



The complete solution for the hearing health of professionals exposed to noise



COTRAL hearing protections for civil engineering

Customised hearing protection made of silicone or Crylit®
 Combined with the construction site helmet for maximum safety
 5-year guarantee

The protections are directly **combined with the construction site helmet**. A storage case containing the COTRAL protection is clipped to the helmet at the position provided for the protective shells. By opening the case, the hearing protection can be inserted in the ear.

The COTRAL BTP system may be offered with COTRAL Premium or COTRAL Micra 3D® protections.

For 6 you key points

- The ear impressions for each employee are taken at your company, according to your needs.
- Information is given to raise employee's awareness of the risks of noise during the impression taking.
- **Positioning of a storage case on each side of the construction site helmet** to keep your protections within the close vicinity of your ears!
- ATAG+ to select the filter according to your hearing ability, your noise environment and your function...
- Maintenance and monitoring of the efficacy of your acoustic filters for 100% safety.
- The possibility to manage your fleet of protections online. customer area.

Description

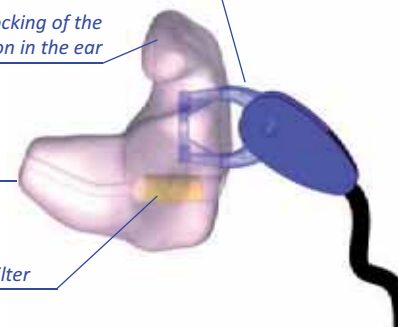


the handle and its unique alphanumeric code:
 red for the protection for the right ear,
 blue for the protection for the left ear

the hook facilitating locking of the protection in the ear

the canal

the acoustic filter



Civil engineering system with COTRAL Premium protections

Your guarantees

- Your protections are **certified** according to standard EN 352-2:2003.
- Your protections are **guaranteed for 5 years** (refer to the recommendations of use).
- An after-sales service at **www.cotral.co.uk "customer area"** or by telephone at **+33 (0) 2 31 69 05 13**.

You will appreciate...

AUDITOOLS: A online box with free downloadable documents at www.cotral.co.uk for hearing health management.



Laboratoire COTRAL
 BP100 14110 CONDE SUR NOIREAU
 ☎ +33 (0) 2 31 69 36 36
 📠 +33 (0) 2 31 69 36 35
www.cotral.com

Labor COTRAL
 Lebacher Straße 4 D-66113 SAARBRÜCKEN
 ☎ +49 (0)6 81 9963 637
 📠 +49 (0)6 81 9963 621
www.cotral.de

Laboratorium COTRAL
 8 Avenue des Arts B-1210 BRUXELLES
 ☎ + 32 (0)2 545 11 52
 📠 +32 (0)2 545 11 46
www.cotral.be

Labor COTRAL
 Bahnhofstrasse 52 CH-8001 ZÜRICH
 ☎ +41 (0)44 214 67 24
 📠 +41 (0)44 214 65 19
www.cotral.ch



Laboratoire COTRAL
 ZA Charles Tellier
 F.14110 CONDE SUR NOIREAU



COTRAL hearing protections for civil engineering

Customised hearing protection made of silicone or Crylit®
 14 certified models
 SNR between 20 and 32 dB according to the protection model

Choose the COTRAL protection that you need:

The acoustic filters

High-pitched sounds become harmful at 85 dB(A) and more, low-pitched sounds from 100 dB(A) upwards. The most sensitive frequencies are between 2000 Hz and 6000 Hz with a maximum at 4000 Hz.

Directly incorporated in the protection, the XS filter completely fulfil the needs for protection in an industrial environment. They offer marked attenuation at high frequencies and less attenuation at medium and low frequencies.

14 models are certified
 (standard NF EN 352-2:2003).

It is essential for the protection to reduce noise to below the regulatory thresholds without the attenuation's being excessively high. One should not ignore the significance of communication and the need to hear warning signals.

Source: standard EN 458

Choice of the filters

Each technician uses the ATAG+ analysis method. Developed by Laboratoire COTRAL, it allows selection of the filters according to the LEQ (mean intensity for 8 hours of exposure), the low and high frequencies, the wearing habits and the hearing losses of each user.

