

Hand Arm Vibration- Using HAVI Manager

Medical studies have shown that regular and frequent exposure to hand and arm vibration can lead to permanent health effects. There is a wide range of conditions that can develop due to exposure to vibration and these are collectively known as Hand Arm Vibration Syndrome (HAVS). This is often referred to as vibration white finger and other specific diseases such as carpal tunnel syndrome may develop. HAVS has become a major concern in the construction industry where there is frequent use of hand held vibrating power tools such as breakers, compactors, hammer drills etc.

Why we're the Trusted Partner

- Proactive initiatives and interest in protecting all employees
- Effective, simple and practical solutions
- All our operatives keep below the 100 points 'Exposure Action Level'
- Compliance with The Control of Vibration at Work Regulations 2005
- Auditable records that we keep our workers safe



Cause and effect of excess exposure to vibration

Assessing Safety and Controlling Risk

Interserve Project Services protects employees using the principles of prevention and protection. This means hazards are avoided at source, so hand-held mechanical methods are last resort. However, residual activities require operatives to use percussive or other vibration tools. Risk assessment showed it necessary to protect the employees from excess exposure, so we required a system to record and monitor the actual exposure, so it could be controlled. We selected the HAVI Manager control system for this.

HAVI Manager Control System

We purchased the HAVI Manager full Hand Arm Vibration compliance system.

We trained key operatives, including the Storekeeper, on Hand Arm Vibration Syndrome and how to use the vibration monitoring and control system (HAVI manager).

Vibration details or magnitude for all vibrating power tools on site were obtained from manufacture's records and recorded on a spreadsheet to make the information readily available.

The Storekeeper kept the records so operatives could log the trigger times as they collected and returned tools to the store.

All vibrating power tools were colour tagged to indicate the risk level (Red, Amber, Green).

Up to 2.5 m/s² - Green Low Risk
 2.5 to 5.0 m/s² - Yellow Medium Risk
 Over 5.0 m/s² - Red High Risk



HAVI Manager Kit: comprising software CD, log books, 6no Havi Units & 6no tough cases, all for approx £500.

For further Information, contact Frank Roberts, Valentine Khumalo, Colin Best, Rob O'Regan.

PROJECT: Riverside STW - Upgrade and Sludge Digestion Projects
CLIENT: Thames Water Utilities Ltd
VALUE: £64m

Using HAVI Trigger Timer

HAVI units are attached with strap belts to the hand held power tools and they beep and flash to give warning sign indicating Exposure Limit Value (ELV) has been met. At this point the worker is not to use any vibrating tool.

The vibration magnitude is set each day for each medium & high risk equipment and periodically for low risk equipment.

Every operative keeps 'Hand Arm Vibration' exposure records, noting tools used and associated trigger times for the day. The form is filled in at tool collection and return. These records are monitored to ensure that the action and exposure limits are not exceeded. If action level is reached then remedial actions are taken such as to review and change the work schedule or job rotation to reduce exposure duration.



HAVI Manager attached to mechanical saw

Hand Arm Vibration Records Analysis

There are two types of analysis methods: 'exposure points' and 'exposure value'. 'Exposure value' method is limited to analyse use of only single tool use in a day. Interserve operatives will often use more than one power tool a day thus Interserve use the 'exposure points' system.

There are two values to monitor against and take action or stop work accordingly:

- the exposure action value (2.5 m/s² A(8)) is equivalent to 100 points
- the exposure limit value (5 m/s² A(8)) is equivalent to 400 points

Example record

The total exposure points are compared with the exposure action value (EAV) (100) and the exposure limit value (ELV) (400). In this example, total daily exposure was 31 points and this is below the EAV and the ELV. No action needed to be taken at this time.

We have found that the actual trigger time recorded is significantly less than the work time, so all our operatives are keeping below the 100 points action level.

HAND-ARM VIBRATION EXPOSURE RECORD													
Operatives Name: JOHN SCAFFOLDER										Week ending: 11-02-2011			
Contract: Riverside STW Upgrade										Contract no: BE 83139			
Equipment / Process:	AP2 GRINDER CUTTING STEEL		Equipment / Process:	SDS DRILL DRILLING CONCRETE		Equipment / Process:	PETROL SAW CUTTING CONCRETE		Equipment / Process:				
Vibration magnitude:	7.0		Vibration magnitude:	15		Vibration magnitude:	4.2		Vibration magnitude:				
Time to reach EAV:			Time to reach EAV:			Time to reach EAV:			Time to reach EAV:				
Time to reach ELV:			Time to reach ELV:			Time to reach ELV:			Time to reach ELV:				
Exposure duration		Partial exposure points	Exposure duration		Partial exposure points	Exposure duration		Partial exposure points	Exposure duration		Partial exposure points	Daily exposure	
hours	minutes	points	hours	minutes	points	hours	minutes	points	hours	minutes	points	m/s ² A(8)	points
Monday		11:59	19		1:18	8		7:40	4				
Tuesday													
Wednesday													
Thursday													
Friday													
Saturday													
Sunday													

Hand Arm Vibration Exposure Calculator download at:

<http://www.hse.gov.uk/vibration/hav/hav.xls>

HAND-ARM VIBRATION EXPOSURE CALCULATOR										Version 3 June 2005	
Tool or process	Vibration magnitude m/s ² r.m.s.	Exposure points per hour	Time to reach EAV 2.5 m/s ² A(8)		Time to reach ELV 5 m/s ² A(8)		Exposure duration		Partial exposure m/s ² A(8)	Partial exposure points	
			hours	minutes	hours	minutes	hours	minutes			
Tool or process 1	7	98	1	1	4	5		11:59	1.1	19	
Tool or process 2	15	450	0	13	0	53		1:18	0.7	9	
Tool or process 3	4.2	35	2	50	11	20		7.4	0.5	4	
Tool or process 4											
Tool or process 5											
Tool or process 6											
Instructions for use:									Daily exposure m/s ² A(8)	Total exposure points	
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 HELP tab below.									1.4	32	
<input type="button" value="Reset"/>											