

**red three** **EE**  
European Eyesafety Engineering

THE CUSTOMISED HEARING PROTECTION SYSTEM FOR INDUSTRY  
ALMOST 100 YEARS OF EXPERIENCE



PERSONAL EAR OTOPLASTIC  
**SILOE 2002**





## Our hearing is precious

Most of us take good hearing for granted. From communicating with family and friends to the working environment, hearing affects our whole life. We go through our daily lives unaware of the damage extreme levels of noise can cause. The noise level of city traffic is roughly equivalent to an 8-hour noise exposure level of 85 dB(A). Therefore, it is vital that we protect our most sensitive organ and treat our hearing with respect.

## Red three E SILOE 2002

### Intelligent hearing protection for Industry

SILOE 2002 - technically outstanding hearing protection that is not only comfortable to wear but also brings new standards to industry. Innovation and a customised finish make it easier than ever to protect your employees' health with respect to medicine, resulting in a more efficient workforce.

SILOE 2002 increases productivity and gives your employees the chance to understand you in the future.



Every SILOE 2002 is delivered in its own case and is marked with a serial number. This provides a registration system ensuring each employee is given individual customer support. Our services (ultrasound cleaning, on-site checks) are other key advantages for you.

## The hearing protection that is really worn

Hearing protection has to fit perfectly and feel comfortable so it will be worn. SILOE 2002 is individually tailored to fit your ears. After ORL specialist-doctor takes a mould of the auditory canal, the otoplastic (another word for tailor-made hearing protector) is manufactured at our modern specialised laboratory where it is hand finished to the highest standards. The result - SILOE 2002 is comfortable, easy to insert, fits perfectly and can be worn for hours, stress-free.

## The hearing protection that increases safety

With our special patented valve, which is variably adjustable, the earpiece first and foremost muffles dangerously high frequencies. Nevertheless, it allows the wearer to have unlimited conversations and hear telephone and warning signals whilst wearing the protective earpiece. Leaving your employees free to communicate with protection but without sound disturbance. Additionally, the variably adjustable valve means you do not have to purchase different filters for various noise situations.

## The hearing protection that increases efficiency at work

The excellent protection from noise pollution and the comfortable fit allow your employees to concentrate on their work without disruption. This results in a satisfied and more productive work force. SILOE 2002 – reduces the symptoms of stress and its negative impact on health.

## SILOE 2002

### The safest choice for you employees

SILOE 2002 is a very high quality product which has set new standards in hearing protection. As well its modern design and outstanding quality, it is also easy to use - hearing protection that your employees will continuously wear with comfort and ease. The advantage for you - improve your employees' comfort and concentration and you will increase their efficiency, providing higher standards of safety.





## The hearing protection that is easy to use

SILOE 2002 can be easily inserted in your ear and worn comfortably for hours. It is easy to clean (simply with soap and water) and is stored in a special case.

## The hearing protection that respect your ears

SILOE 2002 is antialergic, non-irritant, with patented special vent that allows air into the auditory canal keeping your ear cool and causing less sweating. Otoplastic respect anatomy of human ear, this prevents that uncomfortable closed feeling and ensures no interference with your sense of balance (many nerv endings, specially n.vestibularis is are ended in outer auditory canal)

## The hearing protection that makes work easier

SILOE 2002 enables communication, it is even possible to make telephone calls while wearing it. Because of the special way it is made, with a sunken valve, it can also be worn in conjunction with safety helmets, safety glasses etc.

## Red three E SILOE 2002

### The smartest choice for you

SILOE 2002 is a technically proven hearing protection system suitable for all kinds of businesses. Years of experience and professional expertise mean that Neuroth can guarantee you the highest quality products. We also offer you unbeatable support SILOE 2002 can be fitted as standard or with a neckband (complete with shirt clip if you wish) and we offer ultrasound cleaning, on-site testing of your equipment and, of course, competent advice on using your Neuroth hearing protection. This is your guarantee that the hearing protection will be used.

### The hearing protection that is durable

SILOE 2002 is long-lasting and can be worn for years, that's why Red three E offers a 2 year warranty on the otoplastics and the patented valve (checked to EN352-2 standards, AUVA serial number PB97-231).



