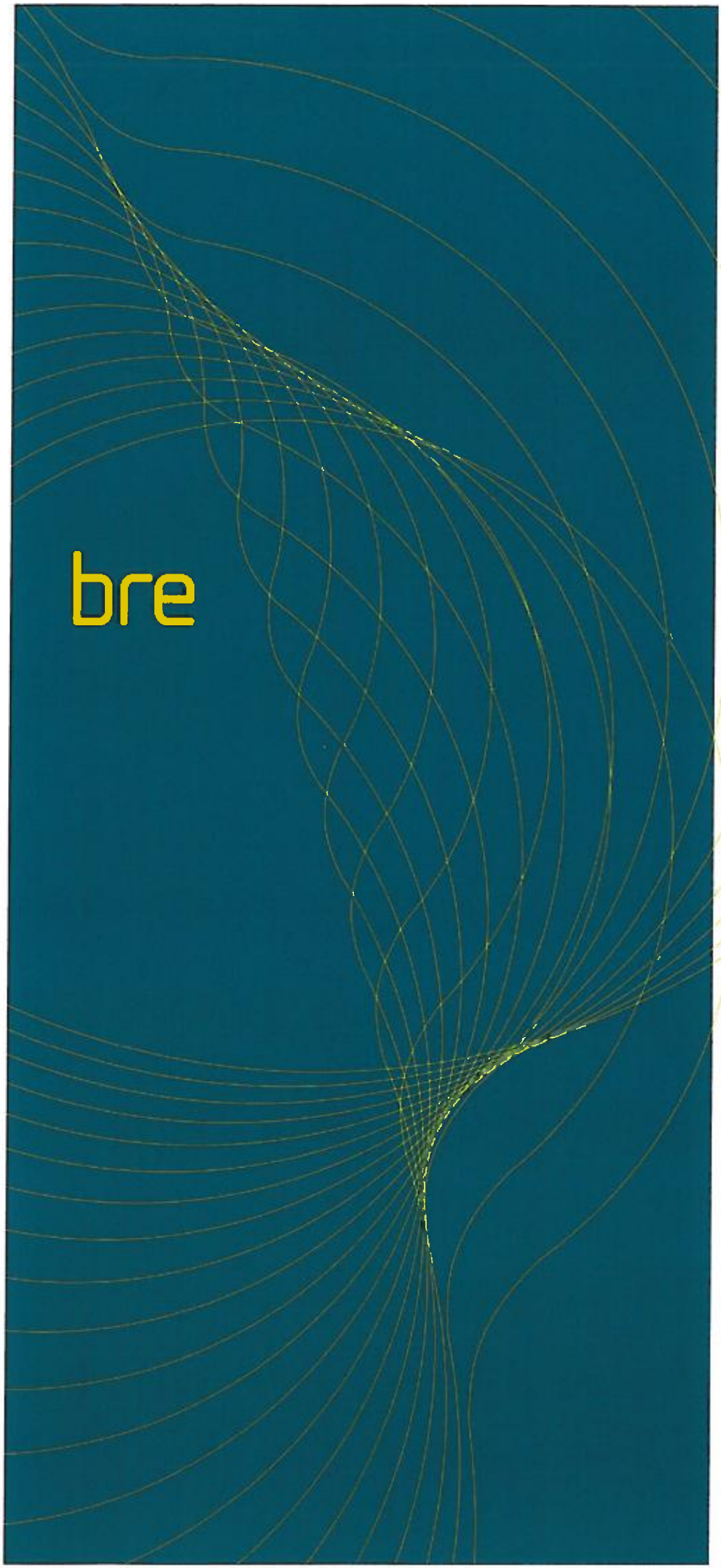


Rytons Building Products Ltd. Laboratory Sound Insulation Test of Core Ventilators in the BRE Horizontal Transmission Suite

Prepared for:
Design House
Orion Way
Kettering Business Park
Kettering Northants
NN15 6NL

3rd April 2013

Test report number **284908**

UKAS TESTING

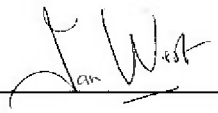
0578

Tested by

Name Mr I West

Position Acoustics Laboratory Manager

Date 13th February 2013

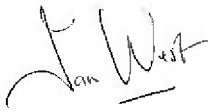
Signature 

Prepared by

Name Mr I West

Position Acoustics Laboratory Manager

Date 15th February 2013

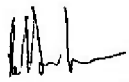
Signature 

Checked by

Name Roger Sadgrove

Position Principal Consultant

Date 21st February 2013

Signature 

Approved on behalf of BRE

Name Dr P Blackmore

Position Associate Director

Date 21st February 2013

Signature 

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BRE is not UKAS accredited to make opinions and interpretation. Any opinions and interpretations included as part of this report are clearly marked as such.

UKAS TESTING 0578

Contents

1 Introduction

BRE Acoustics was commissioned by Rytons Building Products Ltd to carry out airborne sound insulation measurements in the BRE horizontal transmission suite (Building 9), BRE, Garston, Watford, Hertfordshire, WD25 9XX.

This report details the testing outlined in BRE proposal 132491.

2 Testing details

2.1 Test dates and personnel

The measurements detailed in this report were made on 13th February 2013 by Mr I West of BRE Acoustics.

2.2 Test method and applicable standards

Measurement of airborne sound insulation was made in accordance with BS EN 20140-10: 1992. Single number quantities were calculated in accordance with BS EN ISO 717-1:1997.

BRE Acoustics holds UKAS accreditation for the measurement of sound insulation in the field and the laboratory. The measurements were conducted using the procedures accredited by UKAS.

2.3 Test element installation

The filler wall was installed by BRE; the ventilators were installed by Rytons Building Products Ltd.

2.4 Instrumentation

The equipment used to conduct the tests is identified in Table 1.

Table 1 Equipment list

Equipment description	Manufacturer	Type	UKAS identification number
Microphone Calibrator	NOR	1253	01/009
Microphone	B&K	4188-A-O	02/203, 02/204
Microphone Preamplifier	B&K	2671	04/203, 04/204
Microphone Adapter	NOR	NE1449	06/101, 06/102
Graphic Equaliser	Phonic	PEQ3300	10/002
Amplifier	NOR	260H	11/013
Real Time Analyser	NOR	840	13/002
Microphone Rotating Boom	NOR	212NA	14/004, 14/005
Loudspeaker	B&K	4224	11/006
Dodecahedron speaker	Norsonic	270H	11/014, 11/016

The gain of the real time analyser was adjusted to give a reading of 124.0 dB at 250 Hz using the NOR type 1253 calibrator.

