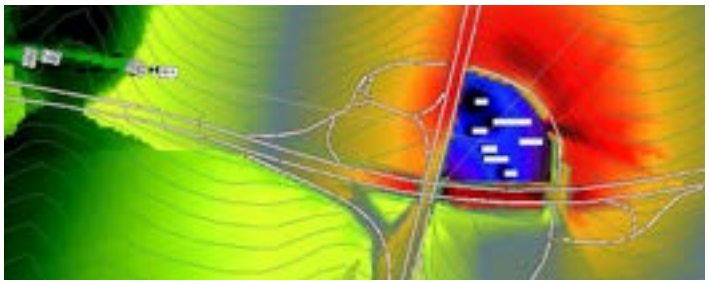
dBA Guide

dBA

A noise level specified as a dBA level is a weighted logarithmic average of a set of frequency specific sound levels. The weighting system is designed to adjust the sound levels to an approximation of the human ear response. The addition of the individual weighted values is designed to combine the sound spectrum into one single figure for comparitive purposes.



dBA Weightings

Centre Band Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
dbA Weighting	-26	-16	-9	-3	0	1	1	-1

Weightings

In order to apply an "A" weighting to a sound spectrum add or subtract the values in the table below. There is an example shown for a typical measured sound spectrum.

Weighting Example	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Given Spectrum	95	87	82	78	75	73	71	69
dBA Weighting	-26	-16	-9	-3	0	1	1	-1
A Weighted Spectrum	69	71	73	75	75	74	72	68

Logarithmic Addition

In order to obtain a single dBA figure, the "A" weighted spectrum will need to be added together logarithmically. A simple method (using the table below) adds together adjacent values several times, (each time applying the correct logarithmic adjustment) until one overall value is obtained. For greater clarity an example is provided below.

Difference in Values	Adjustment to Larger Value
0 - 1	3
2 - 3	2
4 - 9	1
10 +	Use Larger Value

Spectrum Addition Example

Frequency	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
Given Spectrum	95	87	82	78	75	73	71	69
dBA Weighting	-26	-16	-9	-3	0	1	1	-1
A Weighted Spectrum	69	71	73	75	75	74	72	68
Add Adjacent Value Logarithmically	73		77		78		73	
	78				79			
	82 dBA							

T: 01206 852389 **E:** info@acoustica.co **W: acoustica.co**
2 Condor Way, Whitehall Industrial Estate, Colchester, Essex CO2 8JN