

TECHNICAL INFORMATION - EAR PROTECTION

Levels of Protection Physical Agents (Noise) Directive - 2003/10/EC

This Directive is now in place and became law in early 2006. It requires that persons working in noise levels between 80dBA (Lower Action Level) & 85dBA must be provided with suitable hearing protection on request. Where noise levels are at or above 85dBA (Upper Action Level, suitable hearing protection **MUST BE SUPPLIED AND WORN**. In addition, the new "Exposure Limit Value" requires that no worker may be exposed to more than "87dBA 8 Hour Equivalent" under any circumstances, taking into account any hearing protection worn, (the 87dBA level is that **INSIDE** the Hearing Protector). There are also new "Action Values" for IMPACT NOISE and the requirement for Risk Assessments in the workplace is reinforced by Article 4 of the new Directive.

Noise Meters:

As part of risk assessment, noise meter readings should be taken by a competent person to monitor sound level.

Electronic Hearing Protection:

The latest in sound technology - hearing protectors which amplify weak sounds while attenuating loud noises.

Ear Muffs

A traditional method of ear protection. Today's range of muffs cope with a very wide spectrum of industrial hazards. It is important to study the attenuation characteristics of each model as they do vary in performance across the range of sound frequency.

Helmet mounted ear muffs

Popular with safety officers, head and ear protection in one. Today's models are styled to be sensibly 'parked' when not in use.

TECHNICAL INFORMATION - EAR PROTECTION

Attenuation Data for B/Brand Ear Protection

	Frequency (Hz)								SNR (dB)
	63	125	250	500	1000	2000	4000	8000	
BBED1	22.2	22.8	24.4	31.6	41.7	37.3	39.4	35.9	33
	3.9	3.2	3.5	3.4	3.4	3.5	3.7	4.4	H - 34 M - 31 L - 24
	18.3	19.6	20.9	28.2	38.3	33.8	35.7	31.5	
BBFED	19.9	12.8	20.7	30.5	39.6	36.6	38.4	38.2	30
	4.2	2.2	2.7	2.0	2.4	1.9	3.1	2.3	H - 36 M - 28 L - 18
	12.7	10.6	18.0	28.5	37.2	34.7	35.3	35.9	
BBEP	36.3	33.0	33.3	36.1	37.1	36.1	41.8	38.5	34
	6.0	6.7	7.6	7.4	4.7	4.8	3.6	3.9	H - 33 M - 31 L - 28
	30.3	26.3	25.7	28.7	32.4	31.3	38.2	34.6	

Colour Key	Mean Attenuation (dB)
	Standard Deviation (dB)
	Assumed Protection (dB)

SNR (Standard Noise Reduction)

SNR (Standard Noise Reduction) is only a general means of comparing different ear muffs.

Generally the higher the SNR number, the better the performance of the ear muff across a range of noise frequencies.

Example: a SNR of 30 may not give a 30 decibel attenuation at all frequencies. The figures associated with H, M and L indicate the level of protection within the range of High, Medium or Low frequency noise.

Examples: For the wearer of an ear muff where H = 35 a high frequency noise of 100 decibels will drop to 65 decibels.

Wearing the same ear muff, where M=25, a medium frequency noise of 100 decibels will drop to 75 decibels.

TECHNICAL INFORMATION - EAR PROTECTION

Ear Protection Types

Communication Head Sets

For people covering large areas within a noisy environment, ear muffs that incorporate communication systems.

Plugs:

Can be worn conveniently with all other PPE items. Easy to use, with attenuation provided often exceeding that of ear muffs, whilst disposable they provide excellent protection with long term comfort.

Flex and Corded Plugs

These versions are favoured for carrying around the neck when not in use. Most plugs are also available in a corded version.

European Standards

Ear muffs and plugs are tested to the relevant European Standards and are CE marked.

EN352 Part 1	Ear Muffs
EN352 Part 2	Ear Plugs
EN352 Part 3	Helmet Mounted Ear Muffs
EN352 Part 4	Level Dependent Ear Muffs
EN352 Part 5	Active Noise Reduction Ear Muffs
EN352 Part 6	Ear Muffs with Electrical Audio Input
EN352 Part 7	Level Dependent Ear Plugs