
**FACTORIES (CONTROL OF VIBRATION AT WORK)
REGULATIONS 2006**

**Subsidiary
2006/148**

Subsidiary Legislation made under s.58.

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(LN. 2006/148)

7.12.2006

Amending enactments	Relevant current provisions	Commencement date
None		

EU Legislation/International Agreements involved:

Directive 89/391/EEC

Directive 2002/44/EC

ARRANGEMENT OF REGULATIONS

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SCHEDULE 1

Hand-Arm Vibration

SCHEDULE 2

Whole-Body Vibration

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In exercise of the powers conferred upon him by section 58 of the Factories Act and all enabling powers, and to transpose into the law of Gibraltar Council 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 Minister for Employment has made the following Regulations.

Title.

1. These Regulations may be cited as the Factories (Control of Vibration at Work) Regulations 2006.

Interpretation.

2.(1) In these Regulations—

“daily exposure” means the quantity of mechanical vibration to which a worker is exposed during a working day, standardised to an 8-hour reference period, which takes account of the magnitude and duration of the vibration;

“emergency services” include the police, fire, rescue and ambulance services;

“exposure action value” means the level of daily exposure set out in regulation 4 for any worker which, if reached or exceeded, requires specified action to be taken to reduce risk;

“exposure limit value” means the level of daily exposure set out in regulation 4 for any worker which must not be exceeded, save as set out in regulation 6(5);

“hand-arm vibration” means mechanical vibration which when transmitted into the hands and arms during a work activity entails risks to the health and safety of workers in particular vascular, bone, joint, neurological or muscular disorder;

“health surveillance” means assessment of the state of health of an employee, as related to exposure to vibration;

“inspector” means a person appointed in accordance with section 77 of the Factories Act;

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“mechanical vibration” means vibration occurring in a piece of machinery or equipment or in a vehicle as a result of its operation;

“Minister” means the Minister with responsibility for employment;

“risk assessment” means the assessment of risk required by regulation 5;

“whole-body vibration” means mechanical vibration which when transmitted to the whole body during a work activity entails risks to the health and safety of workers, in particular lower-back morbidity and trauma of the spine.

(2) In these Regulations, a reference to an employee being exposed to vibration is a reference to the exposure of that employee to mechanical vibration arising out of or in connection with his work.

Application and transitional provisions.

3.(1) These Regulations apply to activities in which workers are, or are likely to be, exposed to risks from mechanical vibration during their work.

(2) Regulation 6(4) shall not apply until 6th July 2010 where work equipment is used which—

- (a) was first provided to employees prior to 6th July 2007 by any employer; and
- (b) does not permit compliance with the exposure limit values,

but in using such equipment the employer shall take into account the latest technical advances and the organisational measures taken in accordance with regulation 6(2).

(3) Where a duty is placed by these Regulations on an employer in respect of his employees, he shall, so far as is reasonably practicable, be under a like duty in respect of any other person, whether at work or not, who may be affected by the work carried out by the employer except that the duties of the employer—

- (a) under regulation 7 (health surveillance) shall not extend to persons who are not his employees; and
- (b) under regulation 8 (information, instruction and training) shall not extend to persons who are not his employees, unless those persons are on the premises where the work is being carried out.

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(4) These Regulations shall apply to a self-employed person as they apply to an employer and an employee and as if that self-employed person were both an employer and an employee, except that regulation 7 shall not apply to a self-employed person.

Exposure limit values and action values.

4.(1) For 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 $2.5 \text{ m/s}^2 \text{ A}(8)$,

and daily exposure shall be ascertained on the basis set out in Schedule 1 Part I.

(2) For 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 $0.5 \text{ m/s}^2 \text{ A}(8)$,

and daily exposure shall be ascertained on the basis set out in Schedule 2 Part I.

Assessment of the risk to health created by vibration at the workplace.

5.(1) An employer who carries out work which is liable to expose any of his employees to risk from mechanical vibration shall make a suitable and sufficient assessment of the risk created by that work to the health and safety of those employees and the risk assessment shall identify the measures that need to be taken to meet the requirements of these Regulations.

(2) In conducting the risk assessment, the employer may assess daily exposure to mechanical vibration by means of—

- (a) observation of specific working practices; or
- (b) reference to relevant information on the probable level of the vibration corresponding to the equipment used in the particular working conditions, including such information provided by the manufacturer of the equipment; and
- (c) if necessary, measurement of the level of vibration to which his employees are liable to be exposed,

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and the employer shall assess whether any employees are likely to be exposed to vibration at or above an exposure action value or above an exposure limit value.

