**FQM LIMITED**

**XXX-OP-004**

**Hand Arm Vibration Syndrome**

1. **PURPOSE**

The purpose of this procedure is to ensure there are procedures and practices in place, at all [COMPANY NAME] sites that limit personal exposure to vibration that has the potential to cause harm to employees and to keep that exposure to within acceptable limits.

1. **SCOPE**

This procedure applies to all sites owned and managed by [COMPANY NAME] . It applies to all [COMPANY NAME] employees while carrying out work tasks involving vibratory equipment on those sites or carrying out work involving vibratory equipment at off-site locations.

1. **INTRODUCTION**

This document describes DMS procedures for controlling employee exposure to work-place activities which are known to contribute to the development of Hand Arm Vibration Syndrome (HAVS).

1. **RESPONSIBILITIES**
* **HSE Manager/H&S Advisors** are responsible for:
* Ensuring that this procedure is maintained and communicated to all relevant DMS personnel.
* Ensuring by means of induction, signage and information, that all employees are aware of HAV prevention methods at all [COMPANY NAME] sites.
* Understanding HAVS control measures.
* Ensuring adequate information, instruction and training are provided to work personnel about the hazards of HAVS and how to reduce the risks.
* The set-up of regular occupational health HAVS monitoring for all workshop-based employees.
* **Operations Managers** are responsible for:
	+ Ensuring this procedure is implemented and adhered to at their site.
	+ Ensuring that supervisory staff under their control are familiar with their duties described in this procedure.
* **Site Foremen/Chargehands** are responsible for:
* Ensuring all personnel on site under their supervision are following correct procedures and instructions.
* Ensuring all personnel on site under their supervision are operation all vibratory equipment in line with correct safe systems of work and manufactures guidelines.
* **All employees** are required to:
* Comply with correct working procedures and instructions.
* Use all vibratory equipment in line with correct safe systems of work and manufacturers guidelines.
1. **DEFINITIONS**

**Hand / Arm Vibration Syndrome (HAVS)**

HAVS is a group of diseases caused by exposure of the hand to vibration. The best known of these is Vibration White Finger that is caused by damage to blood circulation. Other damage may be to the nerves and muscles of the fingers and hands, causing numbness and tingling, reduced grip, strength and sensitivity.

**Vibration White Finger (VWF)**

Vibration White Finger, a condition (loss of sensation) is caused by working with vibrating equipment.

**Equipment**

There are numerous different types of hand-held power tools and equipment that can cause ill health from vibration. Some of the more common ones are drills, grinders, chipping hammers, Cengar saws and needle guns.

1. **PROCEDURE**
	1. **Risk Assessment**

The person undertaking the risk assessment should have a good knowledge of the work processes used in the business and be able to collect and understand the relevant information. They should also be able to develop a plan of action based on their findings and ensure it is introduced and effective. They will need to:

* Make a list of equipment that may cause vibration, and what sort of work it is used for.
* Collect information about the equipment from equipment handbooks (make, model, power, vibration risks, vibration information, etc).
* Make a list of employees who use the vibrating equipment and which jobs they do.
* Note as accurately as possible how long employees’ hands are actually in contact with the equipment while it is vibrating – in some cases this ‘trigger time’ may only be a few minutes in several hours of work with the equipment.
* Ask employees which equipment seems to have high vibration and about any other problems they may have in using it, e.g. its weight, awkward postures needed to use the tool, difficulty in holding and operating it.
* Record the relevant information they have collected and their assessment of who is likely to be at risk.
	1. **Exposure values**

The exposure action value (EAV) is a daily amount of vibration exposure above which action is required to control exposure.

For hand-arm vibration the EAV is a daily exposure of 2.5 m/s2 A(8).

The exposure limit value (ELV) is the maximum amount of vibration an employee may be exposed to on any single day. It represents a high risk above which employees should not be exposed.

For hand-arm vibration the ELV is a daily exposure of 5 m/s2 A(8).

The exposure limit value must not be exceeded, and the Control of Vibration Regulations 2005 must be complied with. It should be verified that all reasonably practicable actions have been taken, to reduce potential exposure.

* 1. **HSE Exposure points system and ready-reckoner**

Suitable vibration data from the equipment handbook, or from the equipment supplier can be used to calculate exposure values. The HSE also provide examples of vibration levels measured on equipment in use.

If the manufacturer’s vibration data is used, it must be confirmed that it represents the way the equipment is used since some data may underestimate workplace vibration levels substantially. If the manufacturer’s data is reasonably representative of the way the equipment it used, it will be suitable for use in estimating exposure. However, if the only information available is the vibration emission declared in the equipment’s handbook, it should be confirmed before using it for estimating daily exposures.

Check, by observation and monitoring, how long employees are exposed to the vibration.

