

# 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 NRR 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.