All equipment is calibrated in accordance with BRE procedures, using reference equipment calibrated by a UKAS accredited laboratory.

2.5 Test numbers

Table 2 lists each test element along with its corresponding test number. The construction details for each test element can be found from Table 3 by referring to the test number.

Table 2 Test numbers

Test number	Test element	Source room volume (m^3)	Receive room volume (m^3)	Common area (m^2)
L112-110	Filler Wall	130	115	9.8
L112-072	Ventilator	130	115	9.8
L112-076	Ventilator	130	115	9.8
L112-077	Ventilator	130	115	9.8
L112-078	Ventilator	130	115	9.8
L112-079	Ventilator	130	115	9.8
L112-080	Ventilator	130	115	9.8
L112-081	Ventilator	130	115	9.8
L112-082	Ventilator	130	115	9.8
L112-083	Ventilator	130	115	9.8
L112-084	Ventilator	130	115	9.8

2.6 Construction details, test numbers and sound insulation test results

The construction details and single number quantities for the sound insulation tests are shown in Table 3. When construction details are provided by a third party, they are checked by BRE where possible. The UKAS test result sheets are included in the appendices with the octave and third octave band results.

Table 3 Construction details

Test element	Test number	Construction details	$D_{n,e,,w}$ ($C;C_{tr}$) (dB)
Filler wall	L112-110	2x13mm gypsum based board (9.0kg/m²) perimeter taped screwed to 70mmetal stud (0.5kg/m^2) at 600mm centres with 100mm insulation (10kg/m^3), 100mm air gap, 100mm insulation (10kg/m^3), 70mm metal stud (0.5kg/m^2) at 600mm centres screwed to 2x13mm gypsum based board (9.0kg/m²) perimeter taped	64(-3;-9)*
Ventilator	L112-072	AAC125TUBE- Super Acoustic AirCore® Tube (358mm L)	44(0;-2)
	L112-076	AAC125LP- Super Acoustic LookRyt® AirCore®	44(0;-2)
	L112-077	AAC125LPCWL – Cowled Super Acoustic LookRyt® AirCore®	45(0;-3)
	L112-078	AAH125LP-High Rise Super Acoustic LookRyt® AirCore®	44(0;-2)
	L112-079	AAC125HP-OPEN- Super Acoustic Controllable LookRyt® AirCore®	43(0;-2)
	L112-080	AAC125HP-CLOSED- Super Acoustic Controllable LookRyt® AirCore®	50(-1;-3)
	L112-081	AAC125HPCWL – OPEN – Cowled Super Acoustic Controllable LookRyt® AirCore®	45(-1;-3)
	L112-082	AAC125HPCWL-CLOSED- Cowled Super Acoustic Controllable LookRyt® AirCore®	50(-1;-4)
	L112-083	AAH125HP-OPEN- High Rise Super Acoustic Controllable LookRyt® AirCore®	44(0;-2)
	L112-084	AAH125HP-CLOSED- High Rise Super Acoustic Controllable LookRyt® AirCore®	50(0;-3)

*This is equivalent to $D_{n,e,,F,w}$. $D_{n,e,,F,w}$ is defined in BS EN 20140-10: 1992.

2.7 Plans

The position of the filler wall in the transmission suite aperture is indicated in Figure 1

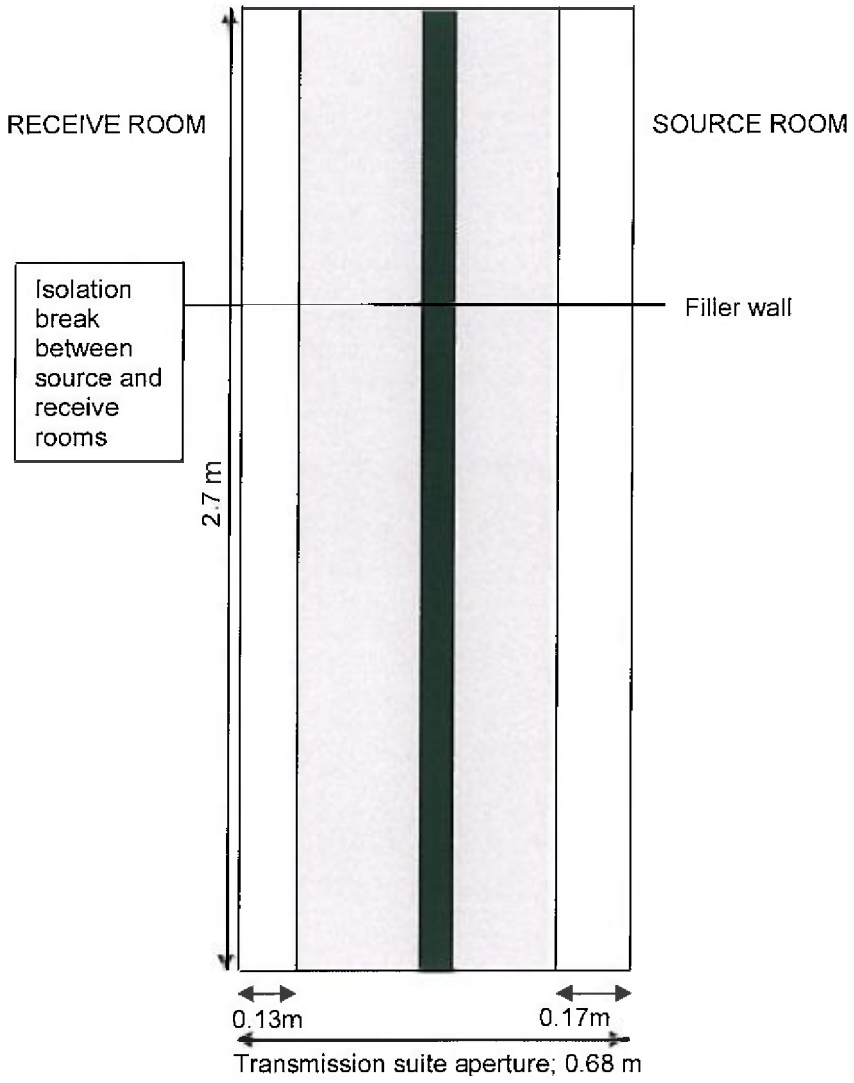


Figure 1 Section through elevation showing the position of the filler wall in the transmission suite aperture

