

APPENDIX AA :GLOSSARY OF TERMS

In order to ensure that there is a clear interpretation of this report the following meanings should be applied to the acoustic terminology:

- **Ambient sound level** or **ambient noise** means the totally encompassing sound in a given situation at a given time, and usually composed of sound from many sources, both near and far. Note that ambient noise includes the noise from the noise source under investigation. The use of the word *ambient* should however always be clearly defined (compare with *residual noise*).
- **A-weighted sound pressure, in Pascals:** The root-mean-square sound pressure determined by use of frequency-weighting network A.
- **A-weighted sound pressure level (SPL) (noise level) (L_{pA}), in decibels:** The sound pressure level of A-weighted sound pressure is given by the equation:

$$L_{pA} = 10 \log (p_A/p_0)^2 \quad \text{where:}$$

p_A is the A-weighted sound pressure, in Pascals; and

p_0 is the reference sound pressure ($p_0 = 20$ micro Pascals (μPa))

Note: The internationally accepted symbol for sound pressure level, dB(A), is used.

- **Controlled areas** as specified by the National Noise Control Regulations are areas where certain noise criteria are exceeded and actions to mitigate the noise are required to be taken. Controlled areas as related to roads, airports and factory areas are defined. These Regulations presently exclude the creation of *controlled areas* in relation to railway noise.
- **dB(A)** means the value of the sound pressure level in decibels, determined using a frequency weighting network A. (The “A”-weighted noise levels/ranges of noise levels that can be expected in some typical environments are given in Table A1 at the end of this appendix).
- **Disturbing noise** means a noise level that exceeds the outdoor equivalent continuous rating level for the time period and neighbourhood as given in Table 2 of SANS 10103:2003. For convenience, the latter table is reproduced in this appendix as Table A1.
- **Equivalent continuous A-weighted sound pressure level ($L_{Aeq,T}$)** means the value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, has the same mean-square sound pressure as a sound under consideration whose level varies with time.
- **Equivalent continuous rating level ($L_{Req,T}$)** means the equivalent continuous A-weighted sound pressure level during a specified time interval, plus specified adjustments for tonal character and impulsiveness of the sound and the time of day.

- **Equivalent continuous day/night rating level ($L_{R,dn}$)** means the equivalent continuous A-weighted sound pressure level during a reference time interval of 24-hours, plus specified adjustments for tonal character and impulsiveness of the sound and the time of day. (An adjustment of 10dB is added to the night-time rating level).
- **Integrating sound level meter** means a device that integrates a function of the root mean square value of sound pressure over a period of time and indicates the result in dBA.
- **Noise** means any acoustic phenomenon producing any aural sensation perceived as disagreeable or disturbing by an individual or group. Noise may therefore be defined as any *unwanted* sound or sound that is *loud, unpleasant or unexpected*.
- **Noise climate** is a term used to describe the general character of the environment with regard to sound. As well as the ambient noise level (quantitative aspect), it includes the qualitative aspect and the character of the fluctuating noise component.
- **Noise Control Regulations** means the National Noise Control Regulations as promulgated by the Department of Environmental Affairs and Tourism. Note that the Limpopo Province has not yet promulgated their regulations.
- **Noise impact criteria** means the standards applied for assessing noise impact.
- **Noise level** means the reading on an integrating impulse sound level meter taken at a measuring point in the presence of any alleged disturbing noise at the end of a total period of at least 10 minutes after such meter was put into operation, and, if the alleged disturbing noise has a discernible pitch, for example, a whistle, buzz, drone or music, to which 5dBA has been added. (The “A”-weighted noise levels/ranges of noise levels that can be expected in some typical environments are given in Table A2 at the end of this appendix).
- **Noise nuisance** means any sound, which disturbs or impairs or may disturb or impair the convenience or peace of any reasonable person considering the location and time of day. This applies to a disturbance, which is not quantitatively measurable such as barking dogs, etc. (compared with disturbing noise which is measurable).
- **Noise sensitive area** means a land use that generally will be significantly impacted by noise. Such land uses typically include residential, educational, hospitals, churches and parklands.
- **Residual sound level** means the ambient noise that remains at a position in a given situation when one or more specific noises are suppressed (compare with *ambient noise*).
- **Sound exposure level or SEL** means the level of sound accumulated over a given time interval or event. Technically the sound exposure level is the level of the time-integrated mean square A-weighted sound for stated time or event, with a reference time of one second.
- **Sound (pressure) level** means the reading on a sound level meter taken at a measuring point.