International valve patent

### The hearing protection that is an investment for your company

SILOE 2002 requires a higher initial investment in the health of your employees than standard earplugs. However, the above advantages, mean that it redeems itself in a very short period of time.



## Disadvantages of classical hearing protection (foam plugs)

- don't respect anatomical characteristic of human ear
- attenuation is difficult to quantify (over protected or insufficient protected)
- attenuate noise but repress acoustics
- disable perception of speech, alarms, warning signals
- disturb microclimate of the ear (ear doesn't breathe, extensive sweating)
- higher risk of an inflammations and bacterias
- irritate nerv endings in outer ear spec. n vestibuláris
- Disbalance
- Nystagmus
- Dizziness, Vertigo
- Non hygienic
- Settlement of cerumen and its systematical pressing in deeper parts of ear

## Advantages of ear otoplastic SILOE 2002

- 100% copy of ear
- level of attenuation is adjustable according customer needs
- attenuation is provided by VALVE not filter
- VALVE allows to air to circulate through
- VALVE attenuate harmful noise but allows to hear speach and warning signals
- SILOE 2002 is made of hard, smooth and antialergic Acryl
- easy to maintain and clean
- long life cycle, user could wear SILOE 2002 for years
- level of attenuation could be adjusted according changeable working enviroment



## Technical characteristics

Necessary assumed protection value according to EN 352-2

Frequency Hertz (Hz)	125	250	500	1000	2000	4000	8000
$M_r-S_r$ , v dB	5	8	10	12	12	12	12

M, Average attenuation value, S, Standard deviation according to EN 24869-1

Average attenuation in dB

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Setting for 90 dB	10,0	11,3	13,4	17,8	23,0	31,1	30,1	43,0
Setting for 100 dB	14,2	17,4	16,7	20,2	24,6	31,9	31,8	42,1
Setting for 110 dB	24,1	24,9	23,8	27,5	27,7	35,3	38,3	43,7

Standard deviation in dB

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Setting for 90 dB	5,2	3,0	3,9	3,0	2,9	4,3	4,3	3,9
Setting for 100 dB	3,9	2,4	3,0	3,5	4,5	4,2	5,1	6,0
Setting for 110 dB	4,0	3,2	3,2	3,9	6,1	4,2	4,1	4,6

Assumed Protection Value (APV) in dB

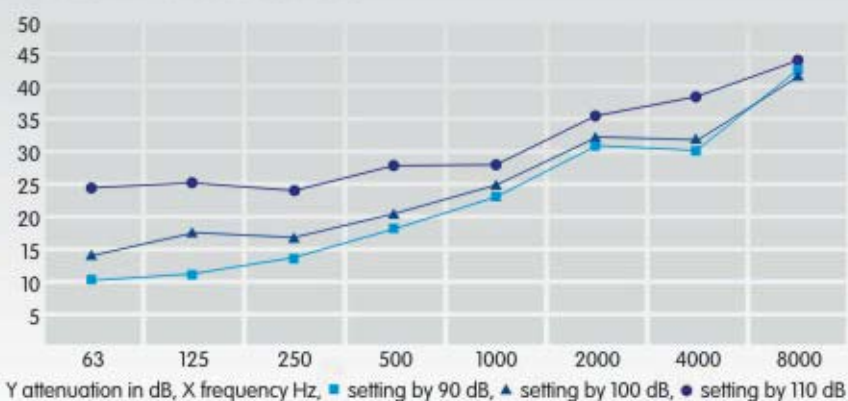
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Setting for 90 dB	4,8	8,2	9,5	14,8	20,1	26,8	25,8	39,1
Setting for 100 dB	10,3	15,0	13,7	16,7	20,1	27,7	26,7	36,1
Setting for 110 dB	20,1	21,7	20,6	23,6	21,6	31,1	34,2	39,1

SNR, H, M, L attenuation characteristics in dB

Frequency (Hz)	SNR	H	M	L
Setting for 90 dB	21	26	18	12
Setting for 100 dB	23	26	20	16
Setting for 110 dB	28	29	24	22

1 - priemerné hodnoty, 2 - vysoká hladina zvuku, 3 - stredná hladina zvuku, 4 - nízka hladina zvuku

Results of the acoustic test:







Certification: EN 352-2:2002, CE, ISO 9001

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