

HEARING CONSERVATION

This practice applies to all Gray & Son/Maryland Paving personnel whose noise exposure equal or exceed an eight (8) hour time-weighted average sound level of 85 decibels measures on the A-weighted scale (dBA).

Definitions

For purposes of this Hearing Conservation Program the following definitions apply:

Audiogram - A method of recording an individual's sensitivity to sound, showing hearing threshold levels (measured in decibels) as a function of the frequency of the sound (measured in Hertz or cycles per second). An audiogram indicates how loud a sound at a given frequency must be before it can be detected.

Decibel (dBa) - A unit used to represent the relative magnitude of sound. A level of zero decibels is the weakest sound that can be heard by a person with good hearing. The decibel scale is logarithmic, increasing by six (6) for every doubling of sound pressure. The following table gives some examples of typical decibel levels:

1	Softest Average
20	Quiet boom
50	Office
40-6	Normal Conversation
80	Metal lathe at 2 foot
90	Power plant turbine at 2
100	Chain Saw
115	Forced draft fan

dBA- A sound pressure level (or decibel measured by an instrument that weighs each frequency in such a way to reflect the human ear's relative response to different frequencies (pitch).

Extremely High Noise Area - Any area where the sound pressure level either continuously or intermittently equals or exceeds 100 dBA.

High Noise Level - Any areas where the sound pressure level either continuously or intermittently equals or exceeds 85 dBA.

Noise Dose - The cumulative noise exposure of an employee during a normal work day. Noise dose is similar to Time Weighted Average exposures but is expressed as a percentage. The following table gives the conversion of noise to an eight (8) hour Time Weighted Average exposure.

<u>Noise Dose (%)</u>	<u>Eight flt hour Time</u>
40	80
100	85
200	90
400	95
800	100

Noise dose is measured with an instrument that integrates sound pressure levels over a period of time in such a manner that it directly indicates a noise dose.

Permissible Exposure Level - Time Weighted Average - The allowable combination of noise level and duration which an employee may experience taking into account effects of averaging fluctuations above and below that level. The Time Weighted Average is obtained by averaging over time the various noise levels experienced over die entire work shift. The Occupational Safety and Health Administration's (OSHA) standard for occupational exposure to noise specifies a maximum permissible noise exposure level of 90 dB for a duration of eight (8) hours, with higher levels allowed for shorter duration. To more fully protect employees, the company's policy and this Safe Practice establishes a maximum permissible noise exposure level of 85 dB for duration of eight (8) hours. All employees who also have occupational noise exposures equal to or exceeding an eight- (8) hour time.

Weighted Average of 85 dBA (dose = 100%) must be included in the Hearing Conservation Program.

Standard Threshold Shift - A change in an individual's hearing threshold(s) relative to the baseline audiogram of an average of 10 dB or more at 2,000,3,000, and 4,000 Hertz in either ear.

MONITORING

Monitoring may either be performed to determine die noise level in an area (sound level surveys) or to determine die noise dose for an employee. Noise levels are measured with a sound level meter, while noise dose is measured with a noise dosimeter.

CONTROLS FOR REDUCING NOISE EXPOSURE

Engineering Controls:

Whenever possible, engineering controls shall be used to reduce the noise level at the sources of noise and thus reduce employee noise exposure.

Where noise levels produced by equipment exceed 85 dBA, an investigation shall be made to determine the feasibility of engineering control to reduce noise.

Administrative Controls:

The effect of noise on hearing is influenced both by the intensity of the noise and the duration of exposure. Control measures aimed at either intensity or duration will afford protection from noise-induced hearing loss. Noise intensity is primarily controlled by engineering controls or by use of hearing protectors. Short cuts through high noise areas should be discouraged, as should social congregation in such areas.

Warning Signs:

Areas identified as high noise areas (sound levels greater than 85 dBA) shall be posted with clearly visible warning signs as shown below:

**WARNING
HIGH NOISE AREA
HEARING PROTECTION REQUIRED**

Personal Protective Equipment

General:

The use of hearing protective devices is mandatory when:

Working in an area 85 dBA or above

Entering a posted area and shall not be removed until exiting the area.

Selection of Hearing Protection:

Hearing protectors shall be selected on the basis of the attenuation provided by the device and the noise level to which the employee is exposed. The Noise Reduction Rating method shall be used to select the hearing protector. Each type of hearing protector is assigned a Noise Reduction Rating that is printed on the protector container. When selecting hearing protectors, Noise Reduction Ratings must be used with extreme caution as these numbers represent the best attenuation which may be achieved under controlled Laboratory conditions; conditions which differ substantially from actual use in the field.

Ear Plugs:

In order to avoid introduction of dirt into the ear canal, employees shall insert ear plugs with clean hands. Ear plugs are best inserted by pulling up and out on the top of the ear with the hand opposite the ear and inserting the plug with the other hand. Ear plugs must fit snugly into the ear canal to provide full attenuation. Talking and chewing may result in a loosening of the ear plug fit, so the fit should be checked through the day. Disposable ear plugs shall be discarded after each use.

Special Conditions:

When purchasing portable tools, consideration shall be given to the noise level the tool produces, as well as the use factor of the tool.

Proper ear protection shall be worn when using portable tools that produce high noise levels.