HSPS02-CONTROL OF VIBRATION AT WORK

Health, Safety and Wellbeing Team

PLYMOUTH CITY COUNCIL

Contents

1 PURPOSE

The purpose of this document is to;	**Approved by**
	Date
	November 2011
	Edition/Version
	4
	Review Date

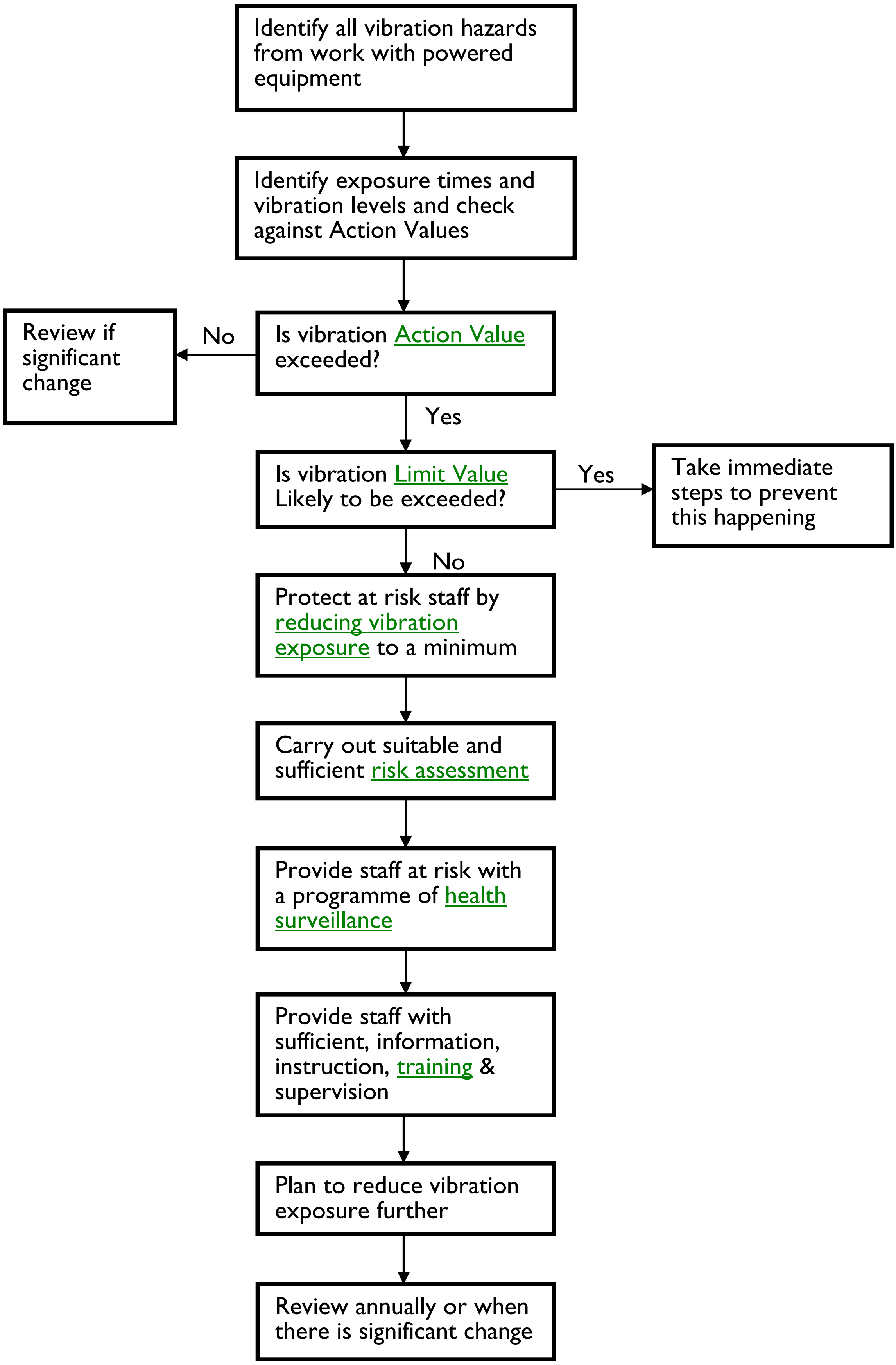
- Ensure early recognition and assessment of the risks to employees and others affected by the Council's undertaking
- Ensure effective communication between management and their staff to raise awareness of the risks when working with hand-held power tools, hand-guided machinery or when holding materials, which are being processed by machinery or where vibration is transmitted into the body, when seated or standing, through the supporting surface, during a work activity
- Establish effective risk assessment and incorporate the process and assessment results into management activities i.e. supervision, performance management, team meeting agendas and other procedures/ management systems
- Where risks are identified, put in place suitable control measures to reduce those risks and establish effective monitoring of control measures
- Set up effective assessment and monitoring systems to evaluate the effectiveness of local arrangements put in place to minimise the risks associated with vibration at work
- Encourage individual responsibility to recognise and inform management of hazards and vibration risks associated with work equipment & tasks.

