

## Introduction

This sheet is produced to provide guidance on Hand Arm Vibration and it outlines the measures which should be taken to control the risks associated with the use of vibratory tools and equipment in a typical foundry. It is aimed at employers, employees, and their representatives.

## Background and scale

Hand-arm vibration syndrome (HAVS) is a group of diseases caused by exposure of the hands to vibration. The best known of these is 'Vibration White Finger' (VWF) which is caused by the effects of vibration on the body's circulation. Another example is 'Carpal Tunnel Syndrome' which is caused by compression of the nerves in the wrist.

HAVS is a reportable disease under the Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDOR) Regulations 2013.

Annually there are in excess of 10,000 claims lodged with company insurers for ill health associated with hand arm vibration. Claims can result in payments of up to £30000.

## Who is at risk?

HAVS usually arises from finger or hand contact with either a powered tool or material being held against a moving surface e.g. a pedestal grinder. Users of rotating or percussive hand-guided tools where there may be exposure to high levels of vibration are at greatest risk.

## Where in foundries is it a problem?

There are several areas or processes in the foundry where there may be an increased risk of HAVS. They include manual moulding, fettling, knock-out, dressing, finishing and furnace relining. This is because of the use of a wide range of powered tools including chipping hammers, picks, impact hammers, hand-held grinders, pedestal grinders, liners and rotary de-burring tools.

## What you need to do to comply

### Risk assessment

To help you decide what you need to do, start by assessing the risks from vibration within your foundry. Do you carry out any of the processes mentioned above in your foundry? If the answer is yes you should identify all of the relevant processes and tasks in your foundry that pose a vibration risk and carry out a more detailed risk assessment. You must record the findings of the risk assessment.

A sample risk assessment can be found at [Appendix 1](#)

## Vibration exposure

Vibration exposure describes the level of vibration to which the individual is exposed and the length of time of that exposure.

The overall level of risk depends on:

- Vibration exposure
- Whether tool use is intermittent or continuous
- Workplace temperature
- Individual susceptibility
- The method of work
- The ergonomics of the task
- The abrasive media being used

If the assessment you carry out indicates that the risks from HAVS are not adequately controlled, you will need to take measures such as those below to eliminate or reduce those risks.

## Management controls

You should have a vibration policy which details all of the measures you are taking to reduce the risk of HAVS within the foundry. It should include details of the all of the following.

## Elimination/Engineering

There are various ways in which the use of vibratory tools in the foundry can be eliminated. They include:

- Altering casting design to allow runner/feeders systems to be either easily broken off or removed using automated equipment
- Reducing the amount of flash through improved pattern making and mould build and strength
- Using auto push out systems for furnaces, crucibles and ladles where possible
- Using automated equipment where possible for wrecking out

## Reduction of vibration exposure

Where the use of vibratory tools cannot be eliminated you should do everything you can do reduce the vibration exposure of your employees.

## Tool selection and care

When selecting new tools, information should be sought from the suppliers about the vibration levels their tools produce. A policy to only purchase low vibration tools should be put in place.

Maintenance and inspection programmes should be in place so that the tools are routinely checked for wear and repaired/adjusted as required. Where a tool cannot be repaired it should be withdrawn from use and a replacement purchased.

When using tools, employees should be told how to put them down correctly when they have finished working with them. Tool holders where the tool can be stored safely while they come to a stop are a good idea.

Where pedestal grinders are used you should consider the use of jigs to hold the work piece against the grinding wheel.

The correct grinding wheel should be selected which can reduce vibration levels, noise and dust.

### Training employees

The individual work techniques used by employees to operate powered hand tools can affect the extent to which vibration is absorbed by the hands. It is therefore essential that all employees who use powered tools are made aware of what HAVS is, and are trained in the necessary precautions to reduce the risks. This includes how to correctly hold and use the tools, keeping the hands warm while working, exercising the fingers periodically during the working day to encourage blood flow through the fingers, reporting defective tools and reporting any symptoms of whiteness, numbness or tingling in the fingers to their supervisor.

A breakdown of what suitable training should cover can be found at [Appendix 2](#).

A presentation which can be used as a Tool Box talk to aid training can be found on the SHIFT website.

### Monitoring and supervision

You need to carry out regular checks to make sure that all of your controls are working as they should be to reduce the risk of HAVS. This will include:

- Supervising workers to make sure they are using controls properly and following procedures
- Checks on maintenance records to make sure tools are being maintained when they should be
- Review of the risk assessment if anything changes

### Health surveillance

Health surveillance is about detecting work-related ill health at an early stage and acting on the results. The aims are to check the long-term effectiveness of control measures and to safeguard the health of employees (including identifying and protecting people at increased risk).

When carrying out work where there is a significant risk of HAVS, a programme of occupational health surveillance will be required under the Management of Health and Safety at Work Regulations 1999.

Go to the HSE website HAVS page

<http://www.hse.gov.uk/vibration/hav/index.htm> for advice on health surveillance.

### Further reading and information

- Control of Vibration at Work Regulations 2005
- Control of Noise at Work Regulations 2005
- Control of Substances Hazardous to Health Regulations 2002
- Workplace (Health, Safety & Welfare) Regulations 1992
- Provision & Use of Work Equipment Regulations 1998
- Manual Handling Operations Regulations 1992
- Management of Health and Safety at Work Regulations 1999
- Personal Protective Equipment at Work Regulations 1992
- Electricity at Work Regulations 1989
- HSE Hand Arm Vibration web pages at: <http://www.hse.gov.uk/vibration/hav/index.htm>
- HSE Noise at work web pages at: <http://www.hse.gov.uk/noise/index.htm>
- HSE Work Equipment web pages at: <http://www.hse.gov.uk/work-equipment-machinery/index.htm>
- HSE Risk management and assessment web pages at: <http://www.hse.gov.uk/risk/index.htm>

This information sheet is one of a series of information sheets developed by the Castings Health and Safety Advisory Committee (CHASAC).

The guidance may go further than the minimum you need to do to comply with the law.