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1st Action level

First action level:

- 80dB(A) $L_{EP,d}$
- 112 Pascals ($L_{CPK} = 135dB$)
- Take action as in regulations



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Above first action level

Employer must:

- Identify all employees at risk
- Put up signs
- Review if any changes to noise levels
- Repeat assessment <2 years
- Inform employees of risk
- Provide choice of PPE on request (first aid)
- Provide training / education
- Noise Control


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2nd Action level

Second action level:

- 85dB $L_{EP,d}$
- 140 Pascals ($L_{CPK} = 137dB$)
- Take action as in regulations



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Above second action level

Employer must:

- Demarcate as Noise Hazard Zones
- PPE must be used at all times
- Noise control to reduce exposure
- If L_{epd} is over 95dBA then must use octave band method to check if hearing protection is effective

Note: For peak action level, take the same action as for second action level

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Exposure limit value


- 87dB(A) $L_{EP,d}$ exposure limit
- 140dB L_{CPK} exposure limit (200 Pascals)
- Is the maximum permissible estimated operator noise dose whilst wearing (and not wearing) hearing protection
- Value at the ear after taking into account any PPE
- Therefore necessary to calculate effectiveness of PPE
- NOT a target, but minimum acceptable
- Target these individuals first

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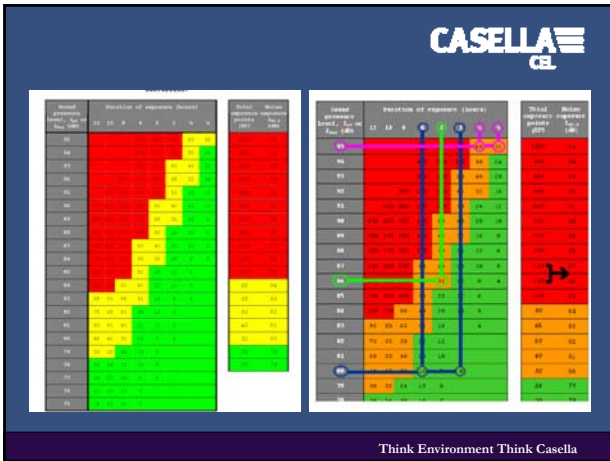
New exposure tool

- Exposure points have replaced nomogram
- Meant to allow easier assessment of higher risk activities



"Now relax and the Doctor will begin your hearing test in just a moment."

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Risk Assessment

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- Assess risks to Health and Safety
- Done to identify actions to reduce risks
- Necessary when lower action levels likely to be exceeded
- Should assess exposure, measure if likely to be above second action levels

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Audiometry

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- Employees over the second action level have the right to a hearing check (audiometric test)
- As a preventative measure individuals who may be susceptible to noise below this level should also be tested e.g. those with previous damage.

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Hearing Protection

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"If I was wearing my 'what' ?!"

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What do we need to measure for correct hearing protection

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- Octave band method
Needs frequency analyser 31.5Hz - 8KHz
- HML Method
Needs C and A weighted L_{EQ}
- SNR Method
Needs C weighted L_{EQ}

Octave band is the preferred method

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3M™ Ear Plugs - Disposable 1100, 1110

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The comfortable foam plugs
[Find a Distributor](#)

[Link to enlarge!](#)

Attenuation table - tested to EN352 2:2002 CE marked

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Mf (dB)	30.0	33.1	36.3	38.4	39.7	39.7	48.3	44.4
Sf (dB)	3.9	5.0	7.4	6.2	5.6	4.3	4.5	4.4
APVf (dB)	26.1	28.1	28.9	32.2	33.1	35.4	43.8	40.0
SNR-37dB	H-37dB		M-34dB		L-31dB			



L_{Aeq} Octave's less octave attenuation

$PNR = M - (H - M) / 4 \times (L_C - L_A - 2)$
OR
 $PNR = M - (H - M) / 8 \times (L_C - L_A - 2)$

$L_{ceq} - SNR$

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S.L.M. or Dosimeter?