If the employee is exposed to vibration from more than one tool or work process during a typical day, information on likely vibration level and ‘trigger time’ for each one should be collected.

* Once the relevant vibration data and exposure times have been collected an exposure calculator should be used to assess each employee’s daily exposure.
* Alternatively, the assessor can use the simple ‘exposure points’ system in the Table on page 4 to estimate the daily exposure, also provided by the HSE.

The table below is a ‘ready-reckoner’ for calculating daily vibration exposures and uses, the vibration magnitude (level) and exposure time. The ready-reckoner covers a range of vibration magnitudes up to 40 m/s2 and a range of exposure times up to 10 hours.

The exposures for different combinations of vibration magnitude and exposure time are given in exposure points instead of values in m/s2 A(8). The assessor may find the exposure points easier to work with than the A(8) values:

* Exposure points change simply with time: twice the exposure time, twice the number of points.
* Exposure points can be added together, for example where a worker is exposed to two or more different sources of vibration in a day.
* The exposure action value (2.5 m/s2 A(8)) is equal to 100 points.
* The exposure limit value (5 m/s2 A(8)) is equal to 400 points.



Using the HSE ready-reckoner.

* Find the vibration magnitude (level) for the tool or process (or the nearest value) on the grey scale on the left of the table.
* Find the exposure time (or the nearest value) on the grey scale across the bottom of the table.
* Find the value in the table that lines up with the magnitude and time. The illustration shows how it works for a magnitude of 5 m/s2 and an exposure time of 3 hours: in this case the exposure corresponds to 150 points.
* Compare the points value with the exposure action and limit values (100 and 400 points respectively).
* In this example the score of 150 points lies above the exposure action value.
* The colour of the square containing the exposure points value tells you whether the exposure exceeds, or is likely to exceed, the exposure action or limit value:



* If a worker is exposed to more than one tool or process during the day, repeat steps 1 – 3 for each one, add the points, and compare the total with the exposure action value (100) and the exposure limit value (400).
	1. **Risk Control**

Risk controls include:

* Alternative work methods.
* Mechanising or automating the work.
* Selecting the tool with the lowest vibration that is suitable and can do the work efficiently.
* Changing the design of workstations to minimise loads on employees’ hands, wrists and arms caused by poor posture.
* Using devices such as jigs and suspension systems to reduce the need to grip heavy tools tightly.

Reducing exposure:

* Limiting the use of high-vibration tools wherever possible.
* Limiting the time that employees are exposed to vibration.
* Planning work to avoid individuals being exposed to vibration for long, continuous periods – several shorter periods are preferable.
* Where tools require continual or frequent use, introducing employee rotas to limit exposure.
* Introducing appropriate and auditable maintenance programs for equipment.

Regular checks that the program of controls introduced is being carried out should be completed

* 1. **Personal Protective Equipment (PPE)**

PPE may be worn although it is made clear that there is no effective PPE for protection against vibration. Wearing gloves in order to keep your hands and joints warm is recommended.

* 1. **HAVS Exposure Recording**

A suitable HAVS Exposure Recording system is implemented, such as a word table or an excel spreadsheet. Many systems are electronic and data can be downloaded with exposure information, the exposure information is collected via regular on and off site vibration analysis.

* 1. **Training**

Suitable training and information will be provided to all employees prior to using any vibratory equipment on site. The training programmes should be arranged such that new employees are trained and refresher training is provided every year and highlighted in toolbox talks from time to time for existing employees.

Online HAVS training and instruction to IOSH standard will be provided to all employees on an annual basis and records of this will be kept and be available for inspection if required.

* 1. **Manufacturers and Suppliers**

Tool and machine manufacturers and suppliers are obliged to design equipment which will reduce vibration risks to as low a level as possible, making use of the latest technology. The equipment should be CE-marked to show that it complies with these requirements, and health and safety information should be provided in an instruction book. This should include:

* Warnings about any vibration-related risk from using the equipment;
* Information on safe use and, where necessary, training requirements;
* Information on how to maintain the equipment;
* A statement of the vibration emission (or a statement that the vibration test has produced a vibration emission of less than 2.5 m/s2)
	1. **Measurement Processes**

Vibration measurement for individual equipment should be carried out as accurately as possible, using the HSE and industry recognised best practice when determining the methodology for carrying out measurements. This can be electronic or a paper-based system.

* 1. **Health Surveillance**

A HAVS Health Surveillance programme will be regularly undertaken for all workshop based DMS employees. Initially by means of a questionnaire assessed by our occupation health provider and those employees that require further surveillance and assessment will then be referred to the provider for secondary treatment and diagnosis.

**7.0 REVIEW**

This procedure will be reviewed regularly, at a minimum on a yearly basis, at the annual management meeting. Additional review maybe required due to changes in legislation, operations, technology, personnel etc.