- (3) The risk assessment shall include consideration by the employer of—
- (a) the level, type and duration of exposure, including any exposure to intermittent vibration or repeated shocks;
 - (b) the effects of exposure to vibration on the health and safety of employees at particular risk from such exposure;
 - (c) any indirect effects on worker safety resulting from interaction between vibration and the workplace or other work equipment, including the proper handling of controls, the reading of indicators, the stability of structures and the security of joints;
 - (d) any information provided by the manufacturers of work equipment;
 - (e) the availability of replacement equipment designed to reduce exposure to mechanical vibration;
 - (f) any extension of exposure at the workplace to whole-body vibration beyond normal working hours under the employer's responsibility, including exposure in rest facilities supervised by the employer;
 - (g) specific working conditions such as low temperatures;
 - (h) appropriate information obtained from health surveillance including, where possible, published information; and
 - (i) the exposure limit values and action values set out in regulation 4.
- (4) The risk assessment shall be reviewed regularly, and forthwith if—
- (a) the results of the health surveillance show it to be necessary; or
 - (b) there has been a significant change in the work to which the assessment relates that could render it out of date,

and where, as a result of the review, changes to the risk assessment are required, those changes shall be made.

- (5) The employer shall record—

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- (a) the significant findings of the risk assessment as soon as is practicable after the risk assessment is made or changed;
- (b) the measures which he has taken and which he intends to take to meet the requirements of regulations 6 and 8; and
- (c) where appropriate, a justification that the nature and extent of the risks related to vibration make a further detailed risk assessment unnecessary.

Elimination or control of exposure to vibration at the workplace.

6.(1) The employer shall ensure that risk from the exposure of his employees to vibration is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable.

(2) Where it is not reasonably practicable to eliminate risk at source pursuant to sub-regulation (1) once an exposure action value is exceeded, the employer shall establish and implement a programme of organisational and/or technical measures intended to reduce to a minimum exposure to mechanical vibration and the attendant risks.

(3) The measures taken by the employer in compliance with sub-regulations (1) and (2) shall be based on the general principles of prevention set out in regulation 3 of the Management of Health and Safety at Work Regulations 1996 and shall include consideration of—

- (a) other working methods which eliminate or reduce exposure to mechanical vibration;
- (b) choice of work equipment of appropriate ergonomic design which, taking account of the work to be done, produces the least possible vibration;
- (c) the provision of auxiliary equipment which reduces the risk of injuries caused by vibration;
- (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 for employees, such that work equipment may be used correctly and safely, in order to minimise their exposure to mechanical vibration;

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- (g) limitation of the duration and level of exposure to vibration;
- (h) appropriate work schedules with adequate rest periods; and
- (i) the provision of clothing to protect employees from cold and damp.

(4) Subject to regulation 3(2) and (3) and sub-regulation (5), the employer shall—

- (a) ensure that his employees are not exposed to vibration above an exposure limit value; or
- (b) if an exposure limit value is exceeded, he shall forthwith—
 - (i) reduce exposure to vibration to below the limit value;
 - (ii) identify the reason for that limit being exceeded; and
 - (iii) modify the measures taken in accordance with sub-regulations (1) and (2) to prevent it being exceeded again.

(5) Sub-regulation (4) shall not apply where the exposure of an employee to vibration is usually below the exposure action value but varies markedly from time to time and may occasionally exceed the exposure limit value, provided that—

- (a) any exposure to vibration averaged over one week is less than the exposure limit value;
- (b) there is evidence to show that the risk from the actual pattern of exposure is less than the corresponding risk from constant exposure at the exposure limit value;
- (c) risk is reduced to as low a level as is reasonably practicable, taking into account the special circumstances; and
- (d) the employees concerned are subject to increased health surveillance, where such surveillance is appropriate within the meaning of regulation 7(2),

and exposure within the meaning of this paragraph shall be ascertained on the basis set out in Schedule 1 Part II for hand-arm vibration and Schedule 2 Part II for whole-body vibration.

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(6) The employer shall adapt any measure taken in compliance with the requirements of this regulation to take account of any employee or group of employees whose health is likely to be particularly at risk from vibration.

Health surveillance.

