

Controlling Noise and Hand Arm Vibration at Work through Risk Assessment

Our Challenge

Away from...

- Assessment as the end point
- Excessive quantification of exposure
- Reliance on personal protective equipment

Towards

- Control of risks
- Managed through risk assessment and prioritised action plans

With

- New 'tools' and guidance to encourage rapid risk identification and decision making

Free guidance



Some figures



- 2 million people exposed to noise at work which may be harmful
- 500,000 with hearing loss due to noise at work
- About 5 million exposed to HAV at work
- About 1 million exposed above ELV
- Greatest numbers in construction industry and related trades but highest levels in Foundries, stone masons and heavy fabrication.

Risk Assessment



- Assessment of risks to health and safety arising from the noise and HAV
- Purpose: to identify what needs to be done to reduce risks (Action Plans)
- Necessary when Exposure Action Values likely to be exceeded
- Should contain assessment of exposure
 - Not necessarily highly precise
 - Reliable assessment based on representative data

Risk Assessment



- Can be very simple
 - Do I have tools/machines/processes known to be noisy or cause HAV?
 - Are people exposed/action values likely to be exceeded?
 - Are industry standard/good practice control measures in place?
- or detailed
 - e.g. for a novel situation or for high exposure



Tools for estimating exposure

- To encourage rapid exposure determination, and risk assessment

Sound pressure level, L_{Aeq} (dB)	Duration of exposure (hours)								Total exposure points	Noise exposure L_{AEP} (dB)
	1/4	1/2	1	2	4	8	10	12		
105	330	165	110						330	105
100	660	330	220						660	100
97	990	495	330	165					990	97
95	1320	660	440	220	110				1320	95
94	1650	825	550	275	137.5				1650	94
93	1980	990	660	330	165	82.5			1980	93
92	2310	1155	770	385	192.5	96.25			2310	92
91	2640	1320	880	440	220	110	55		2640	91
90	2970	1485	990	495	247.5	123.75	61.875		2970	90
89	3300	1650	1100	550	275	137.5	68.75		3300	89
88	3630	1815	1210	605	302.5	151.25	75.625		3630	88
87	3960	1980	1320	660	330	165	82.5		3960	87
86	4290	2145	1430	715	357.5	176.875	89.375		4290	86
85	4620	2310	1540	770	385	192.5	96.25		4620	85
84	4950	2475	1650	825	412.5	206.25	103.125		4950	84
83	5280	2640	1760	880	440	220	110		5280	83
82	5610	2805	1870	935	467.5	233.75	116.875		5610	82
81	5940	2970	1980	990	495	247.5	123.75		5940	81
80	6270	3135	2090	1045	522.5	261.875	130.625		6270	80
79	6600	3300	2200	1100	550	275	137.5		6600	79
78	6930	3465	2310	1155	577.5	289.375	144.375		6930	78
77	7260	3630	2420	1210	605	302.5	151.25		7260	77



Tools for estimating exposure

- Spreadsheets on the web

Exposure Calculator

Job or process	Noise Level L_{Aeq} (dB)	Exposure time (hours)	Exposure points
Job or process 1			
Job or process 2			
Job or process 3			
Job or process 4			
Job or process 5			
Job or process 6			
Job or process 7			
Job or process 8			
(Total time)		0	
			dB

Instructions for exposure calculator

Enter vibration magnitudes and exposure durations in the white areas. To calculate, press the Enter key, or move the cursor to a different cell. The results are displayed in the yellow areas. To clear all cells, click on the Reset button. For more information, click the HSE link below.

HAND-ARM VIBRATION EXPOSURE CALCULATOR Version 3

	Vibration magnitude a_{wv} (m/s ²)	Exposure points per level	Time to reach ELV 2.5 m/s ² A (h)	Time to reach ELV 5 m/s ² A (h)	Exposure duration hours (minutes)	Partial exposure a_{wv} (A (h))	Partial exposure points
Total or process 1	2	8	12	36	>24	0.1	2
Total or process 2	6	72	3	23	5	1.5	36
Total or process 3	3.5	21	4	5	16	1.5	37
Total or process 4							
Total or process 5							
Total or process 6							
Daily exposure						2.2	75
Total exposure points							

Instructions for use:

Enter vibration magnitudes and exposure durations in the white areas. To calculate, press the Enter key, or move the cursor to a different cell. The results are displayed in the yellow areas. To clear all cells, click on the Reset button. For more information, click the HSE link below.

Reset

Worker Idea for Control



Summary : What you need to do to control Noise and HAV.



- **A**ssess risks to develop an action plans
- **I**nvestigate and implement good practice and industry standards for control of noise and HAV
- **P**rioritise higher risk cases with a programme of elimination and control measures