3 Appendices

3.1 UKAS test result sheets

3.2 Octave and third-octave band data

Laboratory measurement of airborne sound insulation of building elements
Sound reduction index according to BS EN ISO 140-3:1995
B9, Horizontal Transmission Suite
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-110 **Test element:** Filler Wall

0578

Test element area: 9.8 m²
Description:
See Table 3

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 54 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	*R* (dB)	
50	1.68	23.1	93.4	69.6	23.4	
63	1.51	20.1	98.4	73.7	23.7	
80	1.28	17.7	96.5	65.2	29.6	
100	1.56	19.4	97.8	59.5	37.5	
125	1.72	16.6	98.8	56.6	41.8	
160	1.72	16.8	96.8	49.8	46.6	
200	1.80	12.1	98.0	47.2	50.6	
250	1.58	14.6	95.9	41.1	54.0	
315	1.66	11.0	93.9	35.0	58.4	
400	1.60	11.8	92.7	29.9	62.2	
500	1.57	15.7	93.5	28.9	63.8	+
630	1.61	14.7	95.3	27.3	67.2	+
800	1.59	12.1	95.6	26.2	68.7	+
1,000	1.56	9.3	95.2	21.3	73.0	+
1,250	1.62	11.3	95.4	18.1	76.7	+
1,600	1.59	12.8	95.7	15.6	79.4	*
2,000	1.57	10.3	93.4	12.7	79.9	*
2,500	1.51	8.7	93.7	16.8	76.0	+
3,150	1.38	7.5	94.6	15.3	78.0	+
4,000	1.25	7.9	99.5	13.8	83.9	+
5,000	1.13	7.4	99.7	10.9	86.6	*

+ Receiving room level adjusted for background

* Receiving room level within 6 dB of background

Rating according to BS EN ISO 717-1:1997

R_w (C;C_{tr}) = 64 (-3;-9) dB $C_{50\text{-}3150}$ = -8 dB $C_{50\text{-}5000}$ = -7 dB $C_{100\text{-}5000}$ = -2 dB

$C_{tr,50\text{-}3150}$ = -21 dB $C_{tr,50\text{-}5000}$ = -21 dB $C_{tr,100\text{-}5000}$ = -9 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the single quantity (R_w) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves (R)

Laboratory measurement of airborne sound insulation of building elements
Sound reduction index according to BS EN ISO 140-3:1995
B9, Horizontal Transmission Suite

Client: Rytons Building Products Ltd

Test date: 12/02/2013 **Test number:** L112-110 **Test element:** Filler Wall

0578

Test element area: 9.8 m²

Description:

See Table 3

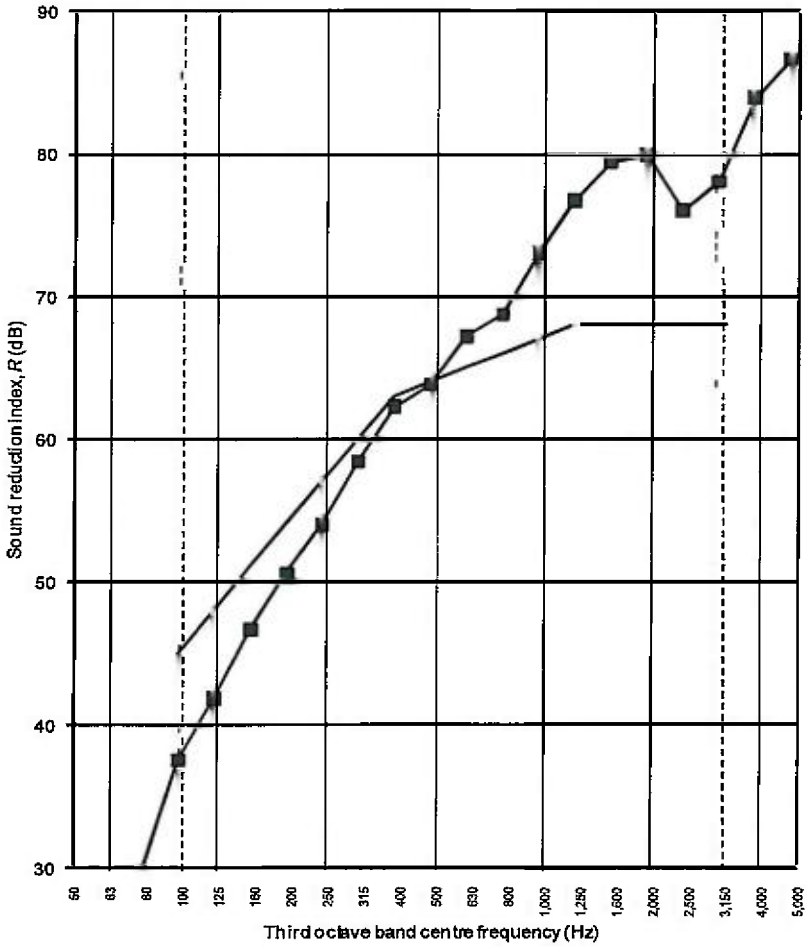
Source room volume: 130 m³ **Air temperature:** 9 °C

Receive room volume: 115 m³ **Air relative humidity:** 54 %

Frequency (Hz)	*R* One-third octave (dB)
50	23.4
63	23.7
80	29.6
100	37.5
125	41.8
160	46.6
200	50.6
250	54.0
315	58.4
400	62.2
500	63.8
630	67.2
800	68.7
1,000	73.0
1,250	76.7
1,600	79.4
2,000	79.9
2,500	76.0
3,150	78.0
4,000	83.9
5,000	86.6

