

Walker Aggregates Inc.

Minimizing Operations Noise

Provincial noise area classes

The Ministry of the Environment has defined three classes of acoustical environments:

Class 1:	Urban; background sound level is dominated by “urban hum”
Class 2:	Characteristics of Classes 1 and 3
Class 3:	Rural; little or no road traffic; a rural recreational area such as a cottage or a resort area; a wilderness area

MOE Noise Limits for Stationary Sources*

Time of Day	One Hour Leq (dBA)	
	Class 2 Area	Class 3 Area
07:00 to 19:00	50	45
19:00 to 07:00	45	40

dBA = A-weighted decibels

MOE Indoor Sound Level Criteria For New Residential Development

Type of Space	Leq (Time Period) dBA	
	Road	Rail
Living/dining areas of residences, hospitals, schools, nursing/retirement homes, day-care centres (Time period: 16 hr, 07:00 – 23:00)	45	40
Sleeping quarters (Time period: 8 hr, 23:00 – 07:00)	40	35

dBA = A-weighted decibels

Human hearing and A-weighted decibels (dBA)

- People hear high frequency sound better than low frequency.
- If a person hears two sounds of the same sound pressure but different frequencies, one sound may seem louder than the other.
- Noise measurement readings are adjusted to correspond to this peculiarity of human hearing. A-weighted decibels are an internationally standardized frequency weighting applied to sound levels to approximate the sensitivity of human hearing as a function of frequency.



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What Walker does to minimize noise from our operations:

- ✓ Replaced back-up beepers with broad band back-up alarms that warn the immediate area without causing off-site nuisance noise
- ✓ Lines trucks and other equipment with thick sound-dampening rubber
- ✓ Locates the crushing plant on the quarry floor
- ✓ Organizes on-site traffic flow to minimize backing up of highway trucks
- ✓ Encloses crushers and transfer points on the plant
- ✓ Lines transfer points with rubber to deaden noise of falling stone
- ✓ Employs a preventive maintenance program on all equipment
- ✓ Only loads vehicles with a Ministry approved exhaust system (no straight pipes)
- ✓ Designs blasts to minimize noise impacts



What levels of sound can humans hear?

The threshold of hearing is assigned a level of 0 decibels. The ability of the human ear to perceive sound level changes is summarized below:

Change (dBA)	Average Ability to Perceive Changes in Noise Levels
0-2	Not noticeable to most people
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of loudness of sound
20	A dramatic change

Typical Sound Levels in Decibels

Instant perforation of eardrum	160	
	140	Threshold of pain
Jet take off (60 m)	130	
	120	Rock concert, Pop group disco dance-floor
INDY Race car (30 m)	110	
Railroad locomotive at 100 km/h	100	Arena during playoff hockey (Max.Levels)
Lawn mower (15 m)	90	Kitchen blender
Inside sports car (80 km/h)	80	Pneumatic drill (15 m); Ringing alarm clock (1 m)
Subway train (15 m), Freight train (30 m) Well-projected speech (1 m)	70	Highway 401, 50 m from closest lane
Large store, Shopping mall	60	Microwave oven (0.5 m); Large office
	50	Residential area, Downtown at night
1.8 MW Wind turbine at 500m, Bedroom No TV or HiFi	40	Suburban residential areas at night
Soft whisper (1.5 m)	30	Broadcast studio
Recording studio	20	Concert hall
Threshold of hearing	0	Pin drop

