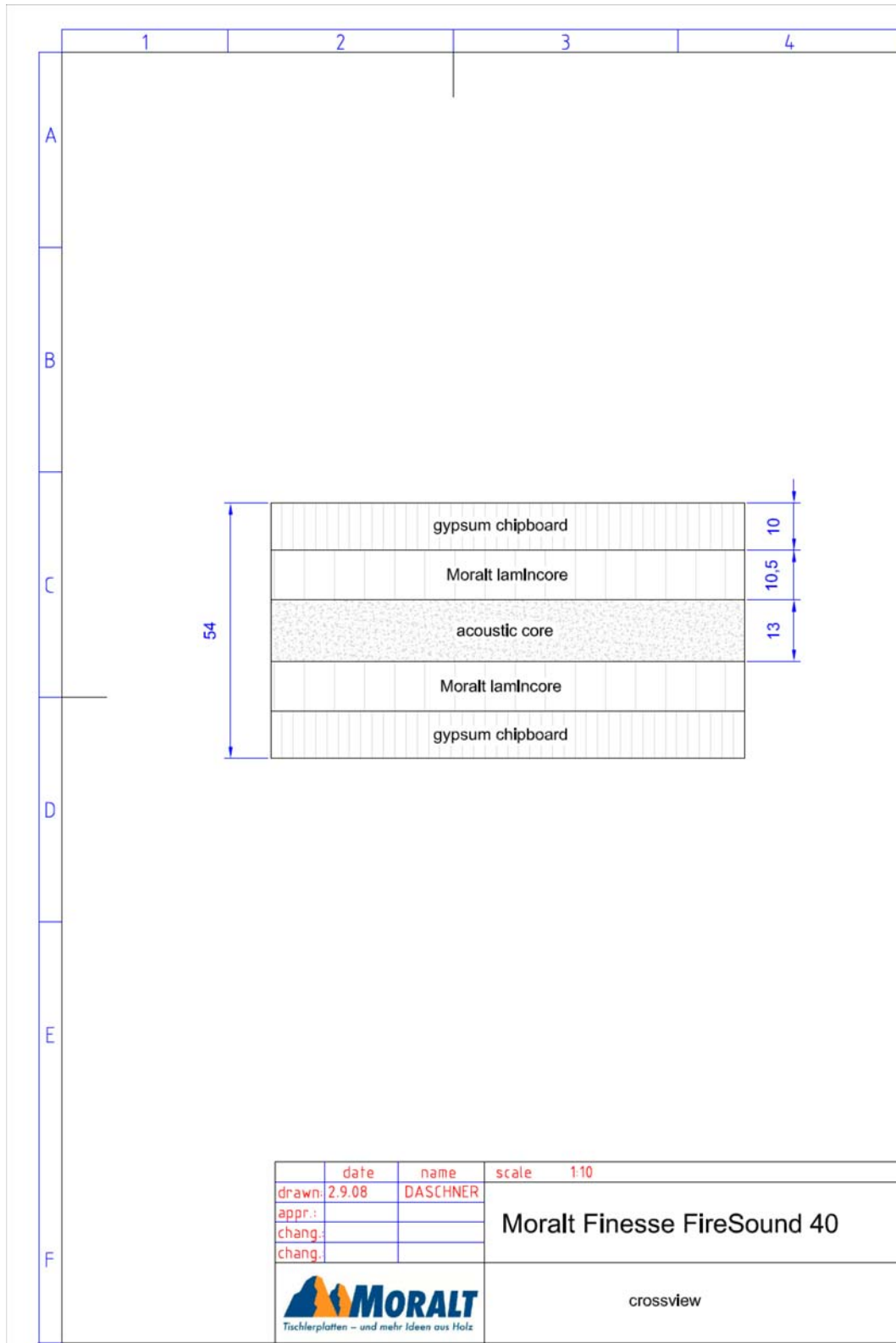
## Drawing 1 - Finesse Acoustic 42



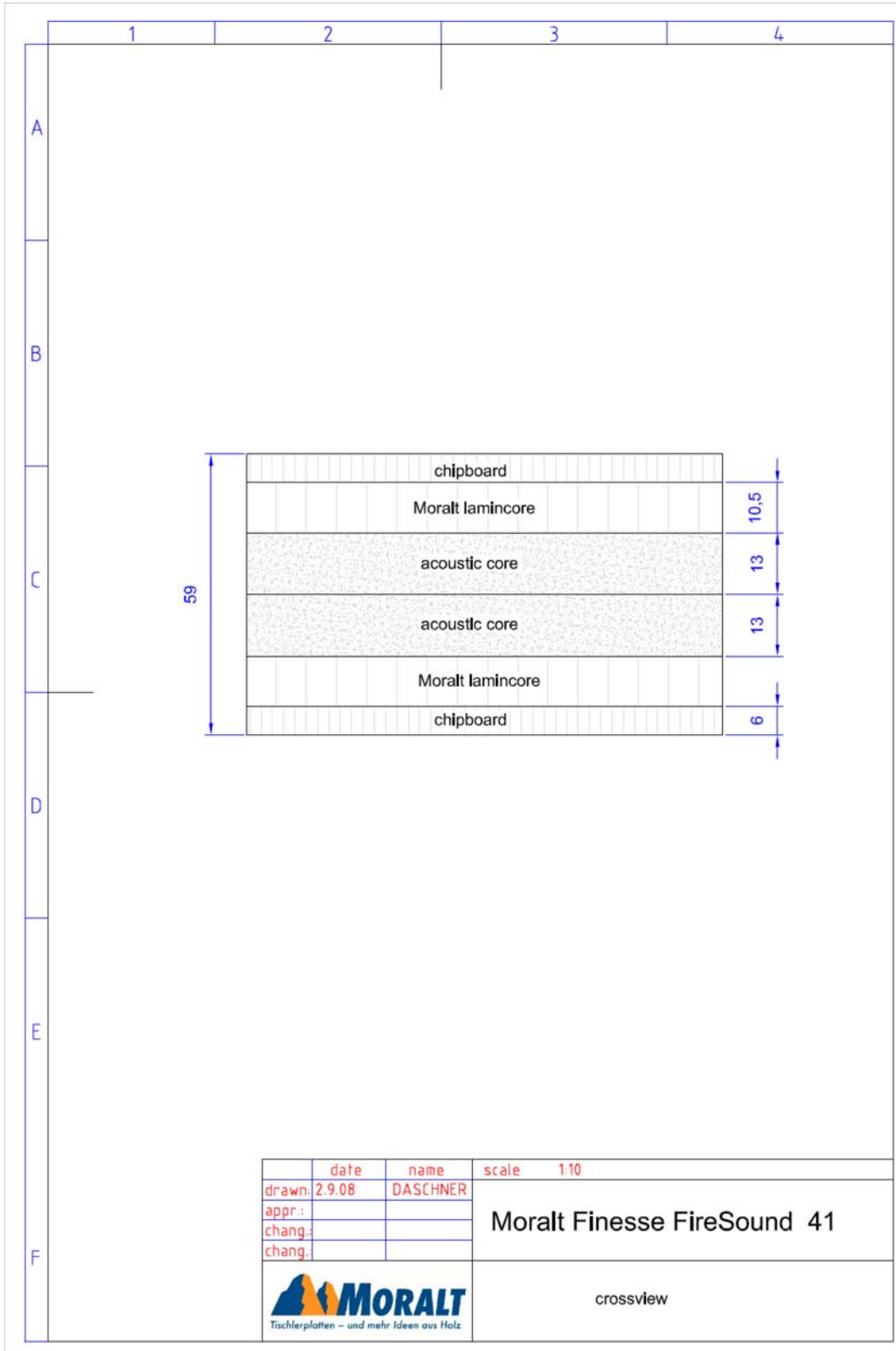
## Drawing 2 - Finesse FireSound 36



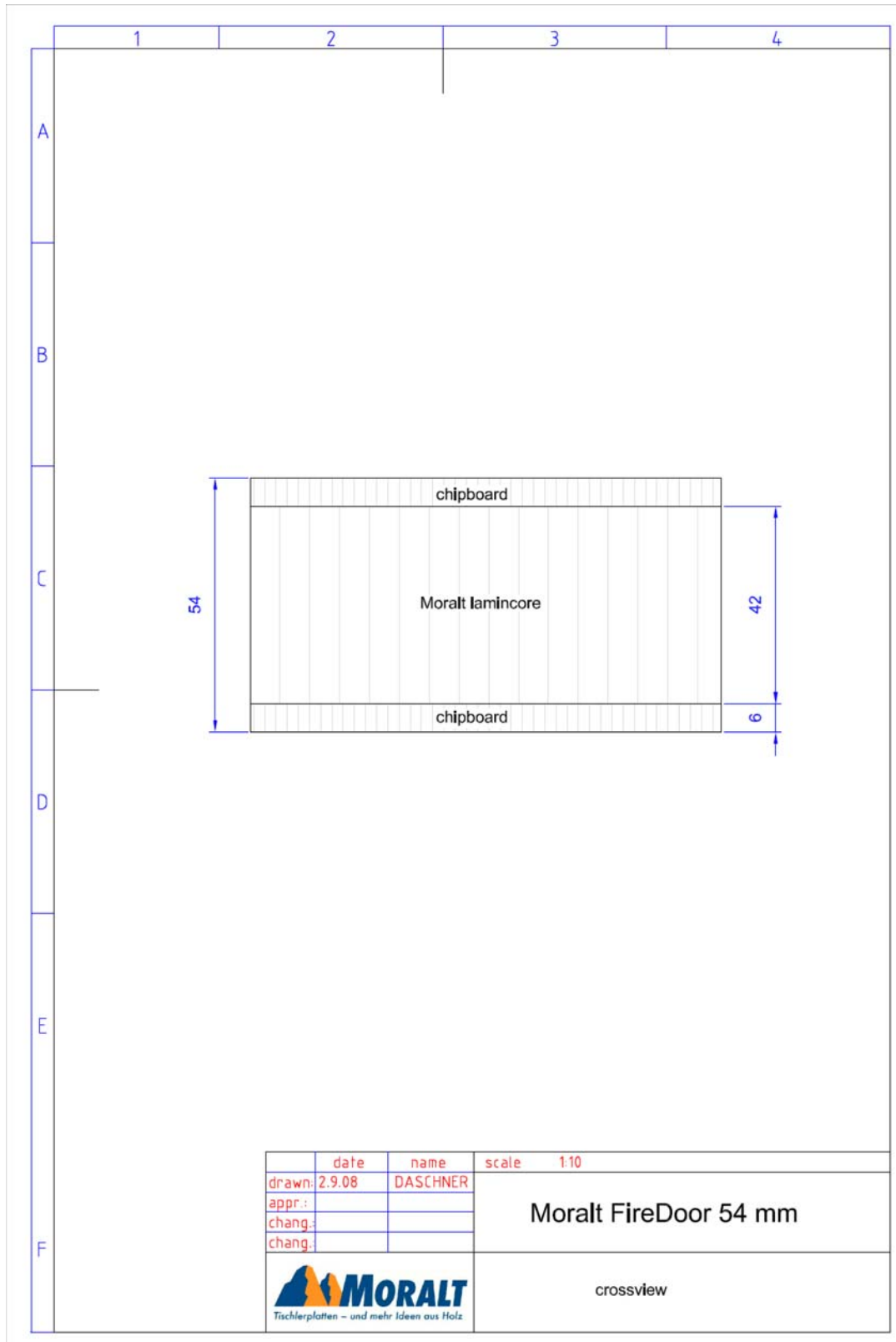
## Drawing 3 - Finesse FireSound 40



## Drawing 4 - Finesse FireSound 41



## Drawing 5 - Fire Door 54



## Appendix 1

### Test Procedure

#### Measurement of Sound Transmission in accordance with BS EN ISO 140-3 : 1995 - TP15

In the laboratory, airborne sound transmission is determined from the difference in sound pressure levels measured across a test sample installed between two reverberant rooms. The difference in measured sound pressure levels is corrected for the amount of absorption in the receiving room. The test is done under conditions which restrict the transmission of sound by paths other than directly through the sample. The source sound field is randomly incident on the sample.

The test sample is located and sealed in an aperture within the brick dividing wall between the two rectangular reverberant (i.e. acoustically "live") room, both of which are constructed from 215mm brick with reinforced