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

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:** L107-157 **Test element:** Ventilator

Filler wall area: 9.8 m²
Description:
TALHMCW ventilator assembly;
x1 MFAB96, TAL8000 AirLiner, HM85F Internal (OPEN), ABC6 Cowl

Source room volume: 130 m³ **Air temperature:** 19 °C
Receive room volume: 115 m³ **Air relative humidity:** 74 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)	
50	3.14	24.8	92.4	59.2	36.8	o
63	2.21	16.1	100.4	67.9	34.5	o
80	1.83	13.4	99.4	64.0	36.7	o
100	1.67	14.4	100.1	60.6	40.4	o
125	2.03	10.9	102.9	66.4	37.6	x
160	1.87	20.7	102.2	62.9	39.4	
200	1.87	36.1	102.2	63.9	38.3	
250	1.72	14.3	100.1	64.9	34.8	
315	1.68	12.6	100.0	66.1	33.4	
400	1.61	20.7	99.6	64.2	34.8	
500	1.66	8.9	98.9	63.8	34.6	
630	1.60	9.6	98.5	59.8	38.0	
800	1.47	9.9	97.5	58.8	37.7	
1,000	1.45	16.9	96.3	51.1	44.2	
1,250	1.51	12.6	98.2	51.3	46.1	
1,600	1.48	5.8	98.9	50.1	47.8	
2,000	1.52	6.2	97.4	46.4	50.1	
2,500	1.50	6.9	97.8	42.2	54.6	
3,150	1.45	8.5	97.9	38.1	58.7	
4,000	1.38	10.1	98.7	40.2	57.2	
5,000	1.26	8.3	95.7	36.1	58.0	

x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C;C_{tr})$ = 42 (-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

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	36.8	o
63	34.5	o
80	36.7	o
100	40.4	o
125	37.6	x
160	39.4	
200	38.3	
250	34.8	
315	33.4	
400	34.8	
500	34.6	
630	38.0	
800	37.7	
1,000	44.2	
1,250	46.1	
1,600	47.8	
2,000	50.1	
2,500	54.6	
3,150	58.7	
4,000	57.2	
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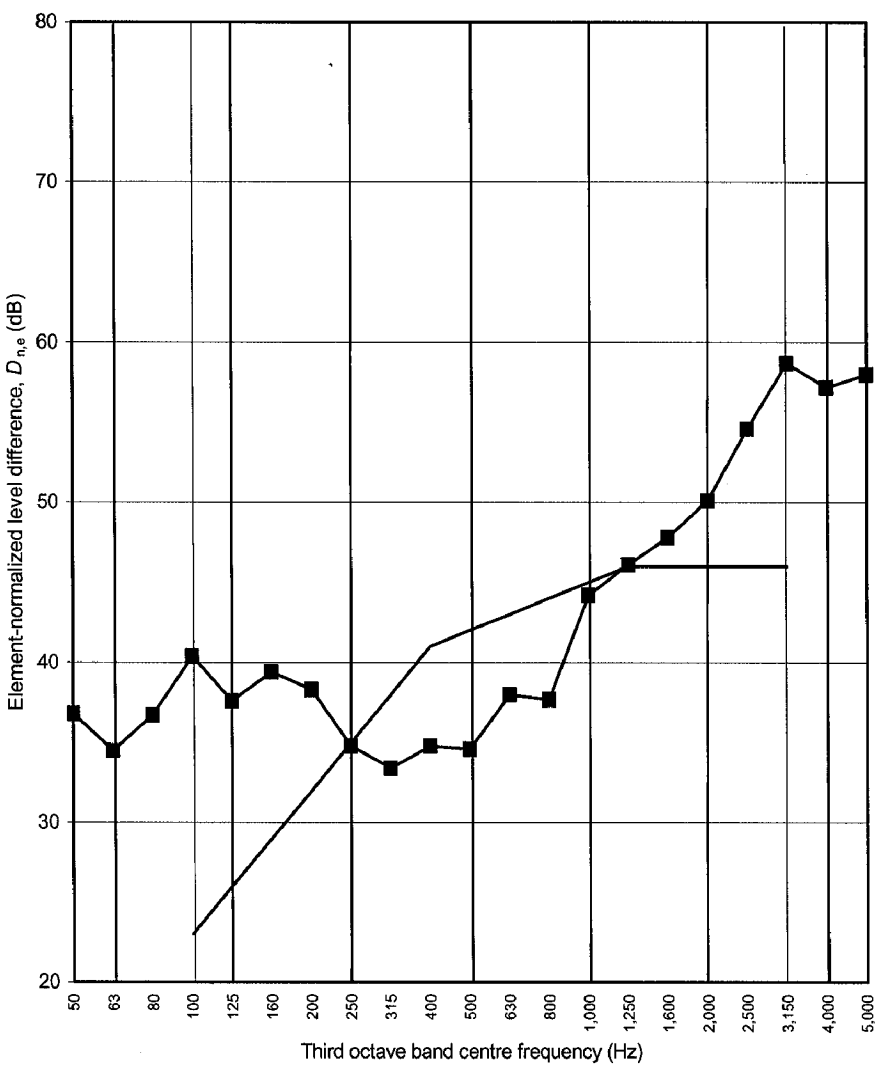

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$D_{n,e,w}(C;C_{tr})$ = 42 (-1;-3) dB

$C_{50\text{-}3150}$	= -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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Air temperature: 19 °C
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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

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$D_{n,e,w}(C;C_{tr})$ **= 42 (-1;-2) dB**

$C_{50\text{-}3150}$	= -1 dB	$C_{50\text{-}5000}$	= 0 dB	$C_{100\text{-}5000}$	= 0 dB
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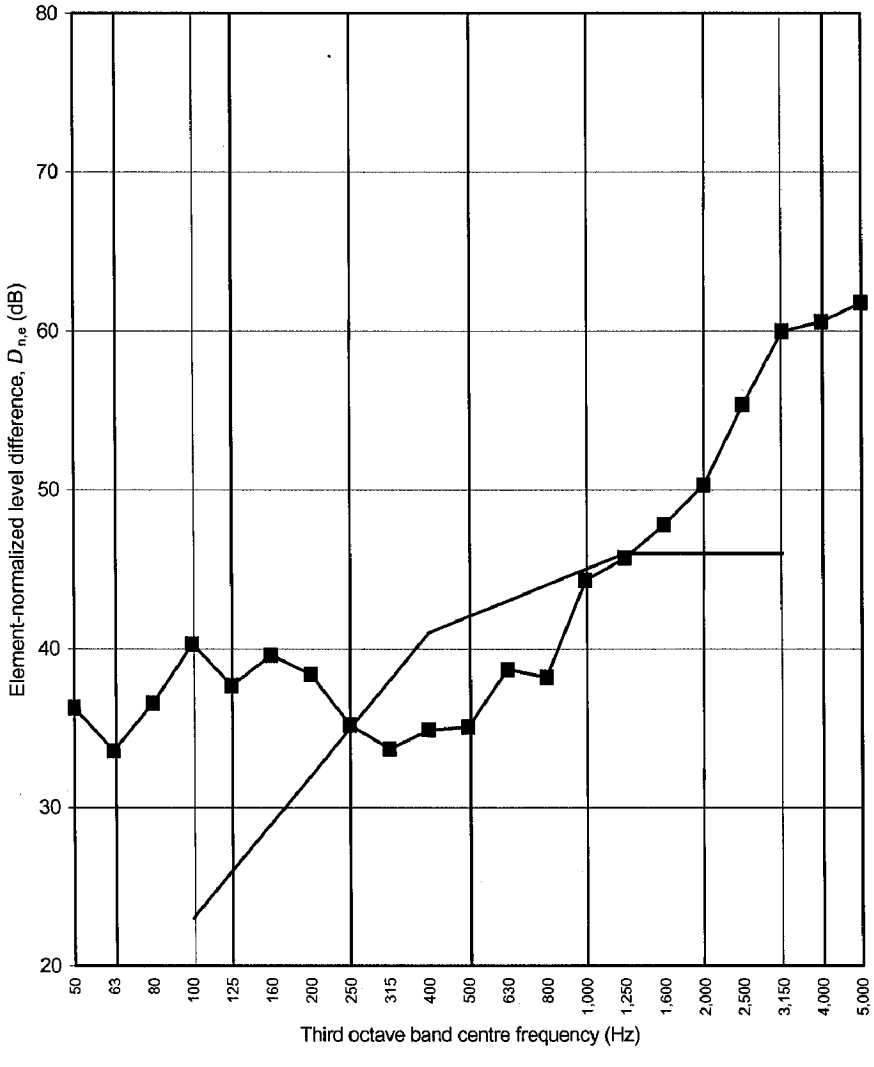
1,250	45.7	
1,600	47.8	
2,000	50.3	
2,500	55.4	
3,150	60.0	
4,000	60.6	
5,000	61.8	



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bre

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Prepared for: Karen Jolley

Rytons Building Products Ltd

20 August 2007

Test report number 238655

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