

# IMPERIAL

## **Control of Vibration - Code of Practice**

Imperial Property Division

Version: V2

Date: December 2024

Historic reference code: CSM13

### **Introduction**

This Code of Practice (COP) details Imperial's approach to complying with the Control of Vibrations at Work Regulations 2005 (the vibrations regulations) in relation to construction projects which generate vibrations. The regulation focuses on the elimination and the control of vibration exposure.

Excessive exposure to tools that create high levels of vibrations can lead to permanent damage, including Hard-Arm Vibration Syndrome (HAVS) and Carpal Tunnel Syndrome (CTS). HAVS is an irreversible condition which can be disabling for those affected by it. Eliminating and reducing exposure to vibrations is the most effective and efficient way of reducing the risk of individuals developing HAVS.

This policy ensures that individuals are not exposed to vibrations levels that exceed legal limits or manufacturers guidelines. By eliminating exposure and where this is not possible, implementing engineering controls, such as remote-controlled mechanical aids, to reduce vibration exposure as much as possible. With the implementation of Personal Protective Equipment (PPE) as a last resort.

## COP

Imperial will implement a hierarchy of control during the design and construction process to eliminate or control the exposure to vibrations at work.

- **Reviewing designs** to eliminate works which may create vibrations where possible. For example, leaving and reusing, or designing around existing concrete walls, floors and plant bases.
- **Design options** that reduce the vibration hazard when elimination is not possible. For instance, limiting the quantity of demolition needed to achieve the brief, and providing the best available plant and equipment that produces less vibration and mechanical work.
- **Maintenance of equipment** to avoid increased vibration caused by faults or general wear, for example ensuring cutting tools remain sharp.
- Advising operatives that the Vibration Regulations set an Exposure Action Value (EAV) and an Exposure Limit Value (ELV) based on vibration at the grip points and the duration of exposure. The values are:
  - A daily EAV of  $2.5 \text{ m/s}^2 \text{ A(8)}$ , indicating a risk requiring management.
  - A daily ELV of  $5 \text{ m/s}^2 \text{ A(8)}$ , representing a high risk beyond which exposure should be avoided.

Steps supervisors can take to control vibrations on site:

1. **Identify and assess risks** – understand equipment ratings, explore alternatives, and create a control hierarchy to focus on the highest risks. Conduct risk assessments and implement vibration-reducing measures before work begins, involving operatives in discussions.
2. **Monitor and control** – oversee both work and health surveillance, documenting via Daily Activity Briefings.
3. **Education** – Ensure that all operatives understand the reasons for control measures, symptoms of exposure, and provide protection, along with information, instructions and supervision as needed.

Imperial requires evidence of these controls on site where vibration cannot be eliminated, and tools/equipment are used.

Health surveillance is required when exposure is at or above the EAV, or in cases where exposure continues after a HAVS diagnosis but is below EAV. It may involve a brief questionnaire until symptoms are reported. A health surveillance programme, such as Constructing Better Health (CHB), must include access to a qualified occupational physician.

- Receive comprehensive feedback, including fitness for work assessments related to HAV exposure.
- Be informed of employee's health status and their fitness to work
- Be notified of any new or worsening HAVS cases

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- Ensure employee information is shared only with their consent.

HAVs and CTS cases must be reported under RIDDOR 2013. Health surveillance reports enable timely action to adjust controls, helping maintain workforce health and prevent further disability.

Health records, including health surveillance outcomes and fitness for work status, should be kept up to date and separate from confidential medical results.

All contractors must have a suitable occupational health scheme, such as Constructing Better Health (CBH), and a corresponding policy. Occupational health schemes must be offered to all supply chain partners. Registration with CBH for supply chain partners and the self-employed fulfils, the client's requirements.

Vibration control monitoring will occur during the Client's regular RAG Health and Safety inspections. Any policy breaches will be addressed with the Site Manager to ensure timely corrective action.

## Appendix 1

### Control Measures

### Example image

For vibration activities, we will expect to see, as a minimum, fully informed RAMS, that note the type of equipment being used and the daily maximum trigger times highlighted. We will expect the operatives to be fully aware of their RAMS, the control measures to be used and the trigger times for the equipment being used.

**HAND-ARM VIBRATION EXPOSURE CALCULATOR** Version 4.3 January 2014

Tool or process name	Vibration magnitude m/s <sup>2</sup> r.m.s.	Exposure points per hour	Time to reach EAV 2.5 m/s <sup>2</sup> A (8)		Time to reach ELV 5 m/s <sup>2</sup> A (8)		Exposure duration hours   minutes	Partial exposure m/s <sup>2</sup> A (8)	Partial exposure points
			hours	minutes	hours	minutes			
Tool or process 1									
Tool or process 2									
Tool or process 3									
Tool or process 4									
Tool or process 5									
Tool or process 6									

☒ Lock Tool or process names

**Instructions for use:**  
 Enter vibration magnitudes and exposure durations in the white areas  
 To calculate, press <Enter>, 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  
 Tick the 'Lock tool or process name' check box to prevent 'Reset' clearing these cells  
 For more information, click the 'Help' button

**Zoom to fit**  
**Help**  
**Reset**

**Daily exposure m/s<sup>2</sup> A (8)**  
**Total exposure points**

It is also important that for health surveillance, any daily exposure is recorded and documented to show the amount of exposure to vibrating equipment.



Drilling 100mm depth 40N/mm <sup>2</sup> Concrete	Action Value	Limit Value	HSE Points
VJT 6mm SDS+ Drill Bit	150 holes	620 holes	0.7 per hole
VJT 8mm SDS+ Drill Bit	130 holes	520 holes	0.8 per hole
VJT 10mm SDS+ Drill Bit	100 holes	410 holes	1 per hole
VJT 12mm SDS+ Drill Bit	94 holes	370 holes	1.1 per hole
VJT 14mm SDS+ Drill Bit	66 holes	260 holes	1.6 per hole
VJT 16mm SDS+ Drill Bit	47 holes	180 holes	2.2 per hole

**General information for this machine**

Tool Weight	Sound Pressure	ISO 5349 Vibration Magnitude	Trigger Time to the Daily Action Value	Trigger Time to the Daily Limit Value	HSE Points per Minute
2.8 kg	87 dB(A)	14.5 m/s <sup>2</sup>	14 min	57 min	7

HAVi meters are simple to use. It clips to the tool using cable ties or a fabric strap. Supervisors then need to input the magnitude of the equipment being used. Supervisors will then brief the operator of the tool on how it is to be used and how the HAVi meter works. When the operator begins work the HAVi meter will display the accurate trigger time. As the time



elapses the monitor will convert the data to display the actual HSE exposure calculator points that are accumulating over time when using the equipment. Once the work with the tool is complete, the operative will advise their Supervisor who will record the exposure information in the onsite logbook, before moving on to the next tool. As per HSE guidelines, if an operator exceeds 100 HSE points in one day the device triggers a warning light that flashes amber to advise the operator to take a break. The light will turn red advising the operator to stop if the critical 400 HSE points band is exceeded in any one day.

The daily maximum trigger time allowed must be controlled by the Supervisor. If a trigger time is 4 hours but the task will take 6 hours to complete, the Supervisor should ensure that more than 1 operative is used to complete the task.

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