

# ZONING

## 105 Attachment 1

### Appendix A

#### Common Equivalencies of Decibel Rating for Noise

In interpreting the decibel rating in the noise performance standards of this chapter, it is helpful to understand that when one noise of say 70 dB(A) is added to a second noise of 70 dB(A) (as from two vacuum cleaners), the new total noise level is 73 dB(A), not 140 dB(A). In other words, 73 dB(A) represents twice as much noise intensity (or sound pressure) as 70 dB(A). This is because the decibel scale is logarithmic, and not an arithmetic or linear scale. However, human perception of loudness is such that a ten-dB(A) increase is required for a noise to sound twice as loud. Therefore, perceived noise levels double with every 10 dB(A) increase. (Compared with 40 dB(A), 50 dB(A) sounds twice as loud, 60 dB(A) sounds four times as loud, 70 dB(A) sounds eight times as loud, 80 dB(A) sounds 16 times as loud, etc.)

Distance diminishes the effective loudness perceived by the ear. At the sidewalk, moderate city traffic rates about 70 dB(A), but this drops to 50 dB(A) (1/4 as loud) at 100 feet away.

The following table provides a layman's guide to understanding how various decibel levels relate to ordinary noises most people are familiar with:

<b>Decibels</b>	<b>Common Equivalency</b>
10	Rustle of leaves in gentle breeze (just audible)
20	Average whisper
30	Quiet suburban street in the evening, no traffic
35	Average indoor nighttime noises (11:00 p.m. to 6:00 a.m.) in suburban area (with windows closed)
40	Average day/night outdoor noise level in rural residential area
47	Average outdoor daytime background noise level on a typical suburban street (not including nearby traffic or aircraft)
50	Large transformers at 100 feet
60	Air conditioner at 100 feet or average city traffic on a shopping street
66	Air conditioner (window unit) at 6 to 10 feet

## SHAPLEIGH CODE

<b>Decibels</b>	<b>Common Equivalency</b>
70	Vacuum cleaner or traffic noise on a very busy city street
73	Outdoor noise of a sports car or large truck
76	Expressway traffic at 50 feet from pavement
80	Garbage disposal or "high urban ambient sound" (heavy city traffic)
82	Very heavy city traffic with elevated railway
84	Diesel truck 40 miles per hour at 50 feet or diesel train 45 miles per hour at 100 feet
87	Power lawn mower or food blender (at source)
90	Motorcycle at 25 feet or pneumatic drill at 10 feet
97	Boeing 747 at 6,000 feet, before landing
110	Rock and roll band
115	Gasoline-powered chainsaw (at source) when cutting

NOTE: A good standard of noise within dwellings with windows closed is 45 dB(A) in daytime and 35 dB(A) at night. Closing windows usually reduces outside noise by about 10 dB(A). The highest noise level that permits relaxed conversation indoors is 45 dB(A). People tend to raise their voices in order to be heard when the background noise exceeds 45 to 50 dB(A).