

**DIRECTIVE 2002/44/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 25 June 2002**

**on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) (sixteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 137(2) thereof,

Having regard to the proposal from the Commission<sup>(1)</sup>, submitted after consultation with the Advisory Committee on Safety, Hygiene and Health Protection at Work,

Having regard to the opinion of the Economic and Social Committee<sup>(2)</sup>,

Having consulted the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>(3)</sup>, in the light of the joint text approved by the Conciliation Committee on 8 April 2002,

Whereas:

- (1) Under the Treaty the Council may, by means of directives, adopt minimum requirements for encouraging improvements, especially in the working environment, to guarantee a better level of protection of the health and safety of workers. Such directives are to avoid imposing administrative, financial and legal constraints in a way which would hold back the creation and development of small and medium-sized undertakings.
- (2) The communication from the Commission concerning its action programme relating to the implementation of the Community Charter of the Fundamental Social Rights of Workers provides for the introduction of minimum health and safety requirements regarding the exposure of workers to the risks caused by physical agents. In September 1990 the European Parliament adopted a resolution concerning this action programme<sup>(4)</sup>, inviting the Commission in particular to draw up a specific directive on the risks caused by noise and vibration and by any other physical agent at the workplace.
- (3) As a first step, it is considered necessary to introduce measures protecting workers from the risks arising from vibrations owing to their effects on the health and safety of workers, in particular muscular/bone structure, neurological and vascular disorders. These measures are intended not only to ensure the health and safety of each worker on an individual basis, but also to create a

minimum basis of protection for all Community workers in order to avoid possible distortions of competition.

- (4) This Directive lays down minimum requirements, thus giving Member States the option of maintaining or adopting more favourable provisions for the protection of workers, in particular the fixing of lower values for the daily action value or the daily exposure limit value for vibrations. The implementation of this Directive should not serve to justify any regression in relation to the situation which already prevails in each Member State.
- (5) A system of protection against vibration must limit itself to a definition, free of excessive detail, of the objectives to be attained, the principles to be observed and the fundamental values to be used, in order to enable Member States to apply the minimum requirements in an equivalent manner.
- (6) The level of exposure to vibration can be more effectively reduced by incorporating preventive measures into the design of work stations and places of work and by selecting work equipment, procedures and methods so as to give priority to reducing the risks at source. Provisions relating to work equipment and methods thus contribute to the protection of the workers involved.
- (7) Employers should make adjustments in the light of technical progress and scientific knowledge regarding risks related to exposure to vibration, with a view to improving the safety and health protection of workers.
- (8) In the case of sea and air transport, given the current state of the art it is not possible to comply in all circumstances with the exposure limit values for whole-body vibration; provision should therefore be made for duly justified exemptions in some cases.
- (9) Since this Directive is an individual Directive within the meaning of Article 16(1) of Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work<sup>(5)</sup>, that Directive therefore applies to the exposure of workers to vibration, without prejudice to more stringent and/or specific provisions contained in this Directive.
- (10) This Directive constitutes a practical step towards creating the social dimension of the internal market.

<sup>(1)</sup> OJ C 77, 18.3.1993, p. 12.

OJ C 230, 19.8.1994, p. 3.

<sup>(2)</sup> OJ C 249, 13.9.1993, p. 28.

<sup>(3)</sup> Opinion of the European Parliament of 20 April 1994 (OJ C 128, 9.5.1994, p. 146) confirmed on 16 September 1999 (OJ C 54, 25.2.2000, p. 75), Council Common Position of 25 June 2001 (OJ C 301, 26.10.2001, p. 1) and Decision of the European Parliament of 23 October 2001 (not yet published in the Official Journal). Decision of the European Parliament of 25 April 2002 and Council Decision of 21 May 2002.

<sup>(4)</sup> OJ C 260, 15.10.1990, p. 167.

<sup>(5)</sup> OJ L 183, 29.6.1989, p. 1.

(11) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission <sup>(1)</sup>,

HAVE ADOPTED THIS DIRECTIVE:

#### SECTION I

### GENERAL PROVISIONS

#### Article 1

#### Aim and scope

1. This Directive, which is the 16th individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC, lays down minimum requirements for the protection of workers from risks to their health and safety arising or likely to arise from exposure to mechanical vibration.

