What is Hearing Protection NRR?

The Noise Reduction Rating (NRR) is an estimation of the amount of protection a hearing protection device will provide in a noisy environment. It is simply the decibel (dB) noise reduction or attenuation for the earplug or earmuff based on laboratory test data. Most hearing protectors are rated to protect from 25 to 35 decibels; however, this rating is based on test results reached in a laboratory setting. To estimate protection in real-world working conditions, the NRR must be de-rated.

An easy method to de-rate

- Take the NRR on the package (NRR 30 decibels)
- Subtract 7** (30 – 7 = 23 decibels)
- Divide the result by 50% (23 ÷ 2 = 11.5 rounding down for the safety factor).

So, if our noise level has been previously measured at 95 decibels, subtract 11 and 84 decibels our adjusted exposure.

**Subtract 7 dB from the NRR if noise is measured on the A-weighted decibel scale (dBA). Skip this step if noise is measured on the C-weighted dB scale and simply divide the NRR by 50% and subtract from decibel level.

OSHA allows employees to be exposed to noise levels at 90 decibels for eight hours, unless you have experienced a Standard Threshold Shift or have not had a baseline hearing test and are part of a hearing conservation program. NIOSH recommends that the eight-hour exposure be no more than 85 decibels; scientific studies have shown that some people lose their hearing even at this level of exposure.