+ Receiving room level adjusted for background

* Receiving room level within 6 dB of background



Rating according to BS EN ISO 717-1:1997

R_w (C;C_{tr}) = 64 (-3;-9) dB $C_{50\text{-}3150}$ = -8 dB $C_{50\text{-}5000}$ = -7 dB $C_{100\text{-}5000}$ = -2 dB

$C_{tr,50\text{-}3150}$ = -21 dB $C_{tr,50\text{-}5000}$ = -21 dB $C_{tr,100\text{-}5000}$ = -9 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity (R_w) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves (R)

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-079 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAC125HP-OPEN- Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	92.6	68.9	24.6	o
63	1.51	20.1	98.0	72.8	25.6	o
80	1.28	17.7	96.6	64.9	31.4	o
100	1.56	19.4	98.0	58.6	39.9	o
125	1.72	16.6	98.6	56.4	43.2	o
160	1.72	16.8	96.7	52.3	45.4	o
200	1.80	12.1	98.2	57.0	41.6	x
250	1.58	14.6	95.9	60.2	35.0	
315	1.66	11.0	93.7	57.7	35.5	
400	1.60	11.8	92.4	54.3	37.5	
500	1.57	15.7	93.5	56.3	36.4	
630	1.61	14.7	95.1	55.6	38.9	
800	1.59	12.1	95.4	55.4	39.4	
1,000	1.56	9.3	94.9	49.0	45.1	
1,250	1.62	11.3	95.4	40.4	54.4	
1,600	1.59	12.8	95.7	35.3	59.8	
2,000	1.57	10.3	93.3	37.9	54.7	
2,500	1.51	8.7	93.7	35.9	56.9	
3,150	1.38	7.5	94.6	32.4	60.9	
4,000	1.25	7.9	99.6	30.7	67.2	
5,000	1.13	7.4	100.0	27.9	69.9	

x Adjusted for flanking transmission

o Correction = 13 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 43 (0;-2) dB $C_{50\text{-}3150}$ = 0 dB $C_{50\text{-}5000}$ = 1 dB $C_{100\text{-}5000}$ = 1 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -2 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the single quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)

Client: Rytons Building Products Ltd

Test date: 12/02/2013 **Test number:** L112-079 **Test element:** vent

0578

Filler wall area: 9.8 m²

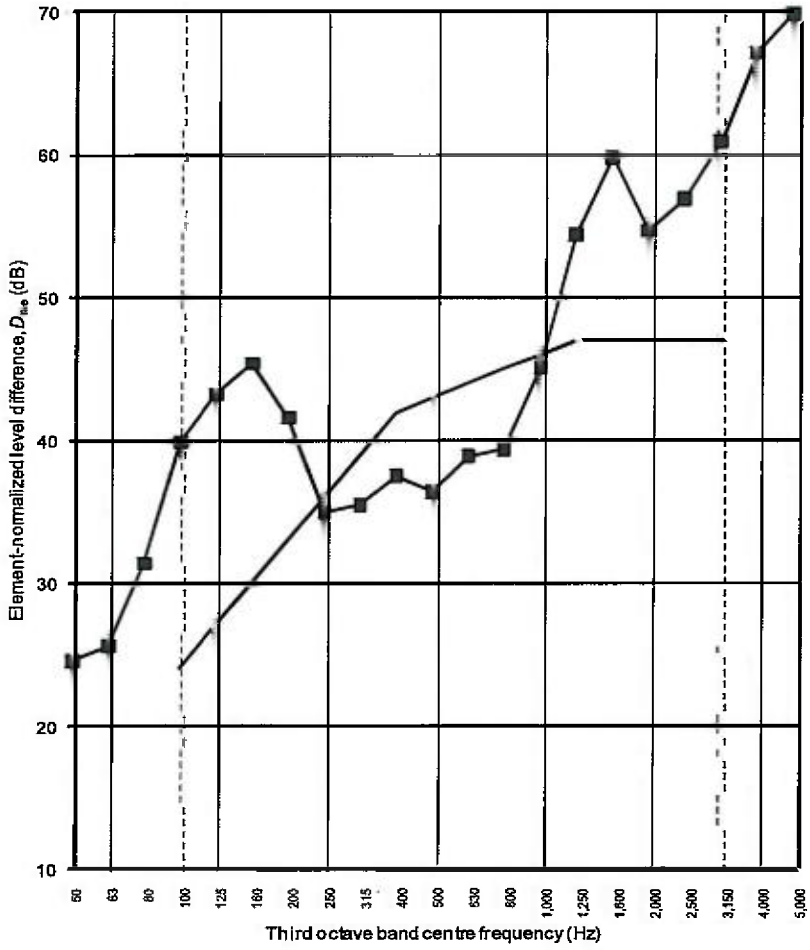
Description:

AAC125HP-OPEN- Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C

Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	24.6	o
63	25.6	o
80	31.4	o
100	39.9	o
125	43.2	o
160	45.4	o
200	41.6	x
250	35.0	
315	35.5	
400	37.5	
500	36.4	
630	38.9	
800	39.4	
1,000	45.1	
1,250	54.4	
1,600	59.8	
2,000	54.7	
2,500	56.9	
3,150	60.9	
4,000	67.2	
5,000	69.9	



x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 43 (0;-2) dB $C_{50\text{-}3150}$ = 0 dB $C_{50\text{-}5000}$ = 1 dB $C_{100\text{-}5000}$ = 1 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -2 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the single quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

0578

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-080 **Test element:** vent

Filler wall area: 9.8 m²
Description:
AAC125HP-CLOSED- Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	93.1	69.0	25.0	o
63	1.51	20.1	98.2	73.0	25.7	o
80	1.28	17.7	96.7	64.9	31.6	o
100	1.56	19.4	97.5	58.4	39.7	o
125	1.72	16.6	98.4	56.6	42.8	o
160	1.72	16.8	96.5	52.1	45.4	o
200	1.80	12.1	98.2	56.5	42.2	x
250	1.58	14.6	96.0	57.9	37.5	
315	1.66	11.0	93.8	51.4	42.0	
400	1.60	11.8	92.6	49.8	42.2	
500	1.57	15.7	93.6	50.3	42.6	
630	1.61	14.7	95.2	46.7	48.0	
800	1.59	12.1	95.5	46.5	48.3	
1,000	1.56	9.3	94.9	39.0	55.2	
1,250	1.62	11.3	95.4	31.4	63.5	
1,600	1.59	12.8	95.7	31.4	63.7	
2,000	1.57	10.3	93.4	33.8	58.9	
2,500	1.51	8.7	93.7	33.4	59.4	
3,150	1.38	7.5	94.6	31.1	62.3	
4,000	1.25	7.9	99.6	29.7	68.2	
5,000	1.13	7.4	99.9	26.5	71.3	

x Adjusted for flanking transmission

o Correction = 13 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 50 (-1;-3) dB $C_{50\text{-}3150}$ = -1 dB $C_{50\text{-}5000}$ = 0 dB $C_{100\text{-}5000}$ = 0 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -3 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

