

30 October 2015

Tony Sandes  
DVS  
PO Box 30095  
St Martins  
CHRISTCHURCH 8244

Dear Tony

#### **DVS SYSTEM NOISE LEVELS**

As requested I have measured the noise from a DVSG4 Classic positive pressure system and a DVSG4 Reclaim balanced pressure system.

The noise monitoring was undertaken with a Brüel & Kjær 2250 Hand-held Analyser platform with Sound Level Meter Software BZ7222, Frequency Analysis Software BZ7223 and BZ 7225 Enhanced Logging Software. The equipment has been factory calibrated and the re-calibration is next due in October 2017. The equipment was field calibrated before and after measurements using a Brüel & Kjær 4230 calibrator, which is next due for calibration in October 2016. All measurements were undertaken in accordance with the requirements of NZ6801:2008 "Acoustics Measurement of Sound" and assessed in accordance with NZS 6802:2008 "Acoustics - Environmental Noise".

#### **BACKGROUND**

Measurements were undertaken at approximately 45° to the supply grill located in the ceiling at 1.5m – 2m from the grill, the exact distance being dependent on the ceiling height.

The sound spectrum was checked to determine if the fan noise had a tonal component. As set out in clause 6.3.1 of NZS 6802:2008 Acoustics – Environmental Noise:

*Where the sound being assessed has a distinctive character which may affect its subjective acceptability (for example, it is noticeably impulsive or tonal), the representative sound level shall be adjusted to take this into account. The adjustment shall be determined in accordance with the provisions of Appendix B.*

Neither of the systems assessed had any special audible characteristic either subjectively or when assessed in accordance with the requirements of NZS6802 so there is no correction applicable due to any special audible characteristic of the sound.

The noise requirements can be specified in District Plans using either  $L_{Aeq}$  or  $L_{A10}$  values, so both units have been measured and reported in the following.

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**DVSG4 CLASSIC POSITIVE PRESSURE SYSTEM**

This system was installed in a dwelling located in Melrose Road, Mt Roskill and tested at 500rpm to 2,500rpm in 500rpm steps. The result of this testing is:

Fan Speed, rpm	Bedroom		Hallway		Living Area	
	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A10</sub>
500	23	24	24	25	24	25
1,000	23	24	24	25	24	25
1,500	27	28	27	28	26	27
2,000	29	30	29	30	28	29
2,500	33	34	35	36	28	29

**Table 1. Measured Noise, dB**

**DVSG4 RECLAIM BALANCED PRESSURE SYSTEM**

This system was installed in a dwelling located in Sadgrove Terrace, Mt Albert and tested at 500rpm to 2,500rpm in 500rpm steps. The result of this testing is:

Fan Speed, rpm	Return Living Area		Outlet Hallway		Supply Bedroom	
	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>Aeq</sub>	L <sub>A10</sub>
500	20	21	22	23	22	23
1,000	21	22	23	24	23	24
1,500	21	22	24	25	23	24
2,000	22	23	24	25	25	26
2,500	22	23	24	25	25	26

**Table 2. Measured Noise, dB**

Should you have any questions regarding the above please do not hesitate to contact me.

Yours sincerely  
Hegley Acoustic Consultants



Nevil Hegley