The WORKHORSE® DYK Series
HEARING PROTECTION

1 DID YOU KNOW...What NRR is?

- NRR stands for Noise Reduction Rating. NRR is a unit of measure used to determine the amount of hearing protection that a device provides in decibels. The higher the NRR, the more noise the hearing protector can reduce.
- It is important to note that the number of decibels on the package is not the actual amount of noise being reduced. To calculate this, take the environmental noise factor and subtract the NRR to get the level of noise entering the ear once wearing the protective device. This will determine if you are in a safe range.

2 DYK What kind of NRR rating you need?

- The degree of noise reduction you may need will vary on the environmental noise factor you are being exposed to.

3 DYK What type of hearing protection is best for you? Or the benefits of earplugs vs earmuffs?

- Aside from the amount of noise reduction required on site, various hearing protection products are based on primarily on preference.
- In general, earmuffs/banded ear plugs are easy to fit and achieve good noise reduction. They are easy to put on and remove, making them suitable for intermittent noise. They are also easy to clean. It is important to note that some can get in the way of other PPE.
- On the other hand, ear plugs are light-weight, easy to carry around and allow more opportunity for the worker to stay cool in a hot environment. They also provide optimal low-frequency noise blocking when worn as directed by the manufacturer, and do not interference with glasses or headgear.
- To summarize, it depends on the work environment and what the worker determines is best suited to their needs.

4 DYK how the sound levels are measured in industrial work environments?

- In work environments, a decibel meter is often used. A decibel meter measures sound through a microphone. The device measures the sound pressure deviations and changes it into an electrical signal. The decibel meter is then able to measure the electrical signal and give a decibel output, which is used to determine the sound levels and the acceptable ranges.
- A decibel meter uses a microphone to capture sound. The mic captures sound pressure deviations and converts them into an electrical signal that is made stronger by a preamplifier. The decibel meter then uses signal processing to apply frequency and time weightings to the signal according to international standards.

5 DYK when a noise level is considered dangerous?

- If noise levels are over 85 decibels for more than an eight-hour period, hearing protection must be worn. Anything over 85 decibels is considered excessive noise. If noises exceed 95db, shorter time periods of exposure (≤ 4 hours) can cause long-term hearing damage, which is why it is important to wear hearing protection!

6 DYK what the attenuation data on the packaging represents?

- The attenuation data on the package represents the mean values at each frequency. These are the average amounts of sound attenuation that the hearing protector provides across 10 human subjects in the laboratory. The standard deviation values represent how variable the attenuation data was across these 10 human test subjects. Higher numbers indicate more variability.

7 DYK the various CSA classes and their differences?

- The CSA classes are determined by the level of noise reduction the product provides at various frequencies (Hz). “Table 1” on page two of this document, helps to explain the differences and how each class is achieved. This table can be found in the CSA Z94.2 standard.

8 DYK what standard is hearing protection tested to?

- WorkHorse hearing protection devices are tested at a reputable lab to the ANSI S3.19-1974 standard.
- There is a CSA standard (CSA Z94.2) that was developed as a “selection, care and use” guide for those using hearing protection devices. Bunzl Safety follows this standard when marking our hearing protective devices to the applicable CSA class (Class A, B, C etc.)

9 DYK when your PPE products need to be replaced?

- “Table 2” on page two, will help walk you through how to get the most out of your product and extend its shelf life.
- When the product becomes dirty, damaged, or does not return to its normal shape, it needs to be replaced.

10 DYK what the EPA logo on packaging represents?

- The EPA logo represents that the product has been tested in accordance with the appropriate standard (ANSI S3.19-1974), which means the manufacturer has complied with the US Federal Regulation. The EPA mission is to protect human and environmental health by creating standards that the health of individuals and the environment

11 DYK how long can you wear ear plugs before replacing? Or if it’s safe to reuse disposable ear plugs?

- Typically, foam ear plugs are one-time use only and are meant to be discarded after. Despite this, some people reuse them and as long they are cleaned between uses and stored properly, they note they can be used several times. If they no longer return to their original shape, become soiled, or become damaged, it is recommended they are discarded as this can affect their ability to provide protection. If you are looking to reuse ear plugs, we recommend purchasing reusable ear plugs.