- **SANS 10103** means the latest edition of the South African National Standard SANS 10103 titled *The Measurement and Rating of Environmental Noise with Respect to Land Use, Health, Annoyance and to Speech Communication*.
- **SABS 0210** means the latest edition of the South African National Standard SABS 0210 titled *Calculating and Predicting Road Traffic Noise*.
- **SANS 10328** means the latest edition of the South African National Standard SANS 10328 titled *Methods for Environmental Noise Impact Assessments*.

- Refer also to the various South African National Standards referenced above and the Noise Control Regulations for additional and, in some instances, more detailed definitions.

TABLE AA1: TYPICAL NOISE RATING LEVELS FOR AMBIENT NOISE IN DISTRICTS (NOISE ZONES)

Type of District	Equivalent Continuous Rating Level for Noise ($L_{Req,T}$) (dBA)					
	Outdoors			Indoors with open windows		
	Day-night ($L_{R,dn}$)	Daytime ($L_{Req,d}$)	Night-time ($L_{Req,n}$)	Day-night ($L_{R,dn}$)	Daytime ($L_{Req,d}$)	Night-time ($L_{Req,n}$)
RESIDENTIAL DISTRICTS						
a) Rural districts	45	45	35	35	35	25
b) Suburban districts (little road traffic)	50	50	40	40	40	30
c) Urban districts	55	55	45	45	45	35
NON RESIDENTIAL DISTRICTS						
d) Urban districts (some workshops, business premises and main roads)	60	60	50	50	50	40
e) Central business districts	65	65	55	55	55	45
f) Industrial districts	70	70	60	60	60	50

TABLE AA2: NOISE LEVELS/RANGES OF NOISE LEVELS THAT MAY BE EXPECTED IN SOME TYPICAL ENVIRONMENTS

Noise Level dB(A)	Typical Environment	Subjective Description
140	30m from jet aircraft during take-off	
130	Pneumatic chipping and riveting (operator's position)	Unbearable
>120	Hearing damage possible even for short exposure	
120	Large diesel power generator	
105-120	Low level military aircraft flight	
110-120	100 m from jet aircraft during take-off	
110	Metal workshop (grinding work), circular saw	
105-110	High speed train at 300 km/h (peak pass-by level at 7,5m)	
90-100	Printing press room	Very noisy
95-100	Passenger train at 200km/h (peak pass-by level at 7,5m).	Very noisy
95-100	Freight train at 100 km/h (peak pass-by level at 7,5 m)	Very noisy
90-100	Discotheque (indoors)	
75-100	7,5 m from passing motorcycle (50 km/h)	
75-80	10 m from edge of busy freeway (traffic travelling at 120 km/h)	
80-95	7,5 m from passing truck (50 km/h)	
80	Kerbside of busy street	
70	Blaring radio	Noisy
70	3 m from vacuum cleaner	Noisy
60-80	7,5 m from passing passenger car (50 km/h)	
65	Normal conversation	
65	Large busy office	
60	Supermarket/small office	
50	Average suburban home (day conditions)	Quiet
40	Library	
40-45	Average suburban home (night-time)	
30-35	Average rural home (night-time)	
25-30	Slight rustling of leaves	
20	Background in professional recording studio	Very quite
20	Forest (no wind)	
0-20	Experienced as complete quietness	
0	Threshold of hearing at 1000 Hz	