COTRAL Premium

		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	HML (dB)	SNR(dB)
XS5	Mf (dB)	9,7	10,6	12,4	19,5	23,0	30,2	32,4	34,1	H	23,1
	Sf (dB)	3,8	5,2	4,0	4,4	5,8	7,6	5,1	7,3	M	16,6
	APVf (dB)	5,8	5,4	8,4	15,1	17,2	22,6	27,3	26,8	L	11,0
XS11	Mf (dB)	12,9	13,5	17,7	19,2	24,4	30,2	34,4	35,8	H	25,4
	Sf (dB)	5,0	4,3	5,1	4,9	4,4	4,8	5,1	7,7	M	18,5
	APVf (dB)	8,0	9,1	12,6	14,3	19,9	25,5	29,3	28,0	L	14,1
XS18	Mf (dB)	13,0	14,6	17,8	24,6	24,2	32,9	35,2	34,1	H	26,2
	Sf (dB)	5,9	5,4	5,3	3,8	5,1	5,1	5,1	7,3	M	20,1
	APVf (dB)	7,1	9,1	12,5	20,8	19,2	27,8	30,1	26,8	L	14,9
XS21	Mf (dB)	16,9	18,0	20,9	25,2	25,9	32,2	36,8	35,3	H	27,2
	Sf (dB)	5,3	6,0	5,8	5,3	5,5	4,4	4,1	5,5	M	21,2
	APVf (dB)	11,5	12,0	15,2	19,9	20,3	27,8	32,7	29,8	L	17,3
XS35	Mf (dB)	15,2	18,0	19,5	22,9	25,9	32,2	37,2	35,5	H	27,9
	Sf (dB)	4,9	3,3	3,7	5,2	4,0	4,0	4,6	5,6	M	21,4
	APVf (dB)	10,3	14,7	15,8	17,7	21,9	28,2	32,6	29,9	L	17,8
XSP	Mf (dB)	20,7	21,2	22,3	24,9	26,6	33,5	36,7	37,2	H	27,2
	Sf (dB)	8,6	7,2	5,9	4,8	4,7	6,6	5,6	8,7	M	22,2
	APVf (dB)	12,1	14,0	16,4	20,1	21,9	26,9	31,1	28,5	L	18,5

COTRAL Micra 3D®

		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	HML (dB)	SNR(dB)
XS5	Mf (dB)	9,6	10,6	12,3	18,9	23,4	28,3	32,1	32,8	H	23,5
	Sf (dB)	5,2	4,1	4,3	3,3	5,0	5,8	3,8	7,0	M	17,0
	APVf (dB)	4,3	6,4	8,0	15,6	18,3	22,4	28,4	25,8	L	11,1
XS7	Mf (dB)	13,6	13,5	15,1	19,7	25,9	32,9	33,8	37,5	H	26,1
	Sf (dB)	4,9	5,0	4,5	4,9	6,7	4,7	5,2	7,0	M	18,1
	APVf (dB)	8,7	8,5	10,5	14,8	19,2	28,2	28,6	30,4	L	13,1
XS11	Mf (dB)	13,0	13,4	17,1	20,4	25,8	33,1	34,7	33,1	H	27,0
	Sf (dB)	4,4	4,4	4,8	4,4	4,9	4,3	5,2	5,8	M	19,5
	APVf (dB)	8,6	9,0	12,3	16,0	20,9	28,8	29,4	27,3	L	14,3
XS18	Mf (dB)	16,1	17,1	19,2	22,9	27,8	33,1	35,2	37,0	H	27,6
	Sf (dB)	7,2	6,5	4,9	5,8	6,4	4,3	4,8	7,3	M	20,6
	APVf (dB)	8,9	10,6	14,3	17,0	21,4	28,8	30,5	29,7	L	15,9
XS21	Mf (dB)	15,7	16,4	18,9	22,4	26,8	32,4	36,0	36,4	H	28,3
	Sf (dB)	6,6	5,5	4,3	5,0	5,0	3,2	4,1	4,1	M	20,9
	APVf (dB)	9,1	10,9	14,6	17,3	21,8	29,2	31,9	32,3	L	16,3
XS30	Mf (dB)	18,2	17,9	20,2	25,4	29,6	34,2	38,6	37,2	H	30,2
	Sf (dB)	6,0	5,5	5,5	5,1	4,7	4,2	5,4	4,9	M	23,1
	APVf (dB)	12,1	12,4	14,7	20,3	24,8	30,0	33,2	32,3	L	17,4
XS35	Mf (dB)	17,5	19,3	21,3	27,8	31,3	35,7	39,1	36,5	H	31,0
	Sf (dB)	5,5	5,1	3,5	5,5	5,7	5,3	2,9	3,4	M	24,9
	APVf (dB)	11,9	14,1	17,8	22,3	25,7	30,4	36,1	33,1	L	19,7
XSP	Mf (dB)	26,7	28,8	27,6	33,6	33,2	35,3	40,2	40,6	H	32,1
	Sf (dB)	5,4	5,1	4,7	5,4	5,3	4,3	4,3	5,6	M	28,7
	APVf (dB)	21,3	23,6	22,8	28,2	27,9	31,1	35,9	35,0	L	25,8

Mf (dB) : Affaiblissement - Dämmung - gemiddelde demping - average attenuation
 Sf (dB) : Ecart type - Standardabweichung - standaard afwijking - standard deviation
 APVf (dB) : Mf - Sf



Laboratoire COTRAL
 BP100 14110 CONDE SUR NOIREAU
 ☎ +33 (0) 2 31 69 36 36
 ☎ +33 (0) 2 31 69 36 35
 www.cotral.com

Labor COTRAL
 Lebacher Straße 4 D-66113 SAARBRÜCKEN
 ☎ +49 (0)6 81 9963 637
 ☎ +49 (0)6 81 9963 621
 www.cotral.de

Laboratorium COTRAL
 8 Avenue des Arts B-1210 BRUXELLES
 ☎ + 32 (0)2 545 11 52
 ☎ +32 (0)2 545 11 46
 www.cotral.be

Labor COTRAL
 Bahnhofstrasse 52 CH-8001 ZÜRICH
 ☎ +41 (0)44 214 67 24
 ☎ +41 (0)44 214 65 19
 www.cotral.ch



Laboratoire COTRAL
 ZA Charles Tellier
 F.14110 CONDE SUR NOIREAU