# SAFETY AWARENESS

Brief Topic Safety Refresher Training For Associates

2024

## **Hearing Protection Devices**

Your ears are very sensitive. Prolonged exposure to loud noise can lead to permanent hearing damage and even cause you to go deaf. OSHA recommends that workers use hearing protection should noise levels reach or exceed 85 decibels across an eight-hour workday. Should noise exceed 90 decibels, hearing protection is required.

## **Noise Reduction Rating**

All hearing protection devices have a noise reduction rating (NRR) listed on their respective packaging. The NRR refers to how many decibels by which an environment's noise levels will be reduced. For example, in an environment of 90 decibels, a hearing protection device with an NRR would reduce the noise levels to 57.

But, research suggests that NRRs tend to overestimate the effectiveness of devices. It is therefore suggested that devices undergo a "derating" process. Derating refers to the assumption that devices will generally not perform perfectly to their NRR due to them not fitting everyone perfectly. One method by which a device can be derated is to subtract seven from its NRR and divide the result in half. For example, an NNR of 33 would result in a derated rating of 13. In the previous example, the device in question would actually only reduce noise levels from 90 to 77, not 57.

According to industry experts, earmuffs are generally most accurate when it comes to NRR, while earplugs might have their ratings derated by as much as 70%.

Of course, different types of hearing protection have their own advantages and disadvantages.

## **Earplugs**

Earplugs can be made from expandable foam or pre-molded using silicone, plastic or rubber. They provide blockage inside the ear canal.

#### Advantages:

- Typically provide a high noise reduction rating (NRR)
- Affordable
- Compatible with other forms of personal protective equipment (PPE) such as hard hats, glasses and goggles
- Small, light and easily transported
- More comfortable in hot, humid or confined work areas

#### Disadvantages:

- Easily misplaced
- Require good hygiene practices
- May be inserted incorrectly, resulting in inadequate protection
- May irritate the ear canal

When an earplug is inserted correctly, the sound of your own voice should be muffled.

#### **Earmuffs**

While earplugs are inserted inside the ear canal, earmuffs provide protection by covering the canal and sometimes the entire ear.

#### Advantages:

- Typically provide a high NRR
- Fast and simple to put on and take off
- One size fits most employees
- Easy for others to see that you are using them at a distance
- Not easily misplaced

### Disadvantages:

- Less portable, heavier
- Sometimes incompatible with other PPE; however, there are special earmuffs that easily mount to hard
- Can be uncomfortable or inconvenient in hot, humid or confined work areas

## **Canal Caps**

Canal caps are somewhat of a hybrid between earplugs and earmuffs. They look similar to earplugs, but instead of being actually inserted into the ear canal, they form a lid over the entrance to the canal and are often connected by a band that can be worn around the head, around the neck or below the chin.

## Advantages:

- Fast and simple to put on and take off
- One size fits most employees
- Light and easily transported

## Disadvantages:

- Typically have a lower NRR than earplugs and earmuffs
- Band may be uncomfortable or inconvenient for employees
- More expensive than ear plugs

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