

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



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: L107-166 Test element: Ventilator

0578

Filler wall area: 9.8 m²

Description:

TAL9CWL ventilator assembly;
 x3 MFAB, TAL9x9 AirLiner1, LV265 Internal, ABC9 Cowl

Source room volume: 130 m³

Air temperature: 18 °C

Receive room volume: 115 m³

Air relative humidity: 70 %

Frequency (Hz)	Reverberation time (s)	Background level (dB)	Source level (dB)	Receive level (dB)	$D_{n,e}$ (dB)
50	2.47	26.8	91.3	58.4	35.5
63	2.17	19.3	99.4	68.8	32.6
80	1.93	17.4	98.3	64.5	35.4
100	1.54	15.5	98.4	60.7	38.2
125	2.15	11.8	101.3	62.9	40.3
160	1.83	18.2	100.9	66.6	34.3
200	1.87	33.7	101.3	68.3	33.1
250	1.69	12.8	99.2	67.8	31.0
315	1.66	11.4	99.2	67.9	30.8
400	1.61	17.2	98.9	65.9	32.4
500	1.64	9.7	98.2	63.6	34.1
630	1.52	9.4	97.9	62.0	35.0
800	1.52	10.4	96.9	54.0	42.1
1,000	1.44	16.6	95.6	52.4	42.1
1,250	1.43	10.5	97.3	51.1	45.1
1,600	1.53	6.3	98.0	50.2	47.0
2,000	1.50	6.6	96.4	44.6	50.9
2,500	1.49	7.0	96.8	41.6	54.3
3,150	1.46	7.8	96.8	37.4	58.5
4,000	1.38	8.4	97.6	41.0	55.4
5,000	1.24	8.9	94.6	37.8	55.1

o
o
o
o
x

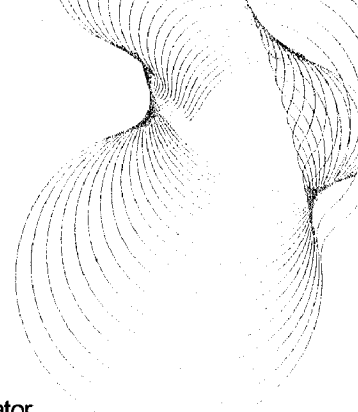
x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997						
$D_{n,e,w}(C; C_{tr}) = 40 (0; -3) \text{ dB}$	$C_{50-3150}$	= 0 dB	$C_{50-5000}$	= 1 dB	$C_{100-5000}$	= 1 dB
	$C_{tr,50-3150}$	= -3 dB	$C_{tr,50-5000}$	= -3 dB	$C_{tr,100-5000}$	= -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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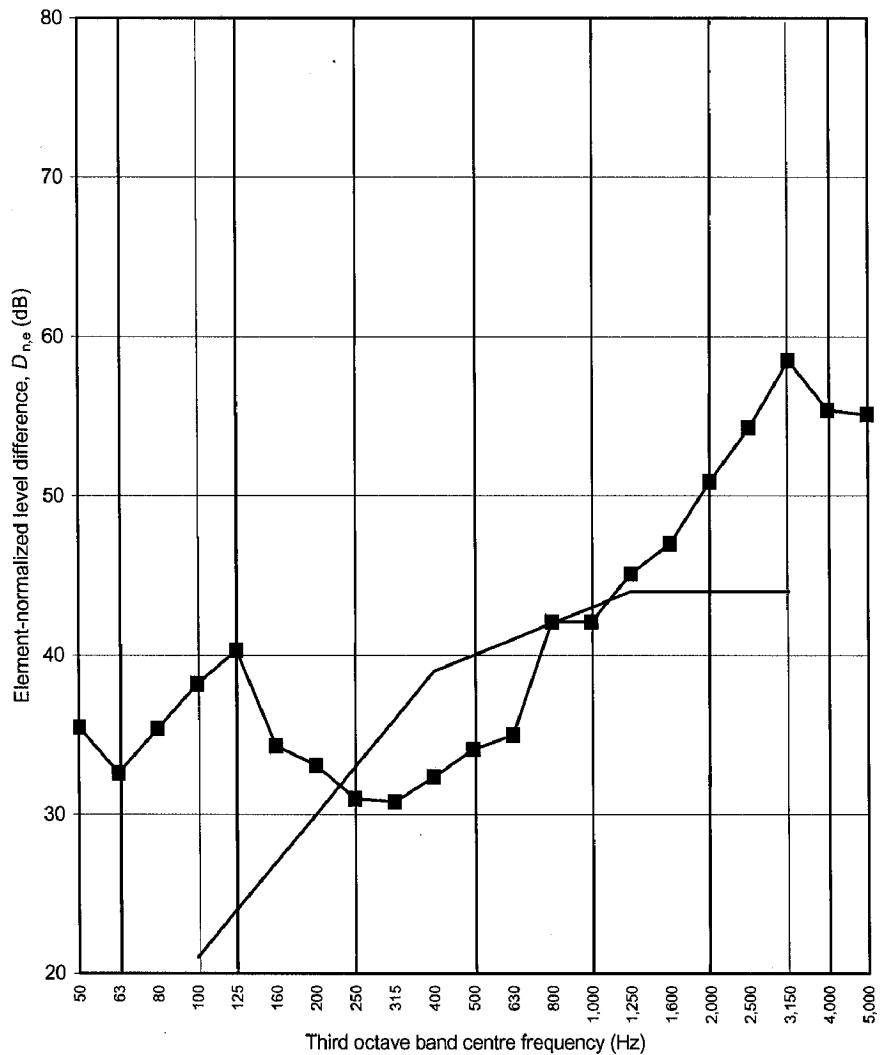
Source room volume: 130 m³

Air temperature: 18 °C

Receive room volume: 115 m³

Air relative humidity: 70 %

Frequency (Hz)	$D_{n,e}$ One-third octave (dB)
50	35.5
63	32.6
80	35.4
100	38.2
125	40.3
160	34.3
200	33.1
250	31.0
315	30.8
400	32.4
500	34.1
630	35.0
800	42.1
1,000	42.1
1,250	45.1
1,600	47.0
2,000	50.9
2,500	54.3
3,150	58.5
4,000	55.4
5,000	55.1



x Adjusted for flanking transmission

o Correction = 1.3 dB

Rating according to BS EN ISO 717-1:1997

$D_{n,e,w}(C; C_{tr}) = 40 (0; -3) \text{ dB}$ $C_{50-3150} = 0 \text{ dB}$ $C_{50-5000} = 1 \text{ dB}$ $C_{100-5000} = 1 \text{ dB}$
 $C_{tr,50-3150} = -3 \text{ dB}$ $C_{tr,50-5000} = -3 \text{ dB}$ $C_{tr,100-5000} = -3 \text{ dB}$

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 $\pm 1 \text{ dB}$ 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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bre

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Prepared for: Karen Jolley

Rytons Building Products Ltd

20 August 2007

Test report number 238655



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