Quarries National Joint Advisory Committee (QNJAC)

Occupational Health

Information Sheet 7

October 2012

Whole Body Vibration

This information sheet has been developed by the Quarries National Joint Advisory Committee (QNJAC) to help quarry operators, contractors, managers and others make health and safety improvements in the quarry industry. This guidance represents good practice which may go further than the minimum you need to do to comply with the law

Approved by the Quarries National Joint Advisory Committee (QNJAC)

(Version 2: 10/02/2014)

Target Zero Occupational Health Information Sheet No 7: Whole Body Vibration at Work

Legal Requirements:

The Control of Vibration at Work Regulations 2005
Guidance on these regulations can be downloaded from the HSE website or ordered with the following reference ISBN 978 0 7176 61251.

The Control of Vibration at Work Regs 2005 place a duty on employers for controlling exposure to vibration for employees, commonly called HAV (Hand-arm Vibration) and WBV (Whole Body Vibration)

This Information sheet deals with Whole Body Vibration – see Information sheet 8 for Hand Arm Vibration

The exposure levels as specified in the regulations are summarised as follows:

WBV (Whole Body Vibration)

Daily exposure action value EAV = 0.5 m/s^2 A(8)
Daily exposure limit value ELV = 1.15 m/s^2 A(8)

The EAV is the level of daily exposure to vibration above which you are required to take certain actions to reduce exposure.

The ELV is the maximum amount of vibration an employee may be exposed to on any single day.

The Regulations require control of risk from vibration whether over or under the EAV

Why should you read this guidance:

Vibration caused by shocks and jolts from driving vehicles, mobile plant and fixed plant such as crushers, can lead to severe back pain and vibration may affect the ability to handle controls or read indicators.

Prolonged and regular exposure to vibration can significantly affect the worker's health. However the risks from vibration can be controlled by assessing the risks and developing a plan to control them.

Health Surveillance is not appropriate for exposure to WBV as no methods exist to detect changes in peoples' backs. Health Monitoring of exposed employees, such as asking them to report any symptoms and monitoring symptoms, however, can be very useful in assessing the need for any action. Health

monitoring is not a legal requirement under the regulations.

To comply with 'The Control of Vibration at Work Regulations 2005' an employer should:

- Assess the risk to employees from exposure to vibration
- Take action to eliminate or minimise exposure that creates the risk of ill health
- Make sure that the legal limits on exposure to vibration are not exceeded
- Provide employees with information and training that includes safe driving methods
- Provide employees with safe exposure limits for vehicles and mobile plant.

There is a potential for vibration-induced ill health which may also result in personal injury claims being made against the employer.

Employers have a responsibility to both employees and other persons affected by the work being carried out, eg from using your vehicles, mobile plant and fixed plant to protect them from the effects of vibration at work.

Paybacks/Benefits to the business:

- Effective risk management of the workforce regarding risks to their health from exposure to vibration.
- No long term ill health issues for the employee.
- Vehicles and plant that is 'fit for purpose'.
- Improved performance from the workforce.
- Less fatigue experienced by the workforce.
- Removes the risk of injury claims. Potential reduction to employee liability insurance premiums.

Guidance currently available:

The HSE Web site offers guidance, some of which can be downloaded for free including:

- Whole-Body Vibration The Control of Vibration at Work Regulations 2005 – guidance to the regulations L141: http://www.hse.gov.uk/pubns/books/l141.htm

Useful contacts:

HSE Web site; http://www.hse.gov.uk/vibration
Contact details for HSE books; 01787 881165
Safe Quarry Webb site http://www.safequarry.com

MPA Webb site http://www.mineralproducts.org specifically the guide to good health

Table of typical exposures and actions:

Group 1: WBV Unlikely to be a risk	**Group 2**: You must manager Exposure to WBV	**Group 3**: WBV is a likely cause of back pain	**Group 4**: You must restrict exposure to WBV
• Workstations on rock crushers • Drilling rig operations	• Excavators more than about 25t • Road haulage vehicles such as 8 wheeled tipper trucks • Mobile crushers (subject to evaluation)	• Excavators less than about 25t • Rigid dumpers • Wheeled loading shovels used in stock areas • Telescopic handlers • Wheeled loading shovels used at the face • Articulated dumpers used on roadways with substantially flat surfaces • Graders	• Dozers – especially ripping • Articulated dumpers working on surfaces causing body roll and creating high roll in the cab • Scrapers

Group 1: WBV unlikely to be a risk

Exposure is likely to be below the EAV (0.5 m/s^2 A(8)) with no significant shocks
Low-cost vibration-reduction measures and management of WBV will reduce maintenance and the likelihood of back pain

Group 2: You must manage exposure to WBV

Exposures are likely to exceed the EAV (0.5 m/s^2 A(8)) on at least some days, but shocks are expected to be small
The risk of back pain from WBV is likely to be low and back pain is more likely to be caused by other factors.
You must have low-cost vibration-reduction and management controls in place, but costly or difficult measures are unlikely to be reasonably practicable.

Group 3: WBV is a likely cause of back pain

Exposures are likely to be much higher than the EAV and/or contain large shocks
You must have effective engineering and management controls.
Health monitoring is recommended to confirm that the risk from WBV is under control.

Group 4: You must restrict exposure to WBV

To comply with the ELV (1.15 m/s^2 restrict how long people are exposed to WBV).

Current Practice available in the industry:

Good practice to eliminate or reduce exposure, as far as is reasonably practicable, using good management control for WBV includes:

General

- Having a purchasing and replacement policy for vehicles, mobile plant and fixed plant including the evaluation of exposure to WBV.
- Regular planned preventive maintenance of fixed and mobile plant.

For Mobile Plant

- Ensuring mobile plant is regularly serviced, especially shock absorbers, cab mountings, tyres and seats.
- Checking, lubricating and maintaining seat, cab and chassis suspensions as recommended by manufacturers. (It is likely that a seat may need replacing several times during the life of the machine.)
- Ensuring that the operator of mobile plant knows how to adjust the seat correctly.
- Ensuring haul roads are regularly inspected, maintained and graded.
- Ensuring that tyres are correctly inflated and are the correct type for the task.
- Ensuring that the speed limits set are appropriate for the road conditions

For Processing Plant

- Ensuring fixed plant is isolated where applicable from sources of vibration, for example by the use of rubber anti-vibration mounts.
- Utilising remote plant control cabins away from the vibration source.

Key Performance indicators to consider:

- Vibration assessments up to date in line with company policy?
- Does the assessment reflect accurately the conditions on your site?
- Have you implemented vibration control measures to reduce exposure to WBV?
- Are you maintaining the vibration control measures?
- Percentage of “at risk” population that have received training in the control of WBV.

This information sheet has been produced by the QNJAC Target Zero Occupational Health Working Group. It has been approved by the Quarries National Joint Advisory Committee (v2 date 10/02/2014).