12 DYK which parts of a corded ear plug are metal detectable?

- This depends on the model. There are some models in the marketplace where just the earplugs are metal detectable, and some models where both the cord and plugs are detectable. These type of hearing protectors are often used in food manufacturing facilities. They can help to prevent food contamination, as these types of plants typically have metal detectors as part of their outgoing inspection process. The plugs contain a stainless-steel ball inside of them. If the cord is also metal detectable, it would contain metal particles within the cord.
- Something to keep in mind when choosing a metal detectable hearing protection device is the colour of the product. Most models incorporate the colour blue into the product, rather the plug contains pigments of blue, or the cord is blue. The colour blue provides a sharp contrast against most foods.

13 DYK if you need a higher rating than NRR 32, you can use both earplugs and earmuffs together?

- If higher than NRR 32 is needed, yes both earplugs and earmuffs can be used in conjunction to provide a greater level of protection.

14 DYK what the difference is between push-in and roll-up ear plugs?

- The difference between the two is the method used to insert the plug into your ear canal. There is no difference in terms of NRR ratings, as that varies from product to product. It comes down to preference, one style is not superior to the other technically speaking.

15 DYK what to wear if you have hearing aids?

- Most earmuffs can accommodate hearing aids, and we recommend keeping hearing aids in so that important noises can still be heard. When looking for earmuffs to be used with hearing aids, we recommend those with deep cups to allow enough room for hearing aids.

16 Continues on next page

The WORKHORSE® DYK Series
HEARING PROTECTION

16 Table 1: Sound Attenuation for Hearing Protectors

Sound Attenuation Requirements for Hearing Protectors

(See Clauses 6.1.4 and 7.1.)

	Minimum attenuation, dB		
Frequency, Hz	**Class A**	**Class B**	**Class C**
125	10	5	None
250	18	12	None
500	26	16	None
1000	31	21	11
2000	33	23	13
3150	33	23	13
4000	31	21	11
6300	33	23	13
8000	33	23	13

Notes:

(1) *L Designation — Hearing protectors that meet the requirements for either Class A or Class B and have a minimum of 20 dB attenuation at 125 Hz will be designated as AL or BL, respectively.*

(2) *The sound attenuation requirements given in Table 3 are based solely on mean sound attenuations (see Clause 7.2(b)), although the variability of the attenuation across the user population has equivalent importance. The laboratory-derived standard deviations of the mean attenuation are supposed to provide some indication of this variability, but for the majority of currently available data they tend to be more indicative of the experimental techniques of the test laboratory than they are representative of the inherent variability of the device being tested. Therefore, standard deviations are specifically excluded from Table 3, to be accounted for instead in Table 4, which provides a recommended procedure for matching hearing protector classifications to measured noise exposures.*

(3) *The noise reduction rating (NRR) of a hearing protector cannot be used reliably to determine the classification of a hearing protector. Because values of NRR are calculated differently from the class definitions given in Table 3, there is considerable overlap in values of NRR between Classes A and B. Generally, however, a hearing protector with an NRR value of at least 24 and with mean-attenuation values of at least 26, 31, and 33 dB at 500, 1000, and 2000 Hz, respectively, meets the Class A requirements. A protector that does not meet the Class A mean-attenuation requirements at 500, 1000, and 2000 Hz, but has an NRR value of at least 17, falls generally into Class B. Likewise, a protector with an NRR value of less than 17 falls generally into Class C.*

