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: 25/07/2007 **Test number:** L107-163 **Test element:** Ventilator

Filler wall area: 9.8 m²
Description:
TAL9HMCWL ventilator assembly;
x3 MFAB, TAL9x9 AirLiner1, HM123F Internal (OPEN), ABC9 Cowl

Source room volume: 130 m³ **Air temperature:** 20 °C
Receive room volume: 115 m³ **Air relative humidity:** 65 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	2.45	26.7	91.1	58.5	35.1	o
63	2.10	21.4	99.3	69.1	32.1	o
80	2.01	17.5	98.1	64.2	35.6	o
100	1.62	18.2	98.2	60.8	38.2	o
125	2.17	11.9	101.1	63.2	39.6	x
160	1.87	19.3	100.6	66.5	34.1	
200	1.91	34.8	101.1	67.9	33.4	
250	1.77	14.2	99.2	68.2	30.9	
315	1.66	13.1	99.2	68.2	30.5	
400	1.61	21.6	98.9	66.1	32.3	
500	1.58	9.9	98.2	63.5	34.0	
630	1.56	10.5	97.6	62.0	34.9	
800	1.54	9.7	96.7	53.8	42.0	
1,000	1.43	17.2	95.4	52.1	42.2	
1,250	1.47	12.4	97.3	51.0	45.3	
1,600	1.49	5.9	98.0	50.0	47.0	
2,000	1.50	6.2	96.4	44.3	51.2	
2,500	1.51	6.9	96.9	41.2	54.8	
3,150	1.45	9.0	96.9	37.2	58.7	
4,000	1.36	10.6	97.8	40.7	55.8	
5,000	1.23	8.2	94.7	37.5	55.4	

x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ **= 40 (0;-3) dB**

$C_{50\text{-}3150}$	= 0 dB	$C_{50\text{-}5000}$	= 0 dB	$C_{100\text{-}5000}$	= 0 dB
$C_{tr,50\text{-}3150}$	= -3 dB	$C_{tr,50\text{-}5000}$	= -3 dB	$C_{tr,100\text{-}5000}$	= -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 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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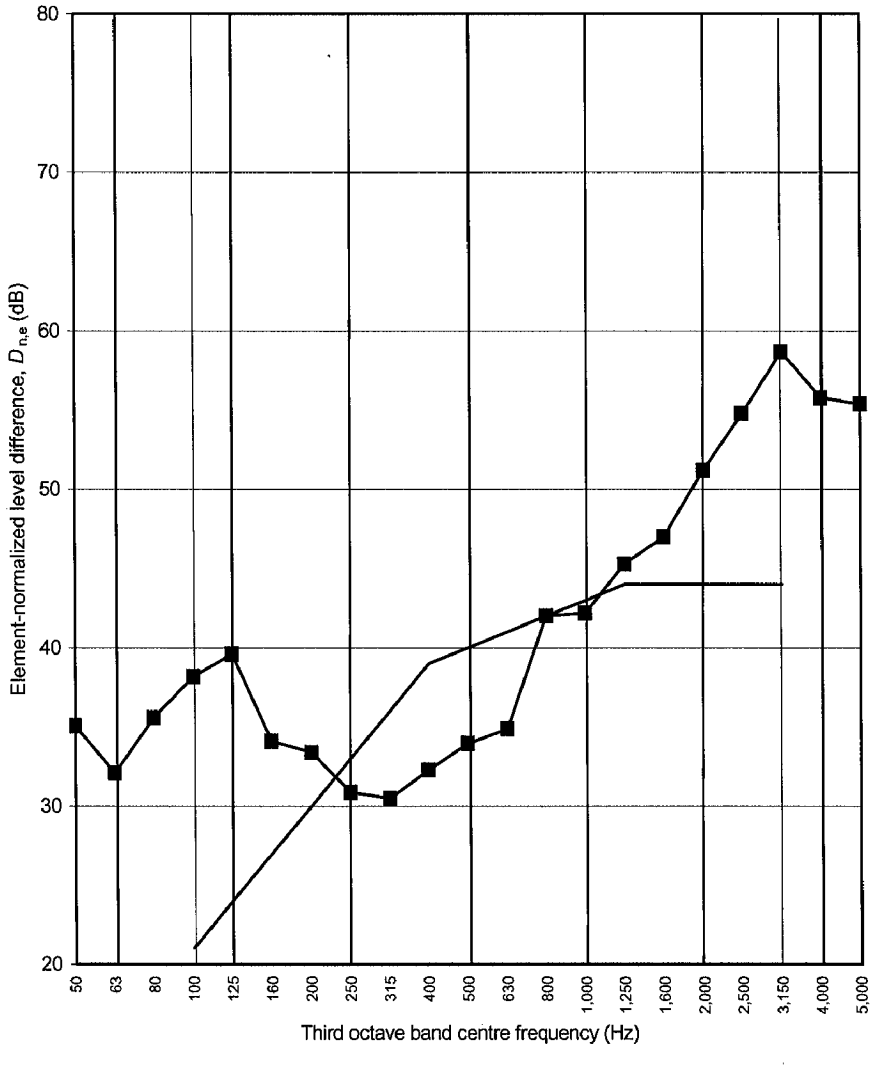
Frequency (Hz)	$D_{n,e}$ One-third octave (dB)	
50	35.1	o
63	32.1	o
80	35.6	o
100	38.2	o
125	39.6	x
160	34.1	
200	33.4	
250	30.9	
315	30.5	
400	32.3	
500	34.0	
630	34.9	
800	42.0	
1,000	42.2	
1,250	45.3	
1,600	47.0	
2,000	51.2	
2,500	54.8	
3,150	58.7	
4,000	55.8	
5,000	55.4	



