



MEL SAFETY INSTITUTE SHIFT BRIEFING

Hearing Protection – Is your Hearing Protection Sufficient for the Task?

When you are exposed to loud noises, whether in the work place or at home or doing a hobby, the most critical question is what LEVEL of hearing protection do I need? Whether you choose to wear ear muffs or ear plugs, you still must choose the correct level of protection. We will break this down for you now.

To get a true answer to the question you need three things; 1) the sound level of the activity, 2) the Noise Reduction Rating of the device, and 3) the EFFECTIVE Noise Reduction of the device. Let's look at all three.

1. Finding the Noise Level of Activity

You will need a noise meter. While a true noise study would require a calibrated noise meter, you can a close approximation using a free noise meter app. Take the reading near your hearing zone, or ears. Record it. If the noise is above 90 decibels, you should check to make sure your device is giving you enough protection.

Give an example of one of your jobs, or use a ride-on lawn mower, typically around 94 decibels at the head of the operator.

2. Finding the Noise Reduction Rating (NRR) of the Hearing Protection Device

Ear muffs and ear plugs have a NRR printed on the packaging. Noise Reduction Ratings are number between 10 and about 35. You'll need that number, too.

Show the NRR on the packages of the hearing protection devices in your department / facility.

3. Finding the EFFECTIVE Noise Reduction Rating of the Device

Noise Reduction Ratings are developed in laboratories, and most likely will not reflect actual circumstances.

For ear muffs, the Effective NRR would be the same as the laboratory NRR, ASSUMING you wear them properly and not over a hoodie, or slightly off your ear so you can hear your co-worker.

For ear plugs, they are almost never fully and correctly inserted and they are constantly loosening as you talk, bend over, etc. so hearing researchers recommend, subtracting 7 from the laboratory NRR and then halving that. So an ear plug with a NRR of 33, would provide an EFFECTIVE NRR of 13 decibels. ($33-7 = 26$ & $26 / 2 = 13$)

4. Finding if that is Sufficient Protection

Subtract the EFFECTIVE Noise Reduction Rating from the noise level measured. If it is below 85 decibels, the device offer sufficient level of protection for that task. If not, you should choose a different device or a device with a higher NRR and Effective NRR.

Do another example from your jobs and devices

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