0578

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)

Client: Rytons Building Products Ltd

Test date: 12/02/2013 **Test number:** L112-080 **Test element:** vent

Filler wall area: 9.8 m²

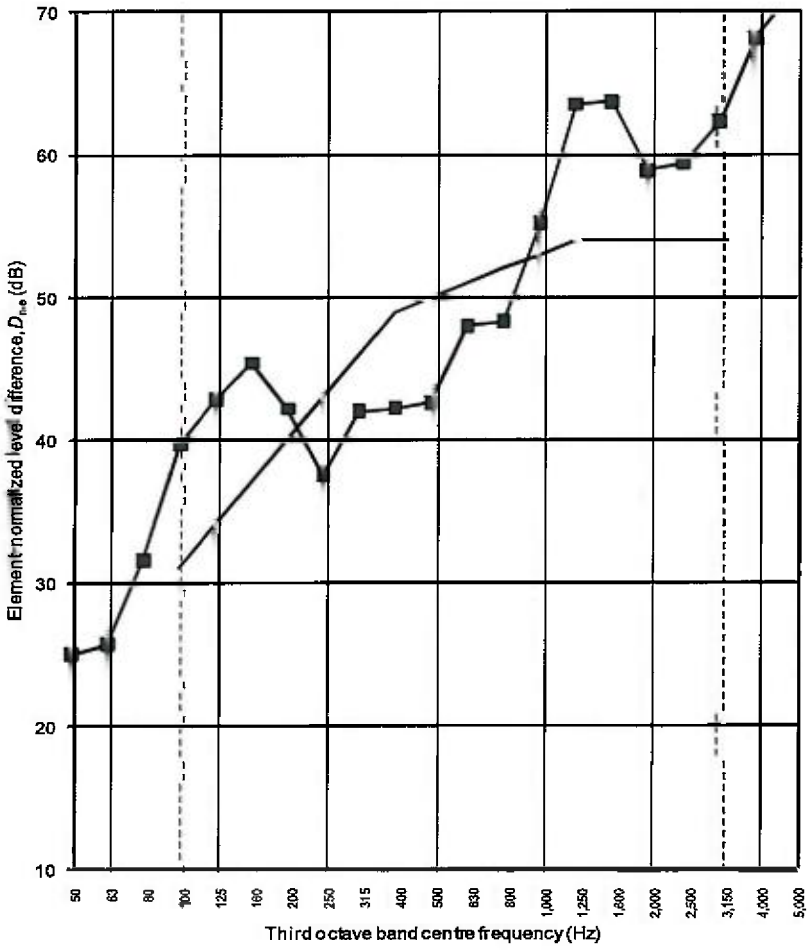
Description:

AAC125HP-CLOSED- Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C

Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	25.0	o
63	25.7	o
80	31.6	o
100	39.7	o
125	42.8	o
160	45.4	o
200	42.2	x
250	37.5	
315	42.0	
400	42.2	
500	42.6	
630	48.0	
800	48.3	
1,000	55.2	
1,250	63.5	
1,600	63.7	
2,000	58.9	
2,500	59.4	
3,150	62.3	
4,000	68.2	
5,000	71.3	



x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 50 (-1;-3) dB

$C_{50\text{-}3150}$	= -1 dB	$C_{50\text{-}5000}$	= 0 dB	$C_{100\text{-}5000}$	= 0 dB
$C_{tr,50\text{-}3150}$	= -	$C_{tr,50\text{-}5000}$	= -	$C_{tr,100\text{-}5000}$	= -3 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)

Client: Rytons Building Products Ltd

Test date: 12/02/2013 **Test number:** L112-081 **Test element:** vent

0578

Filler wall area: 9.8 m²

Description:

AAC125HPCWL – OPEN – Cowled Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C

Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	92.8	69.8	23.8	o
63	1.51	20.1	97.8	73.5	24.7	o
80	1.28	17.7	96.6	64.3	32.0	o
100	1.56	19.4	97.8	58.3	40.0	o
125	1.72	16.6	98.6	56.6	43.0	o
160	1.72	16.8	96.8	53.3	44.5	o
200	1.80	12.1	98.3	59.3	38.8	
250	1.58	14.6	96.0	62.4	32.9	
315	1.66	11.0	93.8	58.0	35.3	
400	1.60	11.8	92.5	57.4	34.4	
500	1.57	15.7	93.6	54.4	38.5	
630	1.61	14.7	95.2	52.2	42.4	
800	1.59	12.1	95.5	49.4	45.5	
1,000	1.56	9.3	94.9	42.4	51.8	
1,250	1.62	11.3	95.5	36.4	58.6	
1,600	1.59	12.8	95.7	30.0	65.1	
2,000	1.57	10.3	93.3	31.6	61.0	
2,500	1.51	8.7	93.6	32.9	59.9	
3,150	1.38	7.5	94.6	27.7	65.6	
4,000	1.25	7.9	99.7	27.0	71.0	
5,000	1.13	7.4	100.0	24.7	73.1	

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 45 (-1;-3) dB $C_{50\text{-}3150}$ = -1 dB $C_{50\text{-}5000}$ = 0 dB $C_{100\text{-}5000}$ = 0 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -3 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

