

uvex

hearing protection guide

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uvex-safety.com

protecting people

uvex hearing protection guide

How to select the right hearing protection

Not every hearing protection solution is right for every ear or every situation.

This brochure contains information about noise and hearing protection.



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What is noise?

Noise is not just loud sound that causes hearing damage – it also refers to sounds that are annoying and cause stress. This means even quiet noises such as a clock ticking or a dripping tap can severely impair a person's ability to concentrate.



The effects of noise on hearing and the human body

Our hearing is always on standby. It has no pause button and cannot be "switched off".

This means that a wide range of noise levels have an effect on our bodies every day. Whether it's in the workplace, day-to-day traffic noise or concerts during leisure time: Our hearing is always under strain.

Such noise doesn't just take a toll on our hearing – it can also lead to headaches, gastrointestinal complaints, sleep disorders, high blood pressure and noise-related hearing loss.

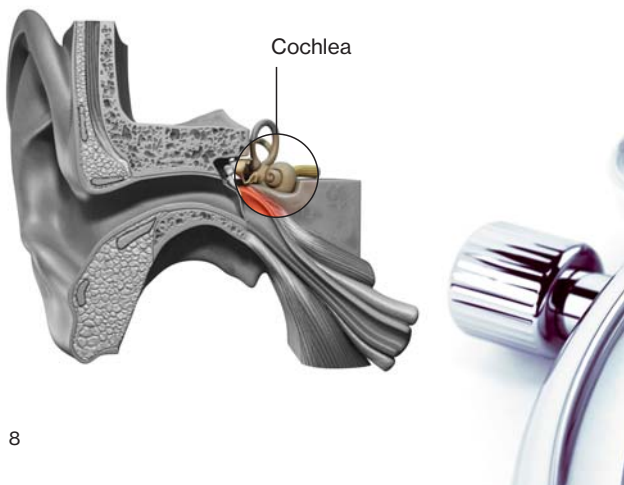


Noise-induced hearing loss

We are exposed to noise every single day, and this damages our hearing. Hearing damage develops slowly and painlessly: The hair sensory cells of the cochlea sustain long-term damage, which is irreparable.

The first signs of hearing impairment usually appear in noisy environments. Those with hearing impairments often find it hard to follow conversations in such conditions, and have to ask for the speaker to repeat themselves. The radio is constantly turned up a little more, or information is misunderstood over the phone.

Hearing impairment often causes the sufferer to withdraw from social situations.



Harm from exposure to harmful noise levels

The following table shows the maximum time that a person who is not wearing hearing protection should be exposed to noise per day before it becomes harmful.

85 dB	8 hours	106 dB	4 minutes
88 dB	4 hours	109 dB	2 minutes
91 dB	2 hours	112 dB	1 minute
94 dB	1 hour	115 dB	30 seconds
97 dB	30 minutes		
100 dB	15 minutes		
103 dB	7,5 minutes		



Download the free
iOS uvex Dezibel app
to measure the
ambient noise level



Protect your hearing

Use uvex hearing protection to protect your hearing from damaging noise exposure at work.

Hearing protection whatever the situation

Effective attenuation is required to protect hearing in extremely loud environments. With the right attenuation, damaging or irritating noise is reduced – but important alarm signals remain audible and speech can still be understood, meaning you don't feel isolated.

Making the right choice

The following factors must be taken into account:

- **Duration of wear**
- **Noise levels**
- **Fitting accuracy (spectacle wearers, size of hearing protection earplugs)**
- **Easy handling**
- **Compatibility with other PPE**
- **Customised hearing protection**
- **Applications/areas of use**

SNR method

**Noise level – attenuation value =
residual sound level**

(SNR) of the hearing protection

Example:

$$100 \text{ dB} - 26 \text{ dB} = 74 \text{ dB}$$

When choosing suitable attenuation, the ultimate goal is to ensure a residual noise level of 70–80 dB for the user's ear.