2. The requirements of this Directive shall apply to activities in which workers are or are likely to be exposed to risks from mechanical vibration during their work.

3. Directive 89/391/EEC shall apply fully to the whole area referred to in paragraph 1, without prejudice to more stringent and/or more specific provisions contained in this Directive.

#### Article 2

#### Definitions

For the purposes of this Directive, the following terms shall mean:

- (a) 'hand-arm vibration': the mechanical vibration that, when transmitted to the human hand-arm system, entails risks to the health and safety of workers, in particular vascular, bone or joint, neurological or muscular disorders;
- (b) 'whole-body vibration': the mechanical vibration that, when transmitted to the whole body, entails risks to the health and safety of workers, in particular lower-back morbidity and trauma of the spine.

#### Article 3

#### Exposure limit values and action values

- 1. For hand-arm vibration:
  - (a) the daily exposure limit value standardised to an eight-hour reference period shall be 5 m/s<sup>2</sup>;
  - (b) the daily exposure action value standardised to an eight-hour reference period shall be 2,5 m/s<sup>2</sup>.

Workers' exposure to hand-arm vibration shall be assessed or measured on the basis of the provisions of Point 1 of Part A of the Annex.

2. For whole-body vibration:

- (a) the daily exposure limit value standardised to an eight-hour reference period shall be 1,15 m/s<sup>2</sup> or, at the choice of the Member State concerned, a vibration dose value of 21 m/s<sup>1,75</sup>;
- (b) the daily exposure action value standardised to an eight-hour reference period shall be 0,5 m/s<sup>2</sup> or, at the choice of the Member State concerned, a vibration dose value of 9,1 m/s<sup>1,75</sup>.

Workers' exposure to whole-body vibration shall be assessed or measured on the basis of the provisions of Point 1 of Part B of the Annex.

#### SECTION II

### OBLIGATION OF EMPLOYERS

#### Article 4

#### Determination and assessment of risks

1. In carrying out the obligations laid down in Article 6(3) and Article 9(1) of Directive 89/391/EEC, the employer shall assess and, if necessary, measure the levels of mechanical vibration to which workers are exposed. Measurement shall be carried out in accordance with Point 2 of Part A or Point 2 of Part B of the Annex to this Directive, as appropriate.

2. The level of exposure to mechanical vibration may be assessed by means of observation of specific working practices and reference to relevant information on the probable magnitude of the vibration corresponding to the equipment or the types of equipment used in the particular conditions of use, including such information provided by the manufacturer of the equipment. That operation shall be distinguished from measurement, which requires the use of specific apparatus and appropriate methodology.

3. The assessment and measurement referred to in paragraph 1 shall be planned and carried out by competent services at suitable intervals, taking particular account of the provisions of Article 7 of Directive 89/391/EEC concerning the necessary competent services or persons. The data obtained from the assessment and/or measurement of the level of exposure to mechanical vibration shall be preserved in a suitable form so as to permit consultation at a later stage.

4. Pursuant to Article 6(3) of Directive 89/391/EEC, the employer shall give particular attention, when carrying out the risk assessment, to the following:

- (a) the level, type and duration of exposure, including any exposure to intermittent vibration or repeated shocks;
- (b) the exposure limit values and the exposure action values laid down in Article 3 of this Directive;
- (c) any effects concerning the health and safety of workers at particularly sensitive risk;
- (d) any indirect effects on worker safety resulting from interactions between mechanical vibration and the workplace or other work equipment;

<sup>(1)</sup> OJ L 184, 17.7.1999, p. 23.

- (e) information provided by the manufacturers of work equipment in accordance with the relevant Community Directives;
- (f) the existence of replacement equipment designed to reduce the levels of exposure to mechanical vibration;
- (g) the extension of exposure to whole-body vibration beyond normal working hours under the employer's responsibility;
- (h) specific working conditions such as low temperatures;
- (i) appropriate information obtained from health surveillance, including published information, as far as possible.

5. The employer shall be in possession of an assessment of the risk in accordance with Article 9(1)(a) of Directive 89/391/EEC and shall identify which measures must be taken in accordance with Articles 5 and 6 of this Directive. The risk assessment shall be recorded on a suitable medium, according to national law and practice; it may include a justification by the employer that the nature and extent of the risks related to mechanical vibration make a further detailed risk assessment unnecessary. The risk assessment shall be kept up-to-date on a regular basis, particularly if there have been significant changes which could render it out-of-date, or when the results of health surveillance show it to be necessary.