concrete floors and roofs. The brick wall has dimensions of 4.8m wide x 3.1m high and 550mm nominal thickness and forms the whole of the common area between the two rooms.

One of the rooms is used as the receiving room and has a volume of 300 cubic metres. It is isolated from the surrounding structure and the adjoining room by the use of resilient mountings and seals ensuring good acoustic isolation. The adjoining source room has a volume of 115 cubic metres.

Broad band noise is produced in the source room from an electronic generator, power amplifier and loudspeaker. The resulting sound pressure levels in both rooms are sampled using a microphone mounted on an oscillating boom and connected to a real time analyser. The signal is filtered into one third octave band widths, integrated and averaged. The value obtained at each frequency is known as the average sound pressure level for either the source or the receiving room. The change in level across the test sample is termed the sound pressure level difference, i.e.

$$D = L_1 - L_2$$

where

D is the equivalent Sound Pressure level difference in dB

L<sub>1</sub> is the equivalent Sound Pressure level in the source room in dB

L<sub>2</sub> is the equivalent Sound Pressure level in the receiving room in dB

The Sound Reduction Index (R) also known by the American terminology Sound Transmission Loss, is defined as the number of decibels by which sound energy

randomly incident on the test sample, is reduced in transmitting through it and is given by the formula:

$$R = D + 10\log_{10} \frac{S}{A} \dots \dots \text{in decibels}$$

where

S is the area of the sample

A is the total absorption in the receiving room

***both dimensions being in consistent units***

The Sound Reduction Index is an expression of the laboratory sound transmission performance of a particular element or construction. It is a function of the mass, thickness, sealing method of mounting etc. and is independent of the overall area of the sample.

However, when an example of this construction is installed on site, the sound insulation obtained will depend upon its surface area, as well as the absorption in the receiving room. The larger the area the greater the sound energy transmitted. Also, the overall sound insulation is affected by the sound transmission through other building elements, some of which may have an inferior performance to the sample tested. In practice, therefore, the potential sound reduction index of a construction is not fully realised on site. Furthermore, the sound reduction index of a particular sample of that construction can only be measured accurately in a laboratory, because only under such controlled conditions can the sound transmission path be limited to the sample under test.

$R_w$ , C and  $C_{tr}$  have been calculated in accordance with the relevant section of BS EN ISO 717-1 :1997 from the results of laboratory tests carried out in accordance with BS EN ISO 140-3 : 1995.

## Appendix 2

### Measurement Uncertainty BS EN ISO 140-3:1995 - TP15

The following values of uncertainty are based on a standard uncertainty multiplied by a coverage factor of  $k = 2$ , which provides a level of confidence of approximately 95%.

Frequency, Hz	Uncertainty, $\pm$ dB
100	2.6
125	2.4
160	2.1
200	2.1
250	1.5
315	1.5
400	1.2
500	1.2
800	1.0
1000	1.0
1250	1.0
1600	1.0
2000	1.0
2500	1.0
3150	1.0