If the attenuation is too high (over-protection), this can lead to communication problems and a sense of isolation.



Attenuation measurement
in the uvex test laboratory

Attenuation in hearing protection: What you need to know

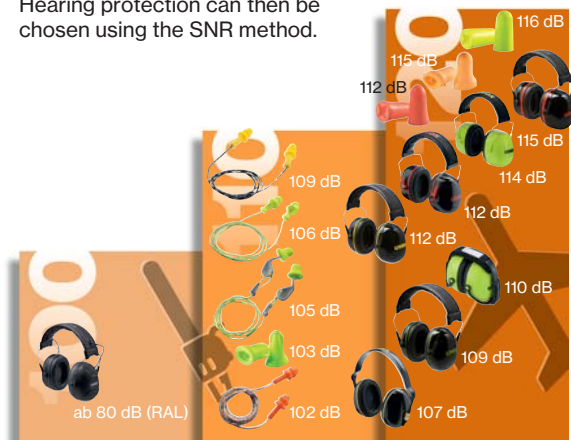
SNR stands for "Single Number Rating". The SNR value indicates how high the attenuation value of a product is. The higher the SNR value of the hearing protection, the greater the attenuation effect.

What level of attenuation is required?

Having a professional association perform a noise emission test is the best way to establish the noise levels in a workplace. During such a test, the equivalent ongoing noise level and peak sound pressure level (if required) are measured.

This will then be used to create a noise register.

Hearing protection can then be chosen using the SNR method.



Every ear is different

Every ear canal has a different size and shape – and needs hearing protection that fits.

For this reason, uvex offers a wide range of hearing protection options, which are suitable for a wide range of ear canal shapes and sizes. You can even choose customised hearing protection otoplastics.

individual
adjustment



Standards and regulations

Hearing protection is in the highest hazard category (category III) in accordance with the European PPE Regulation (EU) 2016/425.

EN 352 - European standard

The measured attenuation value is given as an **SNR value**.

EN 352-1 - earmuffs

EN 352-2 - hearing protection earplugs

EN 352-3 - hearing protection earmuffs attached to face protection or head protection

EN 352-4 - level-dependent earmuffs

EN 352-5 - Earmuffs with active noise reduction

EN 352-6 - Earmuffs with communication capabilities

EN 352-7 - Level-dependent hearing protection earplugs/otoplastics

EN 352-8 - Audio earmuffs for entertainment purposes



ANSI S.3-19-1974 - US standard

The measured attenuation value is given as an **NRR** value.

AS/NZS 1270 - Australia/New Zealand standard

The measured attenuation value is given as an **SLC80** value

Dielectric properties

Products labelled as dielectric are suitable for use when working with electrical equipment. Ideal for tasks on live parts or areas with strong electromagnetic fields.

Signal detection

An employers' liability insurance association can perform a calculation that categorises hearing protection products as particularly suitable for use in specific areas of application.

- S – Signal hearing during railway track superstructure construction
- V – Signal hearing when driving a vehicle in general road traffic
- W – General warning signal hearing, informative sound and speech intelligibility requirements fulfilled
- X – Extremely linear attenuation hearing protection
- E – Signal hearing for locomotive drivers in railway operations
- E1: very high suitability (especially with hearing loss)
- E2: high suitability
- E3: limited suitability



What is active hearing protection?

Advantages of active hearing protection

Active hearing protection

Active hearing protection differs from passive hearing protection through its additional integrated electronic functions.

Real-Active-Listening

The **RAL** function enables the wearer to hear ambient noise, despite using hearing protection.

Functionality of RAL

External microphones transmit ambient noise inwards towards the ear.

Effective protection:

Harmful noise levels are detected and reduced in real time.

No over-protection:

Ambient noise can still be perceived.

Improved communication:

Transmitting the ambient noise makes it possible to communicate with others in close proximity.