#### Article 5

##### Provisions aimed at avoiding or reducing exposure

1. Taking account of technical progress and of the availability of measures to control the risk at source, the risks arising from exposure to mechanical vibration shall be eliminated at their source or reduced to a minimum.

The reduction of such risks shall be based on the general principles of prevention set out in Article 6(2) of Directive 89/391/EEC.

2. On the basis of the risk assessment referred to in Article 4, once the exposure action values laid down in Article 3(1)(b) and (2)(b) are exceeded, the employer shall establish and implement a programme of technical and/or organisational measures intended to reduce to a minimum exposure to mechanical vibration and the attendant risks, taking into account in particular:

- (a) other working methods that require less exposure to mechanical vibration;
- (b) the choice of appropriate work equipment of appropriate ergonomic design and, taking account of the work to be done, producing the least possible vibration;
- (c) the provision of auxiliary equipment that reduces the risk of injuries caused by vibration, such as seats that effectively reduce whole-body vibration and handles which reduce the vibration transmitted to the hand-arm system;
- (d) appropriate maintenance programmes for work equipment, the workplace and workplace systems;
- (e) the design and layout of workplaces and work stations;

- (f) adequate information and training to instruct workers to use work equipment correctly and safely in order to reduce their exposure to mechanical vibration to a minimum;
- (g) limitation of the duration and intensity of the exposure;
- (h) appropriate work schedules with adequate rest periods;
- (i) the provision of clothing to protect exposed workers from cold and damp.

3. In any event, workers shall not be exposed above the exposure limit value.

If, despite the measures taken by the employer to comply with this Directive, the exposure limit value is exceeded, the employer shall take immediate action to reduce exposure below the exposure limit value. He shall identify the reasons why the exposure limit value has been exceeded, and shall amend the protection and prevention measures accordingly in order to prevent it being exceeded again.

4. Pursuant to Article 15 of Directive 89/391/EEC, the employer shall adapt the measures referred to in this Article to the requirements of workers at particular risk.

#### Article 6

##### Worker information and training

Without prejudice to Articles 10 and 12 of Directive 89/391/EEC, the employer shall ensure that workers who are exposed to the risks from mechanical vibration at work and/or their representatives receive information and training relating to the outcome of the risk assessment provided for in Article 4(1) of this Directive, concerning in particular:

- (a) the measures taken to implement this Directive in order to eliminate or reduce to a minimum the risks from mechanical vibration;
- (b) the exposure limit values and the exposure action values;
- (c) the results of the assessment and measurement of the mechanical vibration carried out in accordance with Article 4 of this Directive and the potential injury arising from the work equipment in use;
- (d) why and how to detect and report signs of injury;
- (e) the circumstances in which workers are entitled to health surveillance;
- (f) safe working practices to minimise exposure to mechanical vibration.

#### Article 7

##### Consultation and participation of workers

Consultation and participation of workers and/or of their representatives shall take place in accordance with Article 11 of Directive 89/391/EEC on the matters covered by this Directive.

## SECTION III

## MISCELLANEOUS PROVISIONS

## Article 8

**Health surveillance**

1. Without prejudice to Article 14 of Directive 89/391/EEC, Member States shall adopt provisions to ensure the appropriate health surveillance of workers with reference to the outcome of the risk assessment provided for in Article 4(1) of this Directive where it indicates a risk to their health. Those provisions, including the requirements specified for health records and their availability, shall be introduced in accordance with national laws and/or practice.

Health surveillance, the results of which are taken into account in the application of preventive measures at a specific workplace, shall be intended to prevent and diagnose rapidly any disorder linked with exposure to mechanical vibration. Such surveillance shall be appropriate where:

- the exposure of workers to vibration is such that a link can be established between that exposure and an identifiable illness or harmful effects on health,
- it is probable that the illness or the effects occur in a worker's particular working conditions, and
- there are tested techniques for the detection of the illness or the harmful effects on health.

In any event, workers exposed to mechanical vibration in excess of the values stated in Article 3(1)(b) and (2)(b) shall be entitled to appropriate health surveillance.

