



Shake, Rattle and Roll

The Control of Vibration at Work Regulations 2005

The Control of Vibration at Work Regulations came into force on 6 July 2005. They were implemented in the UK as the harmonized European requirements, set out in EU Directive 2002/44/EC2 (the Physical Agents (Vibration) Directive), concerning Control of Risks from Vibration in the Workplace.

Principal requirements:

The Regulations require action from employers in 4 main areas:-

- Evaluation of risk from vibration including assessment and, if necessary, measurement of exposure.
- A programme of technical and/or organisational measures to minimize exposures and the attendant risks.
- Information and training for vibration exposed workers.
- Appropriate health surveillance.

Hand Arm Vibration

HAVS Hand Arm Vibration Syndrome (HAVS) is the generic term used to describe a variety of injuries incurred to the hands and arms caused through excessive exposure to vibration. (a.k.a Vibration White Finger, Secondary Raynaud's Syndrome).

Cause Hand Arm Vibration Syndrome can be developed through the repeated use of hand held vibrating tools, regularly holding, or working with equipment that vibrates.

Effects Bluish discoloration (cyanosis) of the skin of fingers and hands. Whitening (blanching) of fingertips after cold or damp exposure (known as Raynaud's phenomenon). Numbness, with or without tingling, happens before, during or after blanching. Attacks, more common in winter, eventually may occur year round. Sense of touch and pain perception reduced, sometimes permanently.

Whole Body Vibration

WBVS Exposure to Whole Body Vibration Syndrome (WBVS) is attributed to vibrations transmitted to the body through the supporting surfaces such as the feet, buttocks or back.

Cause Standing or sitting on a vibrating platform, floor surface or construction.

Driving a vehicle used:
- on road, rail, sea and in the air
- in industry
- off road (e.g. tractors)

Effects *Short Term:* Back pain, abdominal pain or general feeling of discomfort, including headaches, chest pain, nausea and loss of balance.

Long Term: Disc displacement, degenerative spinal changes, lumbar scoliosis, degenerative disorders of the spine and disorders of the gastrointestinal system.

Exposure Limit Values (ELV) and Exposure Action Values (EAV)

Hand Arm vibration

- (a) the daily exposure limit value is $5 \text{ m/s}^2 \text{ A}(8)$
- (b) the daily exposure action value is $2.5 \text{ m/s}^2 \text{ A}(8)$

Whole Body vibration

- (a) the daily exposure limit value is $1.15 \text{ m/s}^2 \text{ A}(8)$
- (b) the daily exposure action value is $0.5 \text{ m/s}^2 \text{ A}(8)$

Where the vibration acceleration level is quantified in m/s^2 and $\text{A}(8)$ relates to the daily vibration exposure (8 hours).



Q What do the Regulations introduce?

The Regulations introduce:

- exposure limits and action values
- suitable and sufficient risk assessment by employers and where there is a risk to health; health surveillance
- suitable and sufficient training for employees and their representatives
- control measures in order to eliminate vibration at source (where this is not possible an exposure action level is introduced)
- reduction of vibration exposure level to as low a level as is reasonably practicable.

Q What do the EAV and ELV figures indicate?

In the case of HAV, when using low vibration emission rotary tools, the EAV can be exceeded within only 1 hour and the ELV within 4 hours. This indicates the importance of good quality tools, and how easily the limits can be exceeded.

Q What is the impact on the industry?

Research has shown that around five million workers are exposed to HAV in the U.K. workplace.



Two million of these workers are exposed to levels of vibration, with clear risks of disease.

There is an average of 3,000 claims per year for Industrial Injury Disability Benefit for HAVS.

Q Is the suggested Exposure Action Level a safe level to work?

There are no established safe levels for vibration exposure and as such, the EAV does not constitute a safe exposure level. Vibration levels should be as low as possible.

Q Can manufacturer's declared vibration emissions be used?

Manufacturer's declared emissions are not likely to be reliable. Generally manufacturer's data is based on laboratory tests and not on actual use (vibration levels can be much higher during actual use). Laboratory test data should be used to ascertain which tools will produce the lowest levels of vibration.

Q Could only one employee be assessed and similar levels assumed for the entire workforce?

The individual susceptibility to the effects of vibration depends on factors such as:-

- the exposure length
- the way the equipment is held
- the frequency of work breaks and
- the working temperature

An individual case file, as part of a Risk Assessment, should be kept and periodically updated for every employee who is subject to vibration at work.

Q How often do vibration levels need to be measured?

The sharpness, balance and wear of blades/seats/suspensions/cutting edges produce different vibration readings. In terms of keeping an updated Risk Assessment, periodic testing every year should be undertaken in order to monitor the changes in magnitude.

Q Can anti-vibration gloves be used to prevent HAVS?

Anti-vibration gloves are generally not effective in reducing the amount of vibration transmitted to the hands and arms. However, gloves may help prevent vibration injury by keeping the hands warm and dry when environmental conditions are cold and damp.

The employer was already legislatively required to prevent HAVS and WBVS injuries.

The new Regulations introduce additional explicit duties.

New avenues for breach of statutory duty are available to employees who are making a claim.

Employers, who wish to avoid claims, will need to undertake Risk Assessments which are suitable and sufficient.

Frequent field testing is advised as part of the technical information required within the Risk Assessments.



Hann Tucker Associates, the leading independent UK acoustic consultancy can provide the necessary professional advice and assistance in assessing vibration at work to achieve compliance with the proposed Control of Vibration at Work Regulations 2005.

By using specialist knowledge and dedicated state of the art equipment, Hann Tucker Associates is able to undertake the required on site vibration measurements in accordance with BS EN ISO 5349-2:2002 and BS EN 14253:2003 as required by the Control of Vibration at Work Regulations 2005.



Hann Tucker Associates

Consultants in Acoustics Noise & Vibration Control

Head Office: Duke House 1-2 Duke Street Woking Surrey GU21 5BA
Tel: 01483 770595 Fax: 01483 729565
Email: Enquiries@hanntucker.co.uk

Northern Office: 82 King Street Manchester M2 4WQ
Tel: 0161 935 8337 Fax: 0161 832 8075
Email: Enquiries@hanntucker.co.uk