2 PERFORMANCE STANDARD

Plymouth City Councils' health and safety policies, performance standards and guidance notes should be regarded as the health and safety standard each Department, Service Unit, School and Team is expected to achieve and against which health and safety performance will be monitored and audited.

This Performance Standard links with and supports the Corporate Health and Safety Policy.

Procedural Flow Chart



3 KEY PRINCIPLES/PROCEDURE

3.1 VIBRATION EXPOSURE

Hand-Arm Vibration

Hand-Arm Vibration (HAV) is vibration, which reaches the hands and arms when working with hand-held power tools, hand-guided machinery or when holding materials, which are being processed by machinery. Too much exposure to hand-arm vibration can result in hand arm vibration syndrome HAVS and carpal tunnel syndrome.

Whole Body Vibration

Whole-body vibration is mechanical vibration which is transmitted into the body, when seated or standing, through the supporting surface, during a work activity or exposure in rest facilities supervised by the employer.

3.2 EXPOSURE ACTION VALUE AND LIMIT VALUE

In order to protect your health the Control of Vibration at Work Regulations imposes responsibilities on the Council to ensure that particular measures are taken when personal vibration exposure reaches:

- Exposure Action Value
- Exposure Limit Value.

Guidance on the actions to be taken can be found Here.

Values

For hand arm vibration the daily exposure Limit Value is $5m/s^2A(8)$

The daily exposure Limit Value is the maximum amount of vibration an employee may be exposed to on any single day; this is equivalent to 400 exposure points on the Exposure Points System and Ready Reckoner, which can be found Here.

The daily exposure Action Value is the level of daily exposure to vibration that when exceeded requires the following actions to be taken:

- A control of vibration risk assessment must be carried out
- Employees and their representatives to be provided with relevant information, instruction and training
- Health Surveillance (initial screening followed by annual questionnaire, on referral health assessment by qualified person).

For hand arm vibration the daily exposure Action Value is $2.5m/s^2A(8)$ equivalent to 100 exposure points on the Exposure Points System and Ready Reckoner.

3.3 OPERATIONAL MANAGEMENT

Personal tolerance to the exposure to vibrating equipment varies between individuals, the Council's commitment is not only to put in place procedures to limit and control excessive exposure to those levels set down by legislation but also to monitor all relevant employees to identify employees with low tolerance levels and to thereby take corrective measures to eliminate long term adverse health effects.

This guidance will be implemented through a number of procedures associated with:

a) Employee pre-employment medical screening
b) Employees education and awareness training
c) Procurement procedures
d) Maintenance procedures
e) Contract procedures
f) Equipment registration and auditing procedures
g) Equipment testing
h) Operational exposure control
i) Regular employee medical control

3.4 RESPONSIBLE PERSONS

Responsible persons must be appointed by departments to manage vibration risk at work. Responsible persons are recommended to seek expert advice in relation to all matters of vibration risk management. Departments must have arrangements in place to ensure these arrangements comply with legislation, policy and best practice.

3.5 RISK ASSESSMENT

The responsible manager will ensure that a suitable and sufficient risk assessment will be carried out that will:

- identify vibration risks e.g. associated with the use of rotary/percussive tools, that may give rise to exposure that has the potential for harm
- decide who is at risk
- decide if the processes can be changed or managed differently to reduce hand-on contact with equipment with known vibration risks
- decide on the control measures to reduce the risk to the lowest possible level, including purchasing and hiring of new equipment with low vibration magnitude data provided by the supplier
- monitor the effectiveness of the controls in place, including where necessary, the vibration testing of equipment for true magnitude data
- incorporate annual health surveillance of employees who come into contact with vibrating equipment above the action value of 2.5 m/s^2 A(8)
- review and audit the risk assessment annually.

Guidance on carrying out a risk assessment can be found in the Corporate Risk Assessment Health & Safety Performance Standard HSPS01, which can be found on both the Staff Room and School Room, a worked example with control measures can also be found here.

Who should do the Risk Assessment?

It is common for most of the work involved in doing risk assessments to be devolved down the line management chain to staff in service units.
Except in very simple cases, whoever carries out the Control of Vibration at Work risk assessment will need to:

- have received suitable and sufficient training to undertake their duties
- have access to, and understand, the Control of Vibration at Work Regulations 2005 and other legislation/codes of practice/guidance, or to someone else who does
- be able to get all the necessary information and have the knowledge and experience to make correct decisions about the risks and the actions needed
- understand their own limitations, and know where to get help.

4. OPERATIONAL VIBRATION CONTROL

General requirements

Managers will keep a list of all vibratory equipment (e.g rotary & percussive tools) in their workplace. The equipment will be adequately identified with a Hand Arm Vibration Data Tag, which will be colour coded and numbered, relevant to that piece of equipment's vibration magnitude. The Vibration Exposure Points System and Ready Reckoner will be used to assist with the monitoring of staff exposure to hand arm vibration;

Employees who use vibratory equipment will be given a laminated copy of the Vibration Exposure Points System and Ready Reckoner to use whilst conducting their daily operations

Operatives Daily/Weekly Vibration Data Form

Employees will be given a copy of the Operatives Daily/Weekly Data Form to enable the recording and summation of exposure to vibration on different pieces of equipment during the day. The employees will be required by instruction to record each and every period of vibratory exposure on their daily recording sheet and to advise their line manager if they reach the maximum daily exposure before the end of their working day and where continuity of work cannot be achieved by job rotation. If the activity comprises several short bursts these should be tallied to give the overall 'trigger time'.

Employee Responsibilities

Employees will be required to enter their daily points total and sign the Operatives Daily/Weekly Vibration Data Form to confirm that they have not exceeded their maximum daily allowance. Employees should hand in their data form at the end of the working week or Monday morning to the Supervisor/Lead Officer who will record the daily record sheets on to the weekly record sheets. The Service Unit for auditing and reference purposes will keep both record sheets.

Supervisor's Responsibilities

The Supervisor/Lead Officer is responsible for checking on a weekly basis that the daily record sheet is accurate and complete. The Supervisor/Lead Officer will ensure that the total vibration exposure points for the week are transferred to the weekly sheet and the reason for any over exposure recorded. The Supervisor/Lead Officer is responsible for ensuring that the employees' weekly record sheets are regularly reviewed to identify any failures/weaknesses in the Service Areas control measures.

As soon as the Supervisor/Lead Officer becomes aware that the Exposure Limit Value is likely to be exceeded, immediate measures should be taken to ensure that the operatives' exposure remains below this level.

It will be the supervisor's responsibility to ensure that daily vibration exposure is monitored through an assessment of:

- the task being undertaken
- the risk of using vibrating equipment.

Use of other mechanical means and processes will be evaluated before the task commences and, job rotation will be also be a consideration wherever possible.

4.1 EQUIPMENT REGISTERS AND AUDITING

Departments and Service Units will put in place an equipment register that identifies all items of equipment with the potential to give rise to excessive vibration in normal use. This register will identify the equipment by type, manufacturer, model and serial number. Further data relating to actual measured vibration levels and exposure times will also be recorded where they are available. It is essential that all departments ensure that a thorough audit of equipment is prepared and maintained.

4.2 EQUIPMENT TESTING

Departments and Service Units will identify equipment in use with vibration levels at or above $2.5m/s^2$ by means of;

- use of the manufacturer's vibration data
- observing the equipment when in operation.

If an employee is showing symptoms associated with vibration exposure e.g. Vibration White Finger (VWF), the responsible person will ensure, wherever possible, that the identified equipment is tested to ascertain its true vibration magnitude.

Manufacturers test data can be used to inform risk assessments but may not represent the true vibration magnitude readings and should only be used as a guide. If an employee shows or complains of symptoms of HAVS then the department will be required to have equipment tested or serviced and tested by a competent person. Vibration testing can be arranged through the Health, Safety and Wellbeing Team.

4.3 POTENTIALLY HAZARDOUS TASKS

The following are examples of processes and equipment where there may be a risk of developing HAVS:

- percussive tools used in road maintenance, construction, etc. (i.e. power hammers, vibratory compactors, concrete breakers, road drills)
- grinders and other rotary tools (i.e. hand-held grinders, hand-held sanders, pedestal grinders, rotary burring tools); and
- timber and wood machining tools (i.e. chainsaws, brush cutters, hand-held or hand-fed circular saws, powered mowers and shears, strimmers).

The above list is not exhaustive. It is safest to regard regular prolonged use of any high-vibration tool or machine as suspect, especially if it causes tingling or numbness in the user's fingers after about 10-15 minutes continuous operation.

4.4 PRE-EMPLOYMENT SCREENING

Plymouth City Council will identify all activities where exposure to vibrating equipment may arise and assess the risk to employees, structures & instrumentation where there is the potential for exposure to excessive vibration. New applicants working within these areas will be screened by Occupational Health for symptoms of Hand Arm Vibration or other medical conditions, which may restrict or prohibit work with vibrating equipment prior to employment.

Advice from the Council's occupational health provider will be considered when making offers of employment. Where appropriate all practical adjustments will be made to accommodate any restrictions identified.

4.5 HEALTH SURVEILLANCE

The responsible manager should ensure that a health surveillance programme is in place for all employees identified as being at significant risk from hand arm vibration in the workplace. For existing employees this can be arranged by Management referral through the Council's Occupational Health Provider. The health surveillance will include regular health checks and enable any symptoms to be assessed and appropriate information to be given to individuals regarding further exposure to vibration. Employees must report any further assessment by the Occupational Health Provider to their manager/supervisor.

Vulnerable Employees – Hand-Arm Vibration Syndrome
Employees who through medical screening have been identified as having symptoms of HAVS or other medical conditions, which may give a predisposition to the disease, may have extra restrictions (identified through risk assessment) with regard to exposure placed upon them. All such employees will be individually consulted and instructed on levels of exposure and control measures.

4.6 EDUCATION AND AWARENESS TRAINING

The responsible manager will ensure that all employees affected receive suitable and sufficient information, instruction and training. As a minimum, employees working with equipment identified as subjecting the operative to vibration exposure above the Action Value would be expected to attend a control of vibration at work toolbox talk delivered by the Health, Safety and Wellbeing Team or other competent training provider (this could be the supervisor providing they have the experience and training to give the talk). Employees engaged on works which may involve significant exposure to vibration should fully understand:

1. The risks associated with exposure to vibration.
2. The symptoms associated with the onset and progression of the disease.
3. The effect of external factors at the onset and development of the disease (cold, smoking, diabetes, other circulatory inhibitors and diseases).
4. What action to take if they are suffering from any symptoms of the disease.
5. The systems for notifying the Council of any event, which could or does give rise to the risk of excessive vibration, or of any medical condition, which appears to support a diagnosis of a vibration-induced condition.
6. The Council's procedure for identifying the vibration levels and daily exposure times for all equipment to which they have access.
7. The Council's procedures for monitoring daily exposure to vibration.
8. The importance of ensuring that staff do not exceed the maximum daily exposure levels.
9. The significance of the procedures put in place to minimise the risk to staff, including their own obligations with regard to control measures in place (including but not limited to time sheets to confirm that they have not exceeded the maximum daily exposure levels).

In addition each Department or Service Unit will identify a manager with overall responsibility for the implementation of these procedures. The manager will be responsible for ensuring that all operatives are adequately trained and that appropriate records (including risk assessments), procurement and testing procedures are in place.

Managers/supervisory staff will undertake the necessary training required to fulfill the requirements of this performance standard. Some managers may require more training than others but the basic requirements are laid down below:-

- Basic introduction to Risk Assessment and
- Control of Vibration at Work for Managers/Supervisors.