2. Member States shall establish arrangements to ensure that, for each worker who undergoes health surveillance in accordance with paragraph 1, individual health records are made and kept up-to-date. Health records shall contain a summary of the results of the health surveillance carried out. They shall be kept in a suitable form so as to permit any consultation at a later date, taking into account any confidentiality.

Copies of the appropriate records shall be supplied to the competent authority on request. The individual worker shall, at his request, have access to the health records relating to him personally.

3. Where, as a result of health surveillance, a worker is found to have an identifiable disease or adverse health effect which is considered by a doctor or occupational health-care professional to be the result of exposure to mechanical vibration at work:

- (a) the worker shall be informed by the doctor or other suitably qualified person of the result which relates to him personally. He shall, in particular, receive information and advice regarding any health surveillance which he should undergo following the end of exposure;
- (b) the employer shall be informed of any significant findings from the health surveillance, taking into account any medical confidentiality.

(c) the employer shall:

- review the risk assessment carried out pursuant to Article 4,
- review the measures provided for to eliminate or reduce risks pursuant to Article 5,
- take into account the advice of the occupational health-care professional or other suitably qualified person or the competent authority in implementing any measures required to eliminate or reduce risk in accordance with Article 5, including the possibility of assigning the worker to alternative work where there is no risk of further exposure, and
- arrange continued health surveillance and provide for a review of the health status of any other worker who has been similarly exposed. In such cases, the competent doctor or occupational health care professional or the competent authority may propose that exposed persons undergo a medical examination.

## Article 9

**Transitional periods**

With regard to implementation of the obligations laid down in Article 5(3), Member States, after consultation of the two sides of industry in accordance with national legislation or practice, shall be entitled to make use of a maximum transitional period of five years from 6 July 2005 where work equipment is used which was given to workers before 6 July 2007 and which does not permit the exposure limit values to be respected, taking into account the latest technical advances and/or the organisational measures taken. With regard to equipment used in the agriculture and forestry sectors, Member States shall be entitled to extend the maximum transitional period by up to four years.

## Article 10

**Derogations**

1. In compliance with the general principles of health and safety protection for workers, Member States may, in the case of sea and air transport, derogate from Article 5(3) in duly justified circumstances with respect to whole-body vibration where, given the state of the art and the specific characteristics of workplaces, it is not possible to comply with the exposure limit value despite the technical and/or organisation measures taken.

2. In a case where the exposure of a worker to mechanical vibration is usually below the exposure action values given in Article 3(1)(b) and (2)(b) but varies markedly from time to time and may occasionally exceed the exposure limit value, Member States may also grant derogations from Article 5(3). However, the exposure value averaged over 40 hours must be less than the exposure limit value and there must be evidence to show that the risks from the pattern of exposure to the work are lower than those from exposure at the exposure limit value.



3. The derogations referred to in paragraphs 1 and 2 shall be granted by Member States after consultation of the two sides of industry in accordance with national laws and practice. Such derogations must be accompanied by conditions which guarantee, taking into account the special circumstances, that the resulting risks are reduced to a minimum and that the workers concerned are subject to increased health surveillance. Such derogations shall be reviewed every four years and withdrawn as soon as the justifying circumstances no longer obtain.

4. Every four years Member States shall forward to the Commission a list of derogations as referred to in paragraphs 1 and 2, indicating the exact reasons and circumstances which made them decide to grant the derogations.

#### Article 11

##### Technical amendments

Amendments to the Annex of a strictly technical nature in line with:

- (a) the adoption of Directives in the field of technical harmonisation and standardisation with regard to the design, building, manufacture or construction of work equipment and/or workplaces;
- (b) technical progress, changes in the most appropriate harmonised European standards or specifications and new findings concerning mechanical vibration;

shall be adopted in accordance with the regulatory procedure laid down in Article 12(2).

#### Article 12

##### Committee

1. The Commission shall be assisted by the Committee referred to in Article 17(2) of Directive 89/391/EEC.

2. Where reference is made to this paragraph, Articles 5 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period referred to in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.

#### SECTION IV

##### FINAL PROVISIONS

#### Article 13

##### Reports

Every five years Member States shall provide a report to the Commission on the practical implementation of this Directive,

indicating the points of view of the two sides of industry. It shall contain a description of best practice for preventing vibrations with a harmful effect on health and of other forms of work organisation, together with the action taken by the Member States to impart knowledge of such best practice.