7.(1) If—

- (a) the risk assessment indicates to an employer that there is a risk to the health of his employees who are, or are liable to be, exposed to vibration; or
- (b) employees are likely to be exposed to mechanical vibration at or above an exposure action value,

the employer shall ensure that such employees are placed under suitable health surveillance, where such surveillance is appropriate within the meaning of sub-regulation (2).

(2) Health surveillance, which shall be intended to prevent or diagnose rapidly any disorder linked with exposure to vibration, shall be appropriate where the exposure of the employee to vibration is such that—

- (a) a link can be established between that exposure and an identifiable illness or harmful effect on health;
- (b) it is probable that the illness or effect may occur under the particular conditions of his work; and
- (c) there are valid techniques for detecting the illness or harmful effect on health.

(3) The employer shall ensure that a health record in respect of each of his employees who undergoes health surveillance in accordance with sub-regulation (1) is made and maintained and that the record contains a summary of the results of the health surveillance carried out, and is kept in a suitable form so as to permit any consultation at a later date, taking into account any confidentiality.

(4) The employer shall—

- (a) on reasonable notice being given, allow an employee access to his personal health record; and
- (b) provide the enforcing authority with copies of such health records as it may require.

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(5) Where, as a result of health surveillance, an employee is found to have an identifiable disease or adverse health effect which is considered by a doctor or other occupational health-care professional to be the result of exposure to mechanical vibration at work the employer of that employee shall—

- (a) ensure that a suitably qualified person informs the employee accordingly and provides the employee with information and advice regarding further health surveillance, including any health surveillance which he should undergo following the end of the exposure;
- (b) ensure that he is himself informed of any significant findings from the employee's health surveillance, taking into account any medical confidentiality;
- (c) review the risk assessment;
- (d) review any measure taken to comply with regulation 6, taking into account any advice given by a doctor or occupational health professional or by the enforcing authority;
- (e) consider assigning the employee to alternative work where there is no risk from further exposure to vibration, taking into account any advice given by a doctor or occupational health professional;
- (f) provide continued health surveillance for that employee; and
- (g) provide for a review of the health of any other employee who has been similarly exposed, including a medical examination where such an examination is recommended by a doctor or occupational health professional or by the enforcing authority.

Information and training.

8.(1) If—

- (a) the risk assessment indicates that there is a risk to the health of his employees who are, or who are liable to be, exposed to vibration; or
- (b) employees are likely to be exposed to mechanical vibration at or above an exposure action value,

the employer shall provide those employees and/or their representatives

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with suitable and sufficient information and training.

(2) Without prejudice to the generality of sub-regulation (1), the information and training provided under that paragraph shall include—

- (a) the organisational and technical measures taken in order to comply with the requirements of regulation 6;
- (b) the exposure limit values and action values set out in regulation 4;
- (c) the significant findings of the risk assessment, including any measurements taken, with an explanation of those findings 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 under which an employee is entitled to health surveillance under regulation 7;
- (f) safe working practices to minimise exposure to mechanical vibration.

Exemption certificates for emergency services.

9.(1) Subject to sub-regulation (2), the Minister may, by a certificate in writing, exempt any person or class of persons from regulation 6(4) in respect of activities carried out by emergency services which conflict with the requirements of that sub-regulation, and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by a certificate in writing at any time.

(2) The Minister shall not grant any such exemption unless he is satisfied that the health and safety of the employees concerned is ensured as far as possible in the light of the objectives of these Regulations.

Consultation and participation.

10. The consultation and participation of employees in matters arising from the application of these Regulations shall be conducted in accordance with regulation 8 of the Management of Health and Safety at Work Regulations 1996.

Exemption certificates for air transport.

11.(1) Subject to sub-regulation (2), the Minister may, by a certificate in writing, exempt any person or class of persons from regulation 6(4) in

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respect of whole-body vibration in the case of air or sea transport, where the latest technical advances and the characteristics of the workplace do not permit compliance with the exposure limit value despite the technical and organisational measures taken.

- (2) The Minister shall not grant any such exemption unless—
- (a) he consults the employers and the employees concerned or their representatives;
 - (b) the resulting risks are reduced to as low a level as is reasonably practicable; and
 - (c) the employees concerned are subject to increased health surveillance, where such surveillance is appropriate within the meaning of regulation 7(2).
- (3) An exemption issued under subregulation (1) may be subject to conditions.
- (4) An exemption issued under subregulation (1) may be revoked at any time by a notice in writing.

