

إرشاد فني TECHNICAL GUIDELINE

رقم (9) Number

متطلبات خفض الضجيج الناتج من أعمال البناء أو الهدم

**Requirements For The Reduction Of
Construction and Demolition Noise**

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1. Background:

Any type of construction or demolition activities even if only for relatively short periods may or significantly generate high levels of noise that can cause disturbances to its surroundings in any adjacent sensitive receptors or premises such as residential, hospital, schools, mosque, and similar buildings.

Dubai Local Order No. 61/1991 requires that any noise should not interfere with the peace, comfort and convenience of any person. This guideline sets out the information required for the control and reduction of noise from any type of construction and demolition activities as mentioned in this document.

Also, this guideline have been produced to help builders, site managers and site workers to operate their sites with consideration to any nearby sensitive receptors or premises. This document does not contain a comprehensive list of legal and technical requirements but guidance notes setting out the general policies, regulations, advices, procedures and other requirements.

2. Guidelines:

A. Noise Compliance Limit

1. Noise from any type of construction or demolition site must comply with the requirements of Chapter VII of Local Order No. 61/91 and Article 42, of Administrative Order No. 211/91. The noise level when measured outdoor should not exceed 55 dbA between 7:00 A.M - 8:00 P.M and 45 dbA between 8:00 P.M - 7:00 A.M and the UAE Federal Environment Agency noise limit stated in Table 1.

Table 1: Noise Level Limit-UAE Federal Environment Agency

Receptor Areas	Allowable Limits For Noise, dbA	
	Daytime (7 AM-8 PM)	Nighttime (8 PM - 7 AM)
Residential Areas With Light Traffic	40 - 50	30 - 40
Residential Areas in Downtown	45 - 55	35 - 45
Residential Areas With Some Workshops & Commercial or near Highways	50 - 60	40 - 50
Commercial Areas & Downtown	55 - 65	45 - 55
Industrial Areas (Heavy Industry)	60 - 70	50 - 60

2. The Environment Department imposes certain restrictions and conditions on working hours, methods of work and type of equipment used to ensure noise levels are kept at an acceptable level. The permitted hours of work are;

Saturday to Thursday	7:00am to 7:00pm
Friday and Public Holidays	No works allowed

3. Any noisy operations outside these hours cannot be undertaken without prior approval and permission is only granted in exceptional circumstances such as emergency works as determined by the Building Department.

4. In cases where work is extended beyond the normal working hours specified in Clause 2 and the noise of this activity will significantly impact any sensitive receptor, then the affected premises should be notified of the intended work, its duration and times of occurrence.
5. The incremental allowable noise level that maybe implemented when the background noise level is higher then the allowable noise limit measured due to effect of traffic and other activites upon dicretion of EPSS shall not exceed the following sliding scale incremental noise level;

Measured Average Noise Level, dbA	Allowable Increase, dBA
50 to 60	5
61 to 65	4
66 to 70	3
71 to 75	2
76 to 80	1
81 and higher	0

B. Noise Control Requirements

6. At all times the best practicable means must be implemented to reduce noise. Site engineers must consider noise reduction in the site layout, planning and execution phases.
7. All equipment should be maintained in good mechanical condition and fitted with appropriate silencers, mufflers or acoustic covers.
8. Stationary noise sources such as air compressors, diesel engine for dewatering pump or power generation should be sited as far away as possible from noise sensitive receptors. Acoustic barriers or walls should be constructed when noise cannot be sufficiently reduced by careful siting of noise sources.
9. As noise from construction and demolition activities is predominantly impulsive in nature, it is prohibited to to jack hammering and impact pile driving during nighttime hours. Impact or impulse tools used from 7p.m. to 10p.m. would be subjected to a noise level limit of 5 dBA above the existing noise level.
10. Access roads to the site should be positioned such that the movement of vehicles to and from the site are adequately controlled to minimise noise and disturbance to nearby residents.
11. Heavy vehicle movements to and from the site must only be made during the scheduled normal working hours unless approval has been granted by the Environmental Planning and Studies Section of the Environment Department.

12. Where possible, any heavy equipment with an internal combustion engine should not be left standing with its engine operating in a street adjacent to a residential area.
13. Work that creates the most noise should be scheduled to minimize the impact on residential premises. Construction materials shall be properly handled so that the minimum noise is generated. Materials should be handled gently and if possible cushions should be provided to reduce impact noise.

C. Noise Measurements

14. The background noise level should be measured using an integrating-averaging sound level meter with specifications complying with Type 1, Type 2 or better using the time weighting F (Fast Response). The sound level meter must be calibrated at least 2 years by a calibration laboratory and field performance shall be checked periodically with a portable sound level calibrator before and after measurements are made.
15. The measurement should be taken outdoor or inside affected property. The sound level meter should be at least 1.2 to 1.5 meters above the ground or floor or building and should be no less than 3.5 meters from any reflective surface such as walls or buildings. When it is not possible to locate at 3.5 meters, the preferred position shall be 1-meter from any reflective wall.
16. Where measurement is made inside any habitable room of the noise-affected residential premises and a window or door is the major transmission path for the noise, it shall be fully open and closed during measurement to obtain an estimate of noise level difference.
17. The sound level meter must be set on A-weighting and equivalent continuous sound level (L_{eq}) integrating function. The level should be determined over a sufficiently long time to be representative of the noise and will be measured for not less than five minutes. The level must not include extraneous noise that could affect the level of the noise being assessed — extraneous noise must be excluded using the pause function of the meter.
18. When the local noise is intermittent, a series of short term L_{eq} measurements should be made, while the local source is absent or has subsided to typically low or minimum values. An average of these short term readings will give an estimate of music noise level. A further option would be to measure the A-weighted sound level set at S (slow response) when the music is loudest and not influenced by local noise. If the local source is continuous, make a measurement of the L_{eq} of the local source when the music is not occurring and make a correction to measured L_{eq} when the music is occurring to obtain an estimate of the music noise level

Definition of terms:

Background Noise level Noise level - The prevailing sound level at a location, measured in terms of the L_{eq} , on an equivalent day and at an equivalent time when no music/speech or sound checks are taking place.

dbA - The decibel (dB) is a [logarithmic unit](#) of measurement that expresses the magnitude of a physical quantity (usually [power](#) or [intensity](#)) relative to a specified or implied *reference level*, the A-weighted sound pressure level whereby various frequency components of sound are weighted (equalized) to reflect the way the human ear response to different frequencies.

L_{eq} - The equivalent continuous noise level which at a given location and over a given period of time contains the same A-weighted sound energy as the actual fluctuating noise at the same location over the same period.

Equivalent Continuous Sound Level when sound pressure level which, if maintained constant over a given time, delivers the same amount of acoustic energy at some point as the time-varying sound pressure level would deliver at the same point and over the same period of time

Noise Monitoring Position – the location of the noise measurement outside the venue from which the level of sound is monitored and controlled which is at the boundary or façade of affected premises.

Noise sensitive premises – includes premises used for residential purposes, hospitals or similar institutions, education establishments, places of worship or any premises used for any other purposes likely to be affected by the concert noise

Type of work subject to control includes but not limited to;

- a) the erection, construction, alteration, repair or maintenance and demolition of buildings, structures or roads.
- b) breaking up, opening or boring under any road or adjacent land in connection with the construction, inspection, maintenance, or removal of works.
- c) demolition or dredging work; and

**Further information is available at
Environmental Planning and Studies Section**

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Or

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www.dm.gov.ae

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