SAFETY UNLIMITED, INC.

Weekly Safety Meeting

Proper Hearing Protection

Hearing loss is the No. 1 sensory disability in the world. The World Health Organization estimates that 16 percent of hearing loss worldwide is attributable to occupational noise exposure. To minimize the risk of incurring hearing loss due to noise, it is important for organizations, employers, and individuals to understand how they can better protect themselves and their employees from excessive noise in the workplace.

The critical sound level when hearing protection should be worn is 85 decibels (dBA), established for an 8-hour time weighted average. The louder and longer your exposure, whether at work, at home, or during recreation, the more likely your hearing will be damaged. If you want to have a sense of "how loud is loud," the following examples, along with their decibel rating, will give you an idea:

Decibels:

- 30-40 quiet pleasant sounds, a bird chirping;
- 40-50 quiet to normal office sounds;
- 50-60 normal conversation;
- 70-90 heavy machinery, electric motors, garbage disposal, city traffic;
- 100-120 jack hammer, power saw, motorcycle, lawn mower, rock music and
- 140+ nearly jet engine, gunshot (this level causes pain).

Hearing protection devices (HPD):

Hearing protection devices (HPD) such as earmuffs and earplugs can be an effective measure to protect hearing in noisy work environments. However, hearing protection devices are only effective if they are properly sized and carefully fitted into or over the ear.

There are several common types of hearing protection devices:

- Formable earplugs made of expandable foam. One size fits most people.
- Pre-molded earplugs made from flexible plastics. Often sold in different sizes, they should be selected to provide best fit for each ear.
- Semi-aural devices, or canal caps, consisting of flexible tips on a lightweight headband. They provide less protection than earplugs or earmuffs but may be good for intermittent use.
- Earmuffs having rigid cups with soft plastic cushions that seal around the ears.

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Disposable or reusable plugs:

Many disposable or reusable plugs are available and reduce noise by about 30-33 decibels. This is the Noise Reduction Rating (NRR) you see on the box. However, since the NRR is established in a laboratory with perfectly fitted plugs, experts recommend that the true rating is generally about 7 decibels less than indicated. Hearing protectors of the earmuff type are usually closer to the actual NRR.

When hearing protection is worn, your level of exposure to noise is based on the NRR rating of the protection device being used. Keep in mind, however, that while the NRR is measured in decibels, the hearing protector being used does not reduce the surrounding decibel level by the exact number of decibels associated with that protector's NRR. For example, if you are working with a jack hammer where the level of noise exposure is 100 dB and you are wearing earplugs with an NRR 33dB, your level of exposure would not be reduced to 67 dB. Instead, to determine the actual amount of decibel deduction applied (when decibels are measured dBA which is the most common), you take the NRR number (in dB), subtract seven, and then divide by two. Given the previous example, your noise reduction equation would look like the following: (33-7)/2 = 13.

This means that if you are working with a jack hammer with a level of noise exposure at 100 dB and you are wearing a hearing protector with an NRR 33 dB, your new level of noise exposure is 87 dB. If you are wearing a product with an NRR of 27 it would deduct 10 decibels (27-7/2=10).

Ear plugs

The formable foam earplug must be narrowed and compressed by rolling before it is inserted into the ear canal. Once inserted, the earplug expands to fill the ear canal and to reduce noise transmission further into the ear. If it is inserted incorrectly, the foam earplug will provide much less protection against noise.

To properly fit a formable foam earplug:

1. With clean hands, slowly roll and compress a foam earplug into a very thin cylinder.
2. Reach around the head with one hand to pull the top of the ear slightly outward and upward while inserting an earplug into the ear canal with the other hand.
3. After insertion, hold foam earplugs in place with a fingertip for a few moments to ensure that the plug expands in the ear canal without moving out of the ear. In a noisy environment, the reduction in perceived sound level as the plug expands should be noticeable.
4. Have a coworker visually check the earplug. If the half or more of the earplug is sticking out of the ear canal, it not fitted correctly and won't provide the designed protection.

To properly fit an earmuff:

1. Adjust the headband so that it sits comfortably on the head and so that the cushions exert even pressure around the ears.
2. Pull hair back and out from beneath the cushions to ensure a proper seal.
3. Muffs should fully enclose the ears.

Remember:

Preventing hearing loss is to make a personal commitment to wear the appropriate hearing protection. An ongoing struggle for many employers is to ensure workers who should be wearing hearing protection actually are wearing it on the job, all the time. Ultimately, workers decide if they wear hearing protection correctly.

Hearing damage is permanent…but it can be prevented!!

Safety Meeting Sign-In Sheet

Supervisor:	*Subject:*
Location:	*Date:*
Conducted By:	*Trainer Signature:*

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests