

## What is the allowable noise level and the distance of dB measurement for generator sets?

Different size, capacity, and design of generator set produce different noise levels. ISO 8528 part 10 (Measurement of airborne noise of generator sets) does not even establish the allowable noise level for generators per se. Noise level of generator set perceived by human ear is subjective and is regulated by law rather than manufacturer's standards. However, common generator noise level measurement is taken at 7 meters using A-weighted scale, dBA in free field. Free field means there should be no surfaces that reflects the sounds produced by the machine such as walls, buildings, trees, etc., as they could create errors in noise level measurement.

### Philippine regulation on noise:

There are two types of noise standards in the Philippines, namely: **workplace** and **environmental** noise standards. Workplace noise is governed by DOLE while environmental noise is governed by the DENR.

**Workplace noise standards** protect the worker who may be exposed to unwanted sound within their workplace. While working around noisy workplace, like in generator facility, workers exposure to 90 dBA noise level is limited to 8 hours. We can refer further to workplace noise standards table set by DOLE.

**Permissible Noise Exposure (Source: DOLE 1990)**

Duration per day, hours	Sound levels, dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼	115

On the other hand, **environmental noise standard** is a bit elaborated than workplace noise standard. Environmental noise (or ambient noise) standard aims to protect the public or communities that reside adjacent or outside an establishment or facility emitting the noise. Here the measurement of noise may also be called perimeter noise. The Philippine standard for ambient noise is categorized into 4 classes of area and the maximum allowable noise in each class is differentiated into time schedules.

Shown below table of allowable environmental noise by National Pollution Control Commission (NPCC) during the time of Pres. Ferdinand Marcos. This table is still enforced by the DENR until today. The table is not solely intended for generator noise, but for all sources of noise.

**Environmental Quality Standards for Noise in General Areas (Source: NPCC 1980)**

Category	Maximum Allowable Noise (dBA) by time periods		
	Daytime (9:00 A.M. to 6:00 P.M).	Morning/Evening (5:00 A.M. to 9:00 AM/ 6:00 P.M. to 10:00 P.M.	Nighttime (10:00 P.M. to 5:00 A.M).
AA	50	45	40
A	55	50	45
B	65	60	55
C	70	65	60
D	75	70	65
<ul style="list-style-type: none"> <li>• Class AA- a section of contiguous area which requires quietness, such as areas within 100 meters from school site, nursery schools, hospitals and special house for the aged</li> <li>• Class A - a section of contiguous area which is primarily used for residential area</li> <li>• Class B - a section of contiguous area which is primarily a commercial area</li> <li>• Class C - a section of contiguous area reserved as light industrial area</li> <li>• Class D-a section which is primarily reserved as heavy industrial area</li> </ul>			

In Makati City, under Municipal Ordinance No. 93-181, the impact on environmental noise in operating generator sets is pegged at the following levels:

**Environmental Noise in Operating Generator Sets in Makati City  
(Source: Municipal Ordinance No. 93-181; June 8, 1993)**

Classification of Area	Max. noise level (dBA)*
AA	74
A	76
B	85
C	90
D	95
<i>* Measured from a distance of not less than 3 meters from any point of the area where such generator set is located.</i>	

Should noise emitting establishments fail to comply these regulatory standards, carefully engineered noise abatement measures must be applied.