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Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
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x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 41 (-1;-3) dB

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

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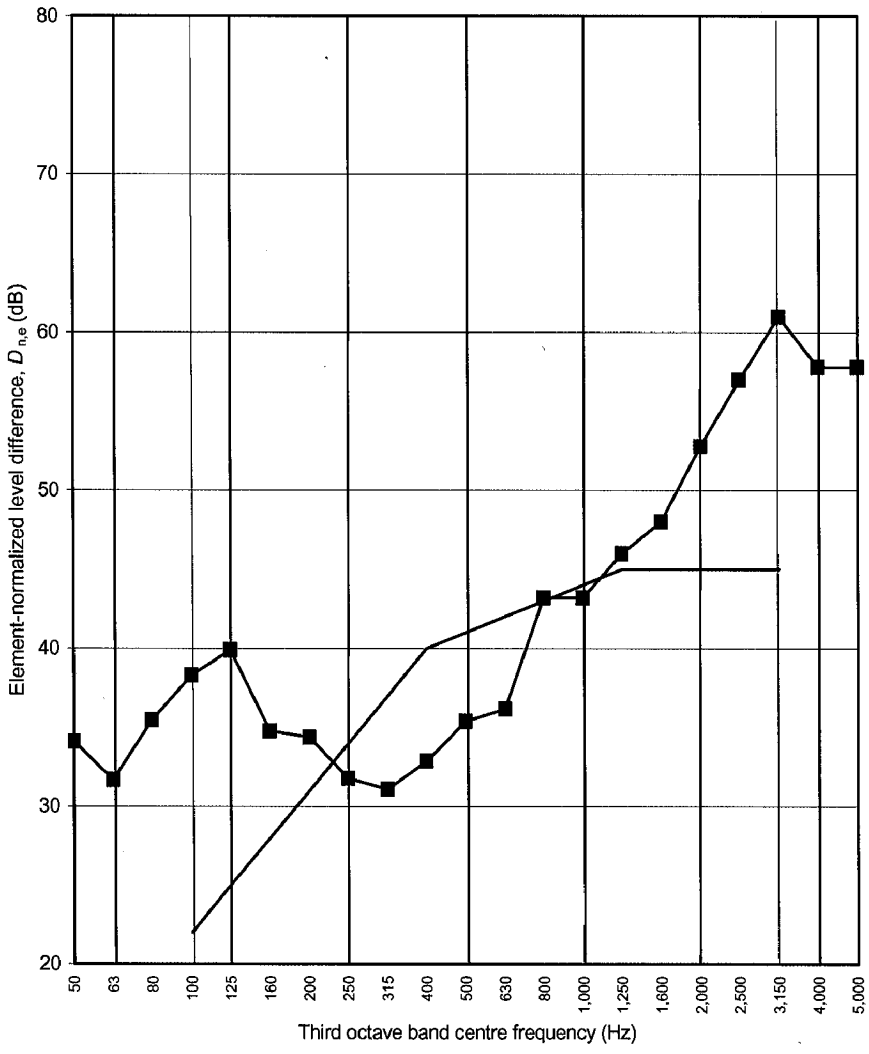
80	35.5	o
100	38.3	o
125	39.9	x
160	34.8	
200	34.4	
250	31.8	
315	31.1	
400	32.9	
500	35.4	
630	36.2	
800	43.2	
1,000	43.2	
1,250	46.0	
1,600	48.0	
2,000	52.8	
2,500	57.0	
3,150	61.0	
4,000	57.8	
5,000	57.8	



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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

0578

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