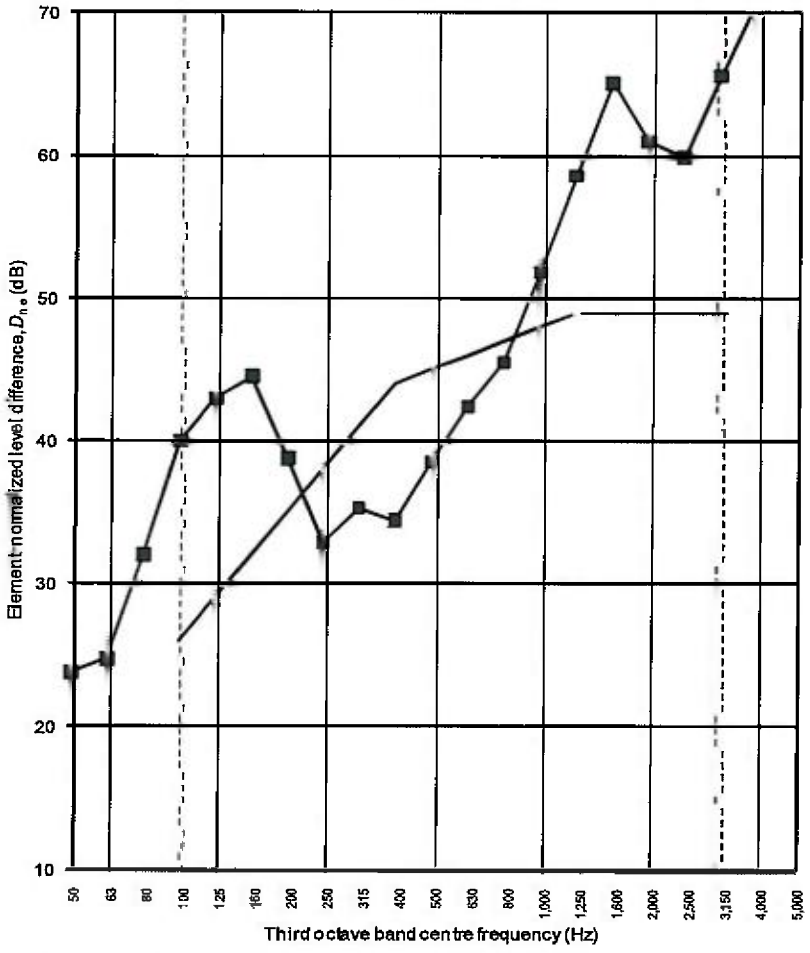
Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-081 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAC125HPCWL – OPEN – Cowled Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	23.8	o
63	24.7	o
80	32.0	o
100	40.0	o
125	43.0	o
160	44.5	o
200	38.8	
250	32.9	
315	35.3	
400	34.4	
500	38.5	
630	42.4	
800	45.5	
1,000	51.8	
1,250	58.6	
1,600	65.1	
2,000	61.0	
2,500	59.9	
3,150	65.6	
4,000	71.0	
5,000	73.1	



o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 45 (-1;-3) dB $C_{50\text{-}3150}$ = -1 dB $C_{50\text{-}5000}$ = 0 dB $C_{100\text{-}5000}$ = 0 dB
$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -3 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-082 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAC125HPCWL-CLOSED- Cowled Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	93.1	69.1	24.8	o
63	1.51	20.1	98.1	73.0	25.5	o
80	1.28	17.7	96.3	64.8	31.3	o
100	1.56	19.4	97.8	58.4	40.0	o
125	1.72	16.6	98.7	56.4	43.3	o
160	1.72	16.8	96.8	52.8	45.0	o
200	1.80	12.1	98.0	57.3	40.6	
250	1.58	14.6	95.9	58.2	37.0	
315	1.66	11.0	93.9	53.4	40.1	
400	1.60	11.8	92.6	54.2	37.8	
500	1.57	15.7	93.6	48.6	44.4	
630	1.61	14.7	95.2	43.8	50.8	
800	1.59	12.1	95.5	41.0	53.9	
1,000	1.56	9.3	95.0	32.5	61.7	
1,250	1.62	11.3	95.5	30.3	64.6	
1,600	1.59	12.8	95.7	29.8	65.3	
2,000	1.57	10.3	93.3	30.3	62.3	
2,500	1.51	8.7	93.7	31.5	61.3	
3,150	1.38	7.5	94.7	28.4	65.0	
4,000	1.25	7.9	99.7	28.1	69.9	
5,000	1.13	7.4	100.1	25.2	72.7	

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 50 (-1;-4) dB $C_{50\text{-}3150}$ = -2 dB $C_{50\text{-}5000}$ = -1 dB $C_{100\text{-}5000}$ = 0 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -4 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

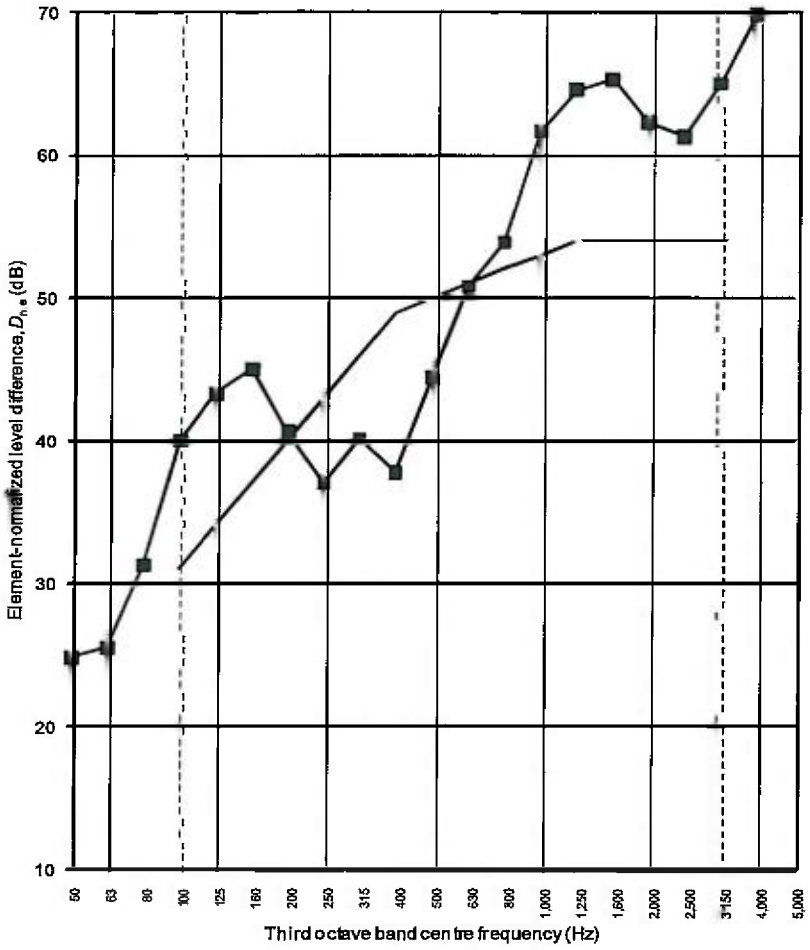
Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-082 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAC125HPCWL-CLOSED- Cowled Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	24.8	o
63	25.5	o
80	31.3	o
100	40.0	o
125	43.3	o
160	45.0	o
200	40.6	
250	37.0	
315	40.1	
400	37.8	
500	44.4	
630	50.8	
800	53.9	
1,000	61.7	
1,250	64.6	
1,600	65.3	
2,000	62.3	
2,500	61.3	
3,150	65.0	
4,000	69.9	
5,000	72.7	