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SCHEDULE 1**

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Regulations 4(1) and 6(5)

Hand-Arm Vibration

Part I-Daily exposure to vibration

The daily exposure to vibration standardised to an 8-hour reference period ($A(8)$) of a person is ascertained using the formula:

$$A(8) = a_{hv} \sqrt{\frac{T}{T_0}}$$

where:

a_{hv} is the vibration magnitude, in metres per second squared (m/s^2);

T is the duration of exposure to the vibration magnitude a_{hv} ; and

T_0 is the reference duration of 8 hours (28,800 seconds).

To avoid confusion between vibration magnitude and daily exposure to vibration, it is conventional to express daily exposure to vibration in m/s^2 $A(8)$.

The vibration magnitude, a_{hv} , is ascertained using the formula:

$$a_{hv} = \sqrt{a_{hwx}^2 + a_{hwy}^2 + a_{hwz}^2}$$

where:

a_{hwx} , a_{hwy} and a_{hwz} are the root-mean-square acceleration magnitudes, in m/s^2 , measured in three orthogonal directions, x, y and z, at the vibrating surface in contact with the hand, and frequency-weighted using the weighting W_h .

The definition for the frequency weighting W_h is given in British Standard BS EN ISO 5349-1:2001.

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Where both hands are exposed to vibration, the greater of the two magnitudes a_{hvi} is used to ascertain the daily exposure.

If the work is such that the total daily exposure consists of two or more operations with different vibration magnitudes, the daily exposure ($A(8)$) for the combination of operations is ascertained using the formula:

$$A(8) = \sqrt{\frac{1}{T_0} \sum_{i=1}^n a_{hvi}^2 T_i}$$

where:

n is the number of individual operations within the working day;

a_{hvi} is the vibration magnitude for operation i ; and

T_i is the duration of operation i .

Part II-Exposure to vibration averaged over one week

The exposure to vibration averaged over one week ($A(8)_{\text{week}}$) is the total exposure occurring within a period of seven consecutive days, normalised to a reference duration of five 8-hour days (40 hours). It is ascertained using the formula:

$$A(8)_{\text{week}} = \sqrt{\frac{1}{5} \sum_{j=1}^7 A(8)_j^2}$$

where:

$A(8)_j$ is the daily exposure for day j .

The exposure to vibration averaged over one week is for use only for the purposes of Regulation 6(5).

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SCHEDULE 2**

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Regulations 4(2) and 6(5)

Whole-Body Vibration

Part I -Daily exposure to vibration

The daily exposure to vibration ($A(8)$) standardised to an 8-hour reference period of a person is ascertained using the formula:

$$A(8) = k a_w \sqrt{\frac{T}{T_0}}$$

where:

a_w is the vibration magnitude (root-mean-square frequency-weighted acceleration magnitude) in one of the three orthogonal directions, x, y and z, at the supporting surface;

T is the duration of exposure to the vibration magnitude a_w ;

T_0 is the reference duration of 8 hours (28,800 seconds); and

k is a multiplying factor.

To avoid confusion between vibration magnitude and daily exposure to vibration, it is conventional to express daily exposure to vibration in $m/s^2 A(8)$.

Daily exposure to vibration ($A(8)$) is evaluated separately for the x, y and z directions of vibration.

For horizontal vibration (x and y directions), $k = 1.4$ and a_w is obtained using the W_d frequency weighting. For vertical vibration (z direction), $k = 1.0$ and a_w is obtained using the W_k frequency weighting.

Definitions for the frequency weightings are given in International Standard ISO 2631-1:1997.

If the work is such that the total daily exposure consists of two or more operations with different vibration magnitudes, the daily exposure ($A(8)$) for the combination of operations is ascertained using the formula:

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$$A(8) = \sqrt{\frac{1}{T_0} \sum_{i=1}^n a_{wi}^2 T_i}$$

where:

n is the number of individual operations within the working day;

a_{wi} is the vibration magnitude for operation i ; and

T_i is the duration of operation i .

Part II-Exposure to vibration averaged over one week

The exposure to vibration averaged over one week ($A(8)_{\text{week}}$) is the total exposure occurring within a period of seven consecutive days, normalised to a reference duration of five 8-hour days (40 hours). It is ascertained using the formula:

$$A(8)_{\text{week}} = \sqrt{\frac{1}{5} \sum_{j=1}^7 A(8)_j^2}$$

where:

$A(8)_j$ is the daily exposure for day j .

The exposure to vibration averaged over one week is for use only for the purposes of Regulation 6(5).