UKAS TESTING
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 051-053)
Client: Rytons Building Products Ltd
Test date: 23/07/2007 **Test number:** L107-149 **Test element:** Ventilator

Filler wall area: 9.8 m²
Description:
TAL4H&M ventilator assembly;
x1 MFAB, TAL4000 AirLiner, HM43F Internal (OPEN)

Source room volume: 130 m³
Receive room volume: 115 m³
Air temperature: 19 °C
Air relative humidity: 71 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	2.64	28.5	91.9	60.1	34.6	o
63	1.76	18.0	100.5	69.6	32.0	o
80	1.98	15.8	99.6	65.1	36.1	o
100	1.69	16.2	100.1	59.6	41.5	o
125	1.98	8.6	102.8	60.8	43.6	o
160	1.74	15.4	102.1	59.8	42.5	x
200	2.00	31.0	102.3	57.6	45.0	
250	1.80	11.1	100.3	57.9	42.3	
315	1.64	13.4	100.2	65.7	34.0	
400	1.66	23.7	99.7	65.4	33.8	
500	1.64	9.1	99.0	61.5	37.0	
630	1.58	10.8	98.5	61.9	35.9	
800	1.50	9.8	97.6	63.1	33.6	
1,000	1.50	16.3	96.4	60.6	34.9	
1,250	1.49	13.6	98.2	56.9	40.4	
1,600	1.49	5.9	99.0	59.5	38.5	
2,000	1.52	6.0	97.5	56.4	40.2	
2,500	1.51	6.7	97.8	55.8	41.1	
3,150	1.50	7.6	98.0	55.2	42.0	
4,000	1.40	8.0	98.8	52.1	45.5	
5,000	1.26	9.3	95.8	48.0	46.1	

x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ **= 38 (0;-1) dB**

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

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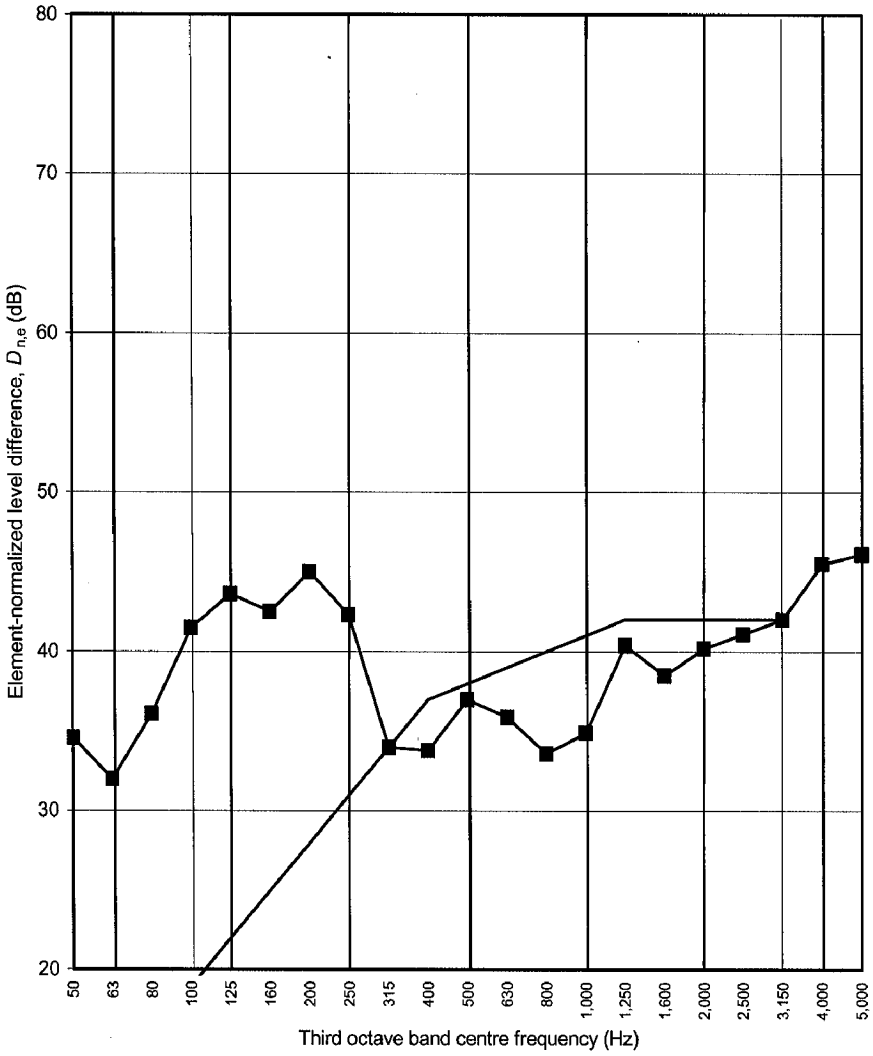
Source room volume: 130 m³
Receive room volume: 115 m³
Air temperature: 19 °C
Air relative humidity: 71 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	34.6	o
63	32.0	o
80	36.1	o
100	41.5	o
125	43.6	o
160	42.5	x
200	45.0	
250	42.3	
315	34.0	
400	33.8	
500	37.0	
630	35.9	
800	33.6	
1,000	34.9	
1,250	40.4	
1,600	38.5	
2,000	40.2	
2,500	41.1	
3,150	42.0	
4,000	45.5	
5,000	46.1	