o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 50 (-1;-4) dB

$C_{50\text{-}3150}$	= -2 dB	$C_{50\text{-}5000}$	= -1 dB	$C_{100\text{-}5000}$	= 0 dB
$C_{tr,50\text{-}3150}$	= -	$C_{tr,50\text{-}5000}$	= -	$C_{tr,100\text{-}5000}$	= -4 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the single quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

0578

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-083 **Test element:** vent

Filler wall area: 9.8 m²
Description:
AAH125HP-OPEN- High Rise Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	92.8	68.9	24.7	o
63	1.51	20.1	98.1	72.9	25.7	o
80	1.28	17.7	96.5	64.5	31.6	o
100	1.56	19.4	97.8	58.1	40.3	o
125	1.72	16.6	98.5	56.3	43.3	o
160	1.72	16.8	97.0	51.7	46.3	o
200	1.80	12.1	98.4	56.3	42.7	x
250	1.58	14.6	96.2	59.2	36.4	
315	1.66	11.0	93.9	57.0	36.4	
400	1.60	11.8	92.6	53.5	38.4	
500	1.57	15.7	93.5	55.7	37.1	
630	1.61	14.7	95.2	55.0	39.6	
800	1.59	12.1	95.3	54.7	40.0	
1,000	1.56	9.3	94.9	49.4	44.8	
1,250	1.62	11.3	95.5	40.0	54.9	
1,600	1.59	12.8	95.7	34.3	60.8	
2,000	1.57	10.3	93.3	36.7	55.9	
2,500	1.51	8.7	93.7	36.1	56.7	
3,150	1.38	7.5	94.6	30.5	62.8	
4,000	1.25	7.9	99.7	28.6	69.5	
5,000	1.13	7.4	100.1	25.3	72.6	

x Adjusted for flanking transmission

o Correction = 13 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 44 (0;-2) dB

$C_{50\text{-}3150}$	= 0 dB	$C_{50\text{-}5000}$	= 1 dB	$C_{100\text{-}5000}$	= 1 dB
$C_{tr,50\text{-}3150}$	= -	$C_{tr,50\text{-}5000}$	= -	$C_{tr,100\text{-}5000}$	= -2 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

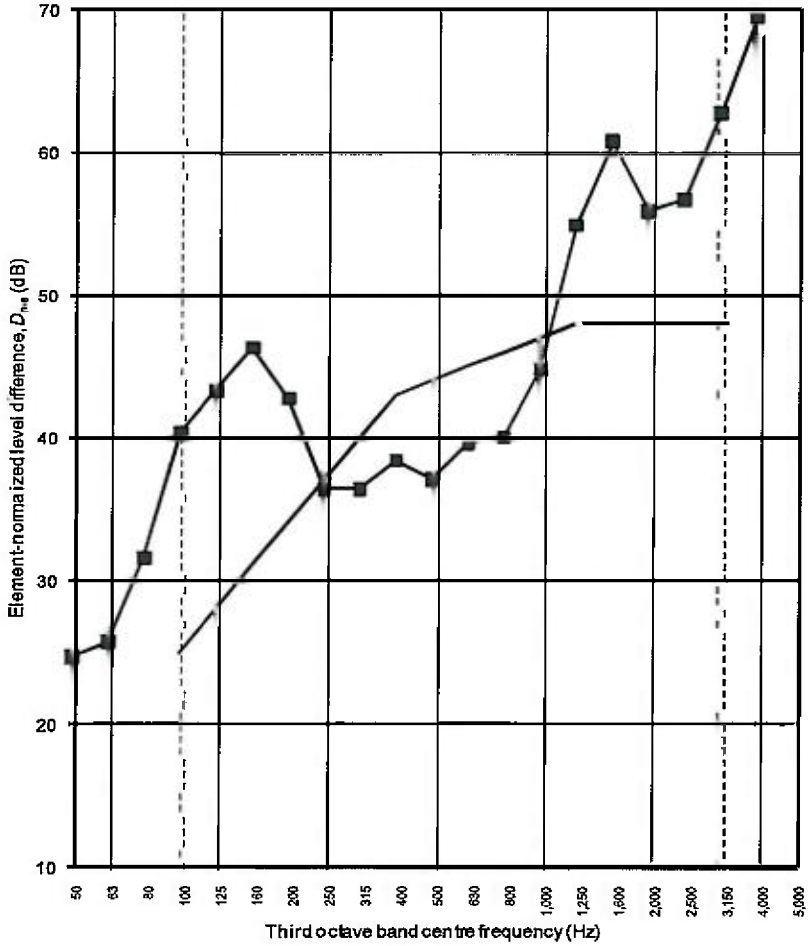
Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-083 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAH125HP-OPEN- High Rise Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	24.7	o
63	25.7	o
80	31.6	o
100	40.3	o
125	43.3	o
160	46.3	o
200	42.7	x
250	36.4	
315	36.4	
400	38.4	
500	37.1	
630	39.6	
800	40.0	
1,000	44.8	
1,250	54.9	
1,600	60.8	
2,000	55.9	
2,500	56.7	
3,150	62.8	
4,000	69.5	
5,000	72.6	



x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 44 (0;-2) dB

$C_{50\text{-}3150}$	= 0 dB	$C_{50\text{-}5000}$	= 1 dB	$C_{100\text{-}5000}$	= 1 dB
$C_{tr,50\text{-}3150}$	= -	$C_{tr,50\text{-}5000}$	= -	$C_{tr,100\text{-}5000}$	= -2 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

