

Vibration exposure assessment for industrial power tools



A pocket guide based
on the Physical Agents
(Vibration) Directive
(Directive 2002/44/EC)

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1. Introduction



For the first time the European Union will have a unified approach towards vibration exposure.

In July 2002 the European Union published the Directive 2002/44/EC the Physical Agents (Vibration) Directive (PA(V)D). It outlines new guidelines for exposure to vibration in the workplace. It sets action and limit values for vibration exposure and it describes the employer's obligations to manage the risk from exposure to vibration. The national regulations based on The Directive shall be in force since July 6 2005.

This booklet is intended as a guide for the employer who has employees using vibrating hand-held power tools. It explains what is covered by the national regulations following the PA(V)D, with the UK and Sweden as examples. We explain what is meant by the different requirements. We give guidance in assessing the in-use vibration and how exposure time can be estimated. We also give practical tips regarding what can be done to reduce vibration exposure from hand-held power tools.

Hand-arm vibrations are regarded as a serious work-related disorder. The Physical Agents (Vibration) Directive is intended to introduce into national regulations controls which aim to reduce ill health caused by exposure to hand-arm vibration and reduce costs for sick-leave and workers' compensation.



Vibration induced white fingers and/or nerve damage are serious work related disorders.

The Physical Agents (Vibration) Directive was developed from an original proposal made by the European Commission in 1993. This proposal was revised, amended and eventually agreed by Member States and the European Parliament and came into force on 6 July 2002.

The Directive lays down the minimum standards for the health and safety of workers exposed to hand-arm vibration and supports the general requirements for improving health and safety that are outlined in the Framework Directive (89/391/EEC).

How severe is the problem? The following estimate is made in the proposal for the UK Regulation. HAV stands for Hand-Arm Vibration and HAVS means Hand-Arm Vibration Syndrome.

“ Some 5 million people in Britain are regularly exposed to HAV through their work activities. It is estimated that as many as 2 million of these are at risk of developing diseases caused by exposure to HAV. A survey published in 1999 estimated that around 800,000 people in Britain had some symptoms of vibration white finger (a form of HAVS) linked to HAV exposure at work. Of these, some 300,000 were estimated to have advanced symptoms of the disease. These figures emphasise the need for industry to redouble its efforts to improve control of these risks. ”

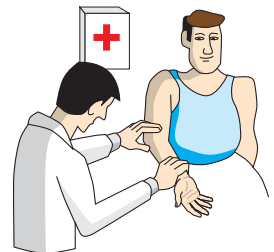
The Directive specifically requires employers, where there is likely to be a risk from exposure to vibration, to:

- a. Reduce exposure to a minimum (Article 5.1)
- b. Assess risks (Article 4.1)
- c. Carry out a programme of measures to reduce risks (Article 5.2)
- d. Keep exposure below the exposure limit value (Article 5.3)
- e. Provide information and training on the risks and their control (Article 6)
- f. Provide appropriate health surveillance when exposure reaches the exposure action value (Article 8)

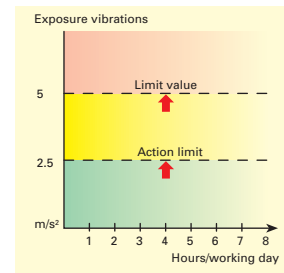
Exposure action and limit values are introduced. The action value is set to 2.5 m/s² and the limit value to 5 m/s². Both values are A(8) values meaning they are average values over the 8h working day. These values should not be confused with the declared vibration values given for all tools. The difference will be fully explained later in this document.



The employer will have a responsibility to inform and train his employees on risks and their control.



Employees exposed above the action value should be provided appropriate health surveillance.



The directive is introducing two values for A(8). The action value is 2.5 m/s² and the limit value is 5 m/s².