- Two main types of instrument are used to perform workplace noise assessments
 - Sound Level Meter (SLM) 
 - Dosimeter 

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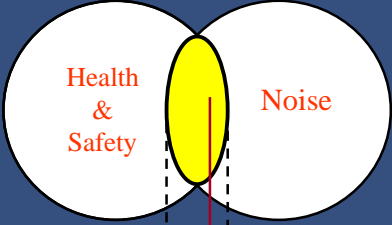
dBadge

- Weights only 68g
- Measures Personal Exposure
- No cable
- Display & Visual alarms
- 2 Button operation
- Automatic calibration




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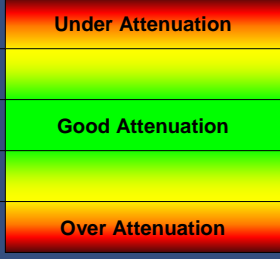
NOISE - V- HEALTH AND SAFETY



70 dB A (Lep'd) 87 dB A (Lep'd)
85 dB A (Lep'd)

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Sound Level at Ear under HPE

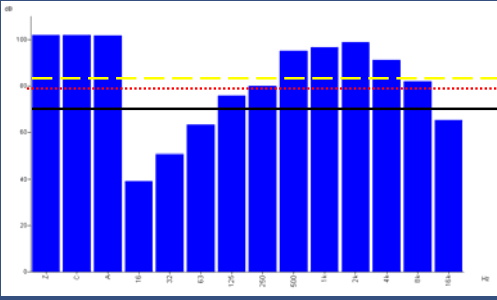


85
80
75
70

Under Attenuation
Good Attenuation
Over Attenuation

Noise level Inside the Protected Ear L'_A in dB(A)


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Narrowing down the available options

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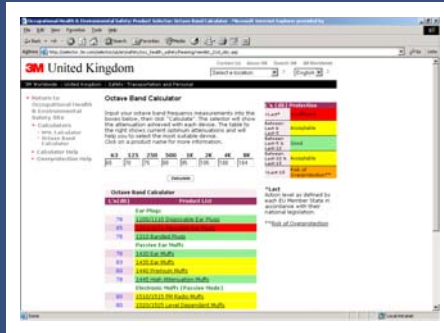
Hearing Protection Product Selector
The 3M hearing protection selection guide is designed to help you select the optimum 3M hearing protector for your workplace so as to reduce the risk of noise induced hearing damage while at the same time removing the potential danger of over-protection, which can affect audibility of vital communication and emergency sounds, for example fire alarms.
In addition to sound attenuation values, other factors to be taken into consideration when selecting a suitable hearing protector include wearer comfort, working environment, medical disorders and compatibility with other items of personal protective equipment.
There are two methods for estimating the effective sound level at the ear when wearing hearing protectors:
The HPL (High, Medium and Low Frequency) method, widely accepted amongst the safety practitioners as a reliable means of selecting suitable hearing protectors for a given workplace noise, it involves the use of both A-weighted and C-weighted sound measurements in the calculation.
The Octave Band method, however, is by far the most accurate way of estimating the effective sound level at the ear under the hearing protector. It involves the measurement of un-weighted sound level at each octave band centre frequency, ranging from 63Hz to 8000Hz.
The above calculators are based on the First Action Level of (95dB(A) as defined in the current Council Directive

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Narrowing down the available options



www.3m.com/uk/ohsa



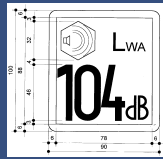
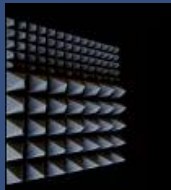
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Lets Make it Quieter

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Engineered Noise Reduction



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Implications



- Cost
- New assessment
- Review PPE
- Increase noise control
- Action plan
- Time

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A Quick Word "The Environment"



Section 61 Notices and section 60 Notices, PPG24

Dealing with the Local Authorities

Compliance and conformance

Noise, Dust, No, Vibration etc etc etc

The right equipment doing the work for you

Coffee, Milk & 2 Sugars, I bring the Jaffa cakes

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Questions ?

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Contact



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