Laboratory measurement of airborne sound insulation of small building elements
Element-normalized level difference according to BS EN 20140-10:1992
BRE horizontal transmission suite (B9)
Client: Rytons Building Products Ltd
Test date: 12/02/2013 **Test number:** L112-084 **Test element:** vent

0578

Filler wall area: 9.8 m²
Description:
AAH125HP-CLOSED- High Rise Super Acoustic Controllable LookRyt® AirCore®

Source room volume: 130 m³ **Air temperature:** 9 °C
Receive room volume: 115 m³ **Air relative humidity:** 55 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	1.68	23.1	93.3	69.3	24.8	o
63	1.51	20.1	98.0	73.1	25.3	o
80	1.28	17.7	97.0	64.5	32.2	o
100	1.56	19.4	97.7	58.1	40.1	o
125	1.72	16.6	98.7	56.3	43.4	o
160	1.72	16.8	96.8	51.7	46.0	o
200	1.80	12.1	98.3	53.9	45.6	x
250	1.58	14.6	96.0	56.5	38.8	
315	1.66	11.0	93.7	51.5	41.8	
400	1.60	11.8	92.5	49.0	42.9	
500	1.57	15.7	93.5	50.1	42.8	
630	1.61	14.7	95.2	46.6	48.1	
800	1.59	12.1	95.4	47.0	47.8	
1,000	1.56	9.3	94.9	39.4	54.8	
1,250	1.62	11.3	95.4	30.7	64.2	
1,600	1.59	12.8	95.7	28.5	66.6	
2,000	1.57	10.3	93.3	30.1	62.5	
2,500	1.51	8.7	93.6	29.5	63.3	
3,150	1.38	7.5	94.6	27.9	65.5	
4,000	1.25	7.9	99.6	26.9	71.0	
5,000	1.13	7.4	100.0	23.9	74.0	

x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 50 (0;-3) dB $C_{50\text{-}3150}$ = -1 dB $C_{50\text{-}5000}$ = 0 dB $C_{100\text{-}5000}$ = 1 dB

$C_{tr,50\text{-}3150}$ = - $C_{tr,50\text{-}5000}$ = - $C_{tr,100\text{-}5000}$ = -3 dB

Evaluation based on laboratory measurement results obtained by an engineering method

Based on the data provided in BS EN 20140-2:1993 it is estimated that the measurement uncertainty should not exceed ±1 dB for the singl quantity ($D_{n,e,w}$) and should not exceed the values in Table A1 of BS EN 20140-2:1993 for the data in the individual third octaves ($D_{n,e,w}$)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	24.6	
63	25.6	26.4
80	31.4	
100	39.9	
125	43.2	42.2
160	45.4	
200	41.6	
250	35.0	36.5
315	35.5	
400	37.5	
500	36.4	37.5
630	38.9	
800	39.4	
1000	45.1	43.0
1250	54.4	
1600	59.8	
2000	54.7	56.7
2500	56.9	
3150	60.9	
4000	67.2	64.3
5000	69.9	

L112-079

AAC125HP - Rytons Super Acoustic Controllable LookRyt® AirCore (OPEN)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	25.0	
63	25.7	26.6
80	31.6	
100	39.7	
125	42.8	42.0
160	45.4	
200	42.2	
250	37.5	40.0
315	42.0	
400	42.2	
500	42.6	43.6
630	48.0	
800	48.3	
1000	55.2	52.2
1250	63.5	
1600	63.7	
2000	58.9	60.2
2500	59.4	
3150	62.3	
4000	68.2	65.7
5000	71.3	

L112-080

AAC125HP - Rytons Super Acoustic Controllable LookRyt® AirCore® (CLOSED)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	23.8	
63	24.7	25.6
80	32.0	
100	40.0	
125	43.0	42.1
160	44.5	
200	38.8	
250	32.9	35.0
315	35.3	
400	34.4	
500	38.5	37.3
630	42.4	
800	45.5	
1000	51.8	49.2
1250	58.6	
1600	65.1	
2000	61.0	61.5
2500	59.9	
3150	65.6	
4000	71.0	68.7
5000	73.1	

L112-081

AAC125HPCWL- Rytons Cowled Super Acoustic Controllable LookRyt® AirCore® (OPEN)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	24.8	
63	25.5	26.4
80	31.3	
100	40.0	
125	43.3	42.3
160	45.0	
200	40.6	
250	37.0	38.9
315	40.1	
400	37.8	
500	44.4	41.5
630	50.8	
800	53.9	
1000	61.7	57.7
1250	64.6	
1600	65.3	
2000	62.3	62.7
2500	61.3	
3150	65.0	
4000	69.9	68.0
5000	72.7	

L112-082

AAC125HPCWL- Rytons Cowled Super Acoustic Controllable LookRyt® AirCore® (CLOSED)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	24.7	
63	25.7	26.5
80	31.6	
100	40.3	
125	43.3	42.6
160	46.3	
200	42.7	
250	36.4	37.7
315	36.4	
400	38.4	
500	37.1	38.2
630	39.6	
800	40.0	
1000	44.8	43.4
1250	54.9	
1600	60.8	
2000	55.9	57.3
2500	56.7	
3150	62.8	
4000	69.5	66.4
5000	72.6	

L112-083

AAH125HP- Rytons High Rise Super Acoustic Controllable LookRyt® AirCore® (OPEN)

f/ Hz	*R*/ dB	R_{oct}/ dB
50	24.8	
63	25.3	26.4
80	32.2	
100	40.1	
125	43.4	42.5
160	46.0	
200	45.6	
250	38.8	41.2
315	41.8	
400	42.9	
500	42.8	44.0
630	48.1	
800	47.8	
1000	54.8	51.7
1250	64.2	
1600	66.6	
2000	62.5	63.8
2500	63.3	
3150	65.5	
4000	71.0	68.7
5000	74.0	

L112-084

AAH125HP- Rytons High Rise Super Acoustic Controllable LookRyt® AirCore® (CLOSED)