

Noise Exposure Assessment of Risk

June 2020

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Exposure Limits

The level at which employers must provide hearing protection and hearing protection zones is 85 decibels (daily or weekly average exposure) and the level at which employers must assess the risk to workers' health and provide them with information and training is now 80 decibels

Calculation of Exposure

The exposure of Technicians to the effects of using vibrating equipment is based on;


- a comprehensive survey of the daily use of each type of equipment,
- the use of noise emission values given by the machinery suppliers and
- the combined effect calculated using the HSE online tool.

Equipment	Noise dB	Daily Use Frequency x minutes	Daily Exposure (individual tools) dBA	Daily Exposure (total) dBA	Exposure Points Total	Ear Protection Required
Residential Crews						
110v hammer drill	93	4 x 5mins = 20mins	79	85	71	
Grinding disk	97	1 x 15mins = 15mins	1.2			
Cordless drill	91	5 x 5mins = 25mins	78			
Civils Crews						
Wacker Plate	128	2 x 15mins = 30mins	116	116	124704	
Note: Crews work in two man teams. The Technician using the Wacker Plate is prohibited from using the Stihl Saw, Combi Drill or Elephants Foot tamper the same day						
Stihl Saw	109	2 x 10mins = 20mins	79	110	32301	
Combi Drill	87	1 x 10mins = 10mins	70			
Elephants Foot Tamper	125	2 x 5mins = 10mins	108			

It can be seen from this analysis that even though Residential Crews are exposed to the least levels of noise, all persons working for or on behalf of MAP Group (UK) Ltd must wear appropriate ear protection.

It should also be noted that the attenuation levels of the hearing protection required by Civils Crews should be significantly higher than for Residential Crews

Residential Crews – Cumulative Exposure




You can enter data in the white cells only

Exposure Calculator				
	Noise Level (L _{Aeq} dB)	Exposure duration (hours)	Exposure points (job/task)	Exposure points per hour
Job / task 1	93	0.33	26	79
Job / task 2	97	0.25	50	198
Job / task 3	91	0.42	21	50
Job / task 4				
Job / task 5				
Job / task 6				
Job / task 7				
Job / task 8				
Total duration		1		
Daily noise exposure (L_{EP,d})		85 dB	97 points	

Note: Exposure points can be used to prioritise noise control. The highest exposure points are given by the jobs, tasks, etc. which make the greatest contributions to daily noise exposure. Therefore, tackling these noise exposures will have the greatest effect on daily noise exposure.

Civils Crews – Wacker Plate




You can enter data in the white cells only

Exposure Calculator				
	Noise Level (L _{Aeq} dB)	Exposure duration (hours)	Exposure points (job/task)	Exposure points per hour
Job / task 1	128	0.5	124704	249408
Job / task 2				
Job / task 3				
Job / task 4				
Job / task 5				
Job / task 6				
Job / task 7				
Job / task 8				
Total duration		0.5		
Daily noise exposure (L_{EP,d})		116 dB	124704 points	

Note: Exposure points can be used to prioritise noise control. The highest exposure points are given by the jobs, tasks, etc. which make the greatest contributions to daily noise exposure. Therefore, tackling these noise exposures will have the greatest effect on daily noise exposure.

Civils Crews (ex wacker plate) Cumulative Exposure



You can enter data in the white cells only

Exposure Calculator				
	Noise Level (L _{Aeq} dB)	Exposure duration (hours)	Exposure points (job/task)	Exposure points per hour
Job / task 1	109	0.333	1046	3140
Job / task 2	87	0.25	5	20
Job / task 3	125	0.25	31250	125000
Job / task 4				
Job / task 5				
Job / task 6				
Job / task 7				
Job / task 8				
Total duration		0.833		
Daily noise exposure (L_{EP,d})		110 dB	32301 points	

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