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Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 38 (0;-1) dB

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

Evaluation based on laboratory measurement results obtained by an engineering method

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BRE horizontal transmission suite (B9 051-053)
Client: Rytons Building Products Ltd
Test date: 23/07/2007 **Test number:** L107-150 **Test element:** Ventilator

Filler wall area: 9.8 m²
Description:
TAL4H&M ventilator assembly;
x1 MFAB, TAL4000 AirLiner, HM43F Internal (CLOSED)

Source room volume: 130 m³
Receive room volume: 115 m³
Air temperature: 19 °C
Air relative humidity: 71 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	2.64	25.9	91.8	60.0	34.6	o
63	1.76	18.9	100.5	69.3	32.2	o
80	1.98	15.0	99.7	64.8	36.6	o
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3,150	1.50	8.1	98.0	51.9	45.3	
4,000	1.40	9.2	98.7	48.4	49.1	
5,000	1.26	8.6	95.7	44.2	49.9	

x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 39 (0;-1) dB

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

Evaluation based on laboratory measurement results obtained by an engineering method

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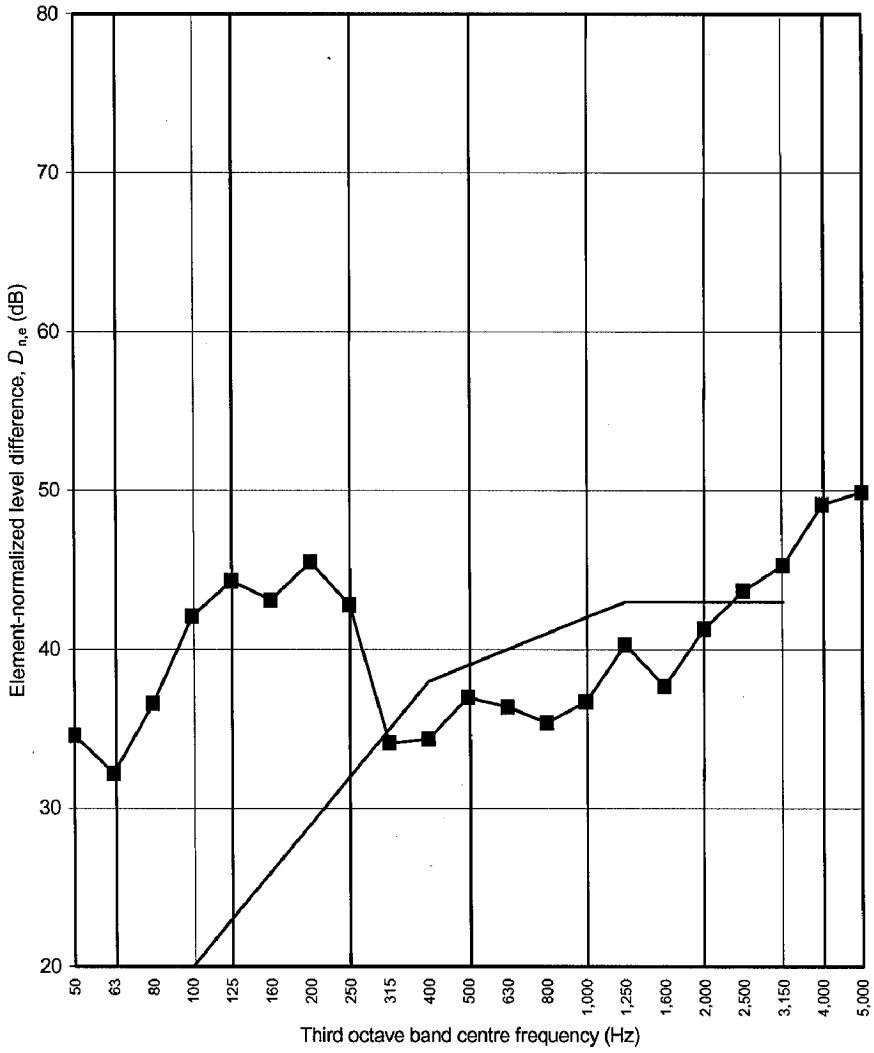
Receive room volume: 115 m³

Air temperature: 19 °C
Air relative humidity: 71 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	34.6	o
63	32.2	o
80	36.6	o
100	42.1	o
125	44.3	o
160	43.1	x
200	45.5	
250	42.8	
315	34.1	
400	34.4	
500	37.0	
630	36.4	
800	35.4	
1,000	36.7	
1,250	40.3	
1,600	37.7	
2,000	41.3	
2,500	43.7	
3,150	45.3	
4,000	49.1	
5,000	49.9	



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

bre

Laboratory airborne sound insulation testing of Rytons Building Products Ltd ventilator systems

Prepared for: Karen Jolley

Rytons Building Products Ltd

20 August 2007

Test report number 238655

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0578

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