

An Acoustic Report

At
10 High Street
Alton
Hampshire

For
Magneglaze

Brook house
36 Cranford Drive
Holybourne
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GU34 4HJ

AET.GB.Ltd
Acoustic and Environmental Technology
Teamwork in Action



**Acoustic &
Environmental
Technology**

Product acoustic test for Magneglaze

Objective

To determine effective reduction in noise after the installing of **Magneglaze**

Location

10 High Street, Alton. Second floor window facing road.

Date & Time

First Test: Wednesday the 4th of July 2007

Second Test: Thursday the 5th of July 2007

Equipment

Bruel & Kjaer Precision Integrating sound level meter with octave filter set. Type. 2239 (aet1)

CEL Calibrator type 284/2

Tripod

Note (no windshield needed as test conducted inside)

Weather

Wednesday the 4th July, fine, clear sky, no wind

Thursday the 5th July, Wet, no rain but surface water. Overcast, no wind.

Procedure

The equipment was calibrated prior to attending site

As the objective was to measure the difference between the before installation noise levels and after installation noise levels, the equipment was set up in an identical manner for each recording. The equipment was placed in an upstairs room with a window facing the high street. The sound level meter was placed one metre from the floor of the room and 1.2 metres from the window of which had been chosen to have the product installed.

The recording set of dBA (decibel average A weighted) was taken over a period of 15 minutes commencing on both occasions at 17.15 hours. Mid octaves were then taken with a range of 32Hz to 8Khz to check for any frequency anomaly's.

Results

Test 1 (04/07/2007)

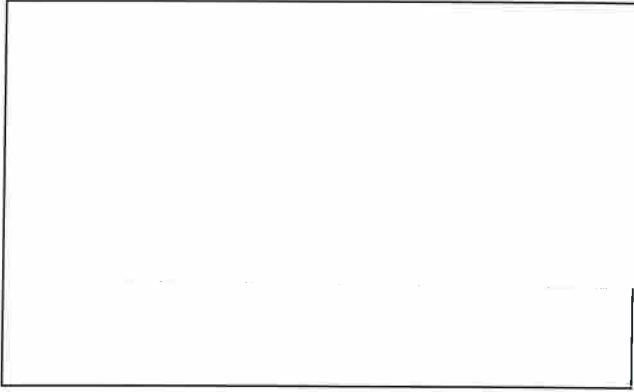
	Leq (dB)	SEL (dB)	LEPd (dB)	L50 (dB)	L10 (dB)	MaxL (dB)
dBA	42.7	72.2	42.4	35.0	39.5	77.6

Test 2 (05/07/2007)

dBA	32.3	61.8	32.0	30.0	34.5	56.6
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The tests carried out clearly show a Drop of 10.4 dBA showing a significant noise reduction to the pre installation test. The reduction would have been higher but for the increased external noise levels that existed during the second tests due to the increased road noise caused by the wet roads.

Reduction in dB	10.4	10.4	10.4	5.0	5.0	21.0
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Dear Richard

Here, as requested in your letter dated 13 August 2007 are some definitions and details to help you process the information provided in the report.

Leq: Leq stands for equivalent continuous noise level, In most regards this is the most important measurement as it is considered the average noise level. The measurement is taken over a period of time, in this case fifteen minutes, the mean noise level is then taken from this period and thus produces the Leq dBA result

The reason so much weight is held in the Leq format is that it eliminates the “chance” noises, such as a car revving excessively. Therefore only prolong and constant noise is recorded.

Leq is Also referred to as LAeq

dBA = decibel average ... “A” weighted (an industry standard)

Noise = Unwanted sound

decibels utilise the logarithmic scaling system, thus a doubling in noise is only recorded at 3dB (10 times the logarithmic of 2 = 3)

Wet road surface: It is impossible to tell the actual extent of noise produced by the wet road unless tested as the variables are so considerable. A 4db increase would be of a sensible figure, but without further testing it is hard to say.. However, I would state clearly that the tyre noise from the cars contact with the wet surface did increase background noise levels and decrease the difference between the two test.

Due to the way that the brain and hearing system work, noise levels in terms of hearing are all different. Your product, Magneglaze had a 10.4 Db reduction over the leq, whilst not outstandingly effective the noise reduction is significant because it takes edge off the noise. The noise reduction would make the listener be able to ignore the sound more easily. This is because the difference in ambient background noise and the level of intrusive noise is reduced.

Human perception says that a ten dB reduction halves the noise level. We know in practice of course that it is much more than that being a logarithmic scale.

Other important figures:

L10: The sound pressure level that is exceeded for 10% of the time for which the sound is measured.

L90 The level of noise exceeded for 90% of the time.

Best regards,



David Whitmarsh