On the basis of those reports, the Commission shall carry out an overall assessment of the implementation of the Directive, including implementation in the light of research and scientific information, and shall inform the European Parliament, the Council, the Economic and Social Committee and the Advisory Committee on Safety, Hygiene and Health Protection at Work thereof and, if necessary, propose amendments.

#### Article 14

##### Transposition

1. The Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive no later than 6 July 2005. They shall forthwith inform the Commission thereof. They shall also include a list, giving detailed reasons, of the transitional arrangements which the Member States have adopted in accordance with Article 9.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate the provisions of national law which they adopt or have already adopted in the field covered by this Directive to the Commission.

#### Article 15

##### Entry into force

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Communities*.

#### Article 16

##### Addressees

This Directive is addressed to the Member States.

Done at Luxembourg, 25 June 2002.

For the European Parliament

The President

P. COX

For the Council

The President

J. MATAS I PALOU

## ANNEX

## A. HAND-ARM VIBRATION

1. **Assessment of exposure**

The assessment of the level of exposure to hand-arm vibration is based on the calculation of the daily exposure value normalised to an eight-hour reference period A(8), expressed as the square root of the sum of the squares (rms) (total value) of the frequency-weighted acceleration values, determined on the orthogonal axes  $a_{hw_x}$ ,  $a_{hw_y}$ ,  $a_{hw_z}$  as defined in Chapters 4 and 5 and Annex A to ISO standard 5349-1(2001).

The assessment of the level of exposure may be carried out on the basis of an estimate based on information provided by the manufacturers concerning the level of emission from the work equipment used, and based on the observation of specific work practices or on measurement.

2. **Measurement**

When measurement is employed in accordance with Article 4(1):

- (a) the methods used may include sampling, which must be representative of the personal exposure of a worker to the mechanical vibration in question; the methods and apparatus used must be adapted to the particular characteristics of the mechanical vibration to be measured, to ambient factors and to the characteristics of the measuring apparatus, in accordance with ISO standard 5349-2(2001);
- (b) in the case of devices which need to be held with both hands, measurements must be made on each hand. The exposure is determined by reference to the higher value of the two; information for the other hand shall also be given.

3. **Interference**

Article 4(4)(d) will apply, in particular where the mechanical vibration interferes with the proper handling of controls or reading of indicators.

4. **Indirect risks**

Article 4(4)(d) will apply in particular when the mechanical vibration interferes with the stability of structures or the security of joints.

5. **Individual protectors**

Personal protective equipment against hand-arm vibration may contribute to the programme of measures referred to in Article 5(2).

## B. WHOLE-BODY VIBRATION

1. **Assessment of exposure**

The assessment of the level of exposure to vibration is based on the calculation of daily exposure A(8) expressed as equivalent continuous acceleration over an eight-hour period, calculated as the highest (rms) value, or the highest vibration dose value (VDV) of the frequency-weighted accelerations, determined on three orthogonal axes ( $1,4a_{w_x}$ ,  $1,4a_{w_y}$ ,  $a_{w_z}$  for a seated or standing worker) in accordance with Chapters 5, 6 and 7, Annex A and Annex B to ISO standard 2631-1(1997).

The assessment of the level of exposure may be carried out on the basis of an estimate based on information provided by the manufacturers concerning the level of emission from the work equipment used, and based on observation of specific work practices or on measurement.

In the case of maritime shipping, Member States may consider only vibrations of a frequency exceeding 1 Hz.

2. **Measurement**

When measurement is employed in accordance with Article 4(1), the methods used may include sampling, which must be representative of the personal exposure of a worker to the mechanical vibration in question. The methods used must be adapted to the particular characteristics of the mechanical vibration to be measured, to ambient factors and to the characteristics of the measuring apparatus.

3. **Interference**

Article 4(4)(d) will apply, in particular where the mechanical vibration interferes with the proper handling of controls or reading of indicators.

**4. Indirect risks**

Article 4(4)(d) will apply, in particular when the mechanical vibration interferes with the stability of structures or the security of joints.

**5. Extension of exposure**

Article 4(4)(g) will apply, in particular where, owing to the nature of the activity, a worker benefits from the use of rest facilities supervised by the employer; exposure to whole-body vibration in those facilities must be reduced to a level compatible with their purpose and conditions of use, except in cases of '*force majeure*'.

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