More communication options:

The hearing protection can be connected to electronic end devices via Bluetooth or a cable.

Long wearing times — comfort is crucial

If you are wearing hearing protection most of the day at work, wearer comfort is crucial.

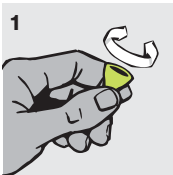
Ergonomics are a key focus when we are developing our products. For hearing protection earplugs or otoplastics, optimal adaptation to the ear canal is very important.

Custom hearing protection otoplastics offer maximum wearer comfort.

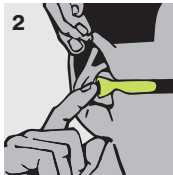


Adjusting and correctly using disposable hearing protection earplugs

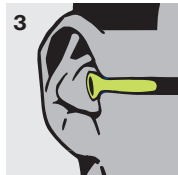
Using incorrect or unsuitable earplugs reduces the attenuation level – meaning they do not offer reliable protection. Before inserting hearing protection earplugs, ensure that your hands are clean. Before using your earplugs for the first time, read the instructions for use and ensure you are using earplugs with the correct attenuation level.



1
Pinch the earplug and roll it between your fingers for a short time



2
Use your opposite arm to lift your ear slightly to straighten your ear canal. Then insert the earplugs into your ear and hold them in place briefly.



3
Perfect fit

Functional tests for hearing protection otoplastics



The 'Use of hearing protection otoplastics' prevention guidelines issued by the German Institute for Occupational Health and Safety (DGUV) state that a professional functional test should be performed before the otoplastics are used for the first time, and that regular function tests should be performed at intervals of no more than three years to ensure that the protective function of the otoplastics is still intact.

uvex OTOCheck makes it quick and easy to perform functional tests on uvex hearing protection otoplastics – online.

Summary of benefits

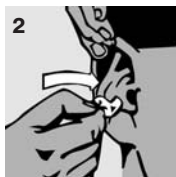
- Check the function of your otoplastics using a straightforward, digital process
- Simple registration
- Create multiple user profiles using one customer number
- Clear data management of your otoplastics orders
- Check the status of completed functional tests
- Document all test reports for quality assurance purposes



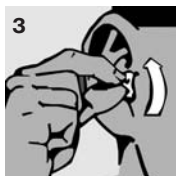
Using hearing protection otoplastics correctly



1 Grasp the otoplastic by the handle: the ear canal on the otoplastic should be positioned downwards.



2 Position the otoplastic at the entrance of the ear canal. Pull your ear conch slightly to make it straight.



3 Whilst turning the otoplastic towards your ear conch, insert the otoplastic into your ear canal.



4. Ensure that the otoplastic is in a comfortable position.

Fit test to determine the correct hearing protection earplug size for you

With the innovative **uvex xact-fit test** system, the fit and effectiveness of hearing protection earplugs can be checked simply and accurately.

Well-fitting and appropriate hearing protection earplugs reduces the risk of hearing damage due to noise at work.



The xact-fit test measures the Personal Attenuation Rating (PAR) of every user using the same earplugs.

Precise measurement of the protective effect

How well does your hearing protection fit and protect you? Thanks to advanced technology and user-friendly handling, the **uvex xact-fit test** quickly and reliably indicates the specific attenuation level of the tested hearing protection earplugs in the ear.



Quick and flexible to use

This portable system with Bluetooth headphones and tablet makes use particularly simple and flexible.

This means that the hearing protection earplugs, regardless of the brand and model, can be tested in the work environment.