In the first instance contact the Council's Learning and Development Service on extension 8880. Should training not be available in house adequate training can be provided through attendance of a hand arm vibration training course run by a competent training provider backed by local toolbox talks specific to the service area (Contact: health&safety@plymouth.gov.uk)

4.7 PROCUREMENT PROCEDURES

Departments and Service Units will seek to hire or procure equipment with the lowest possible vibration levels that are fit for the purpose or task being undertaken and represent best practice and value for money. Wherever possible Department Service Units will standardise on one type of equipment to simplify the process of determining vibration levels, vibration auditing and equipment identification by employees.

4.8 MAINTENANCE PROCEDURES

Departments and Service Units will ensure that all equipment they operate is properly maintained and, that employees are advised on the need to inspect all equipment including any specific checks needed to manage the risk of vibration prior to use and note, report and repair or replace any equipment which demonstrates excessive and abnormal vibration in regular use. Records of inspections should be recorded and retained in a safe and readily accessible place.

4.9 CONTRACT PROCEDURES

Departments and Service Units procuring work by contract from external service providers will ensure that contractors' health and safety procedures include adequate procedures for protection from excessive exposure to vibration and that this is a requirement of the Contract. The Council will put in place measures to audit the Contractors compliance.

5. SYMPTOMS

What is Hand-Arm Vibration Syndrome (HAVS)?

Hand-Arm Vibration Syndrome (HAVS) is a widespread industrial disease. The Health and Safety Executive (HSE) estimate that over 1 million people are exposed to high levels of vibration and over 36,000 people are believed to be suffering from the advanced stages of Vibration-induced White Finger (VWF), which is the most common effect of the syndrome. The attacks are painful and can result in the loss of the ability to grip properly. Further information on VWF and related conditions can be found at:

http://www.nhs.uk/Conditions/Raynauds-phenomenon/Pages/Causes.aspx

What is Carpal Tunnel Syndrome?

Carpal tunnel syndrome is a nerve disorder which may involve pain, tingling, numbness and weakness in parts of the hand, and can be caused by, among other things, exposure to vibration.

Further information can be found at:

http://www.nhs.uk/conditions/carpal-tunnel-syndrome/Pages/Whatisitfinal.aspx

Vibration White Finger

The first noticeable symptoms may occur sometime after regular exposure to vibration has begun. In the early stages, improvement may occur when the worker gives up activities associated with vibration, particularly at a younger age. In the later stages, however, the condition is likely to become permanent.

What are the early signs and symptoms to look out for?
First stages of vibration injury

- Tingling or 'pins and needles' and numbness in the fingers (noticeable at end of day, can cause sleep disturbance).

Continued exposure

- Periodic attacks in which the fingers become 'white' when exposed to the cold
- During mild attacks, the whiteness and numbness only affect the tips of the fingers
- Advanced condition, whole finger down to the knuckles becomes white
- Severe cases, blood circulation permanently impaired, fingers take on blue black appearance.

HAVS is a reportable disease under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) and managers should contact the Health Safety and Wellbeing Team as soon as they are aware of any occurrence within the workforce.

5 FURTHER INFORMATION, FORMS AND GUIDANCE

Forms	Relevant legislation
Vibration Points System & Ready Reckoner	The Control of Vibration at Work Regulations 2005 Guidance L1440 Health and Safety at Work etc. Act 1974 Management of Health and Safety at Work: The Management of Health and Safety at Work Regulations 1999 Approved Code of Practice L21 Safe Use of Work Equipment: The Provision and Use of Work Equipment Regulations 1998 Personal Protective Equipment at Work (Second edition) Personal Protective Equipment at Work Regulations 1992 (as amended) The Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations (RIDDOR) 1995 Guidance L73 The Access to Health Records Act 1990
Other Guidance	
The Health and Safety Executive (HSE) website www.hse.gov.uk contains useful general and topic-specific guidance, much of which can be downloaded free of charge. Corporate Health & Safety Policy Risk Assessment HSPS01 Vibration Risk Assessment example Equality Impact Assessment Health, Safety and Wellbeing - Glossary of Terms	Health, Safety and Wellbeing Team Human Resources and Organisational Development Plymouth City Council Civic Centre Plymouth PL1 2AA Tel: 01752 312523 Fax: 01752 304900 Email: healthandsafty@plymouth.gov.uk Occupational Health Guide