17 Table 2: Product Care Instructions

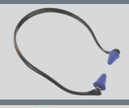
Image	Model #	NRR & CSA RATING	Product Cleaning Instructions	Inspecting & Replacing
	**SHR1976Q** WorkHorse® Ear-Band	**NRR 25 Meets CSA Z94.2, CLASS AL**	Wipe dirt and debris from ear plugs with clean cloth between uses.	Replace when the ear-plugs are soiled, damaged, no longer restore to their orginal shape, or ear plugs detach from the band.
	**SHREPCCQ** WorkHorse® Corded Ear Plugs Dispenser Box	**NRR 27 Meets CSA Z94.2, CLASS AL**	Wash ear plugs with mild soap and warm water (as necessary)	Check for cracks or tears on the ear pieces. Replace when the ear plugs are damaged, lose their pliability/softness, or detach from the band.
	**SHREPS-3CQ** WorkHorse® Corded Foam Ear Plugs	**NRR 32 Meets CSA Z94.2, CLASS AL**	Wipe dirt and debris from ear plugs with clean cloth between uses.	Check to make sure the ear plug is completely intact, and continues to return to its orginal shape. Replace when the ear plugs are soiled, damaged, no longer restore to their orginal shape, or ear plugs detach from the cord.
	**HREPM200CD** WorkHorse® Metal Detectable Corded Ear Plugs	**NRR 27 Meets CSA Z94.2, CLASS AL**	Wash ear plugs with mild soap and warm water (as necessary)	Check for cracks or tears on the ear pieces. Replace when damaged, ear plugs detach from the cord, or lose their pliability/softness.
	**HRPU200CD** WorkHorse® Metal Detectable Corded Ear Plugs	**NRR 32 Meets CSA Z94.2, CLASS AL**	Wipe dirt and debris from ear plugs with clean cloth between uses.	Check to make sure the ear plug is completely intact, and continues to return to its orginal shape. Replace when the ear plugs are soiled, damaged, or no longer restore to their orginal shape.

Image	Model #	NRR & CSA RATING	Product Cleaning Instructions	Inspecting & Replacing
	**HRPU200C** WorkHorse® Pre-Shaped Corded Foam Ear Plugs	**NRR 32 Meets CSA Z94.2, CLASS AL**	Wipe dirt and debris from ear plugs with clean cloth between uses.	Check to make sure the ear plug is completely intact, and continues to return to its orginal shape. Replace when the ear plugs are soiled, damaged, or no longer restore to their orginal shape.
	**SHREP10SQ, SHR100Q, HRPU500, HRPU200** WorkHorse® Pre-shaped Foam Disposable Ear Plug	**NRR 32 Meets CSA Z94.2, CLASS AL**	Wash ear plugs with mild soap and warm water (as necessary)	Check to make sure the ear plug is completely intact, and continues to return to its orginal shape. Replace when the ear plugs are soiled, damaged, or no longer restore to their orginal shape.
	**HR3870, SHR3970Q** WorkHorse® Collapsible Earmuff	**NRR 28 Meets CSA Z94.2, CLASS AL**	Cup shell, headband and cushions can be wiped with mild soap and water, but the foam inserts CANNOT be wet or dampened.	Check for cracks, damaged, or soiled parts regularly. Replace when damaged, or soiled.
	**SHR2286Q** WorkHorse® Earmuff for Hard Hats	**NRR 23 Meets CSA Z94.2, CLASS A**	Cup shell, headband and cushions can be wiped with mild soap and water, but the foam inserts CANNOT be wet or dampened.	Check for cracks, damaged, or soiled parts regularly. Replace when damaged, or soiled.
	**SHR2195Q** WorkHorse® Foam Padded Earmuff	**NRR 26 Meets CSA Z94.2, CLASS A**	Cup shell, headband and cushions can be wiped with mild soap and water, but the foam inserts CANNOT be wet or dampened.	Check for cracks, damaged, or soiled parts regularly. Replace when damaged, or soiled.

Image	Model #	NRR & CSA RATING	Product Cleaning Instructions	Inspecting & Replacing
	**SHR3820Q** WorkHorse® Foldable Head Band Earmuff	**NRR 25 CSA Z94.2, CLASS A**	Cup shell, headband and cushions can be wiped with mild soap and water, but the foam inserts CANNOT be wet or dampened.	Check for cracks, damaged, or soiled parts regularly. Replace when damaged, or soiled.
	**SHR2155Q** WorkHorse® Earmuff Head Band	**NRR 23 CSA Z94.2, CLASS A**	Cup shell, headband and cushions can be wiped with mild soap and water, but the foam inserts CANNOT be wet or dampened.	Check for cracks, damaged, or soiled parts regularly. Replace when damaged, or soiled.