Benefits of uvex xact-fit test

- Accurate test results
- Quick test procedure
- Portable thanks to battery-operated test system
- Suitable for almost all standard hearing protection earplugs
- Support and documentation for each employee after undergoing yearly training

uvex disposable hearing protection earplugs

uvex com4-fit	uvex x-fit	uvex x-fit XL	uvex hi-com
			
SNR			
33 dB	37 dB	38 dB	26 dB
			
signal detection			
S, V, W, E₁	S, V, W, E₁	X, S, V, W, E₁	

Other product variants

with cord	with cord detectable	with cord detectable	with cord detectable
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uvex reusable hearing protection earplugs

uvex xact-fit 	uvex whisper 	uvex whisper+ 	uvex whisper supreme 
26 dB	22 dB	27 dB	30 dB
			
W	S, W	S, V, W, E ₁	X, S, V, W, E ₁
detectable banded ear protectors	detectable	detectable	

**uvex
xact-fit
multi**



26 dB



X, S, V, W, E₁

**uvex
xact-fit
multi**



26 dB



X, S, V, W, E₁

**uvex
xact-fit
multi**



26 dB



X, S, V, W, E₁

**uvex
xact-fit
multi detec**



26 dB



X, S, V, W, E₁

available
in sizes
S, M/L, XL

uvex passive earmuffs

infinitely adjustable length
optimal earmuff shape
extra-soft sealing pads
replaceable sealing pads
foldable headband
padded headband

uvex K10



uvex KX10



uvex K20



**uvex K20
hi-viz**



30 dB

30 dB

matte rubber
surface

33 dB

33 dB

hi-viz design

uvex dielectric earmuffs

suitable for use in workplace
 environments with exposure to
 electrical voltage
 The following hearing protection
 earmuffs are metal-free

uvex K30



36 dB

uvex K200



28 dB

360-degree
 rotating
 headband for
 adjustable
 positioning

ideal for use in
 combination
 with a safety
 helmet and
 bump cap

insert wearing
 variants

**uvex K2
 foldable**



31 dB

foldable
 headband

padded
 headband

hi-vis design

length
 adjustment

uvex helmet earmuffs

- connects via 30 mm Euroslot
- dielectric design
- infinitely adjustable length
- rubber-cushioned earmuffs
- 360-degree rotation
- extra-soft sealing pads



uvex K10H



28 dB

uvex K20H



30 dB

uvex K30H



34 dB

uvex bayonet connection system

The uvex bayonet connection allows the earmuffs to be attached or removed without tools.



uvex active earmuffs

- active Bluetooth® earmuffs
- communication, telephony and streaming
- attenuation of impulse noise
- RAL function for perceiving ambient noise
- buttons with a shape that corresponds to their function
- IP54 protection
- battery status indicator
- microphone cover



headband earmuffs

uvex aXess one	uvex aXess RAL
	
31 dB	31 dB no Bluetooth functions

helmet earmuffs

uvex aXess one basic unit	uvex aXess RAL basic unit
	
27 dB	27 dB no Bluetooth functions

- noise insulation thanks to the rubber-cushioned earmuffs
- Two helmet connections available
- uvex helmet connection bayonet for combining with visor systems
- 30 mm uvex helmet connection for direct mounting on helmets

uvex custom hearing protection

uvex high-fit u-cut HC	uvex high-fit flex	uvex high-fit temp flex	uvex high-fit duro
			
20 dB 26 dB	23 dB 26 dB 31 dB	24 dB 27 dB	25 dB 28 dB 32 dB
signal detection			
20 dB: – 26 dB: S, W, E ₂	23 dB: – 26 dB: 31 dB: W, X, S, E ₁	24 dB: – 27 dB: S, W, E ₂	25 dB: – 28 dB: – 32 dB: W, X, S, V, E ₁
	detectable		detectable

uvex high-fit flex RS	uvex high-fit duro RS	uvex Otoplastik Headset C-com B-com/ B-com BM	uvex high-fit titan shiny / matt
			
22 dB	20 & 26 dB	headsets available in wired or Bluetooth versions with or without gooseneck	good heat dissipation and hypoallergenic titanium material, ideal for allergy sufferers
22 dB: W, X, S, E1	26 dB: W, X, S, V, E2 20 dB: W, S, V, E1		
detectable			

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