

**Health and Safety Requirements for the Working Environments Affected by Vibration,
Maximum Vibration Limits for the Working Environments and the Vibration
Measurement Procedure¹**

Government of the Republic Regulation No. 109 of 12 April 2007

The Regulation is established pursuant to § 3 (4) and § 6 (6) of the Occupational Health and Safety Act.

Chapter 1
GENERAL PROVISIONS

§ 1. Scope of application

This Regulation establishes the maximum vibration limits for working environments, the procedure for measuring the vibration, and the obligations of employers to prevent or reduce health risks caused by vibration.

§ 2. Definitions

The following definitions are used in the Regulation:

- 1) *vibration* – mechanical oscillation of solid bodies;
- 2) *whole-body vibration* – mechanical vibration that is transmitted to the body of the worker;
- 3) *hand-arm vibration* – mechanical vibration that is transmitted to the hand of the worker;
- 4) *daily exposure to whole-body vibration A(8) (m/s²)* – exposition standardised to an eight-hour reference period and calculated according to the standards EVS-ISO 2631-1:2002 and EVS-EN 14253:2004;
- 5) *daily exposure to hand-arm vibration A(8) (m/s²)* – exposition standardised to an eight-hour reference period and calculated according to Chapters 4 and 5 and Annex A of the standard EVS-EN ISO 5349-1:2002.

§ 3. Maximum vibration limits and exposure action values in the working environment

(1) The maximum limit of workers' daily exposure to whole-body vibration A(8) shall be 1.15 m/s².

(2) Once the daily exposure to whole-body vibration A(8) exceeds 0.5 m/s² (hereinafter: *whole-body vibration exposure action value*), measures should be taken to reduce the impact of vibration.

(3) The maximum limit of workers' daily exposure to hand-arm vibration A(8) shall be 5.0 m/s².

(4) Once the daily exposure to hand-arm vibration A(8) exceeds 2.5 m/s² (hereinafter: *hand-arm vibration exposure action value*), measures should be taken to reduce the impact of vibration.

Chapter 2
OBLIGATIONS OF EMPLOYERS

§ 4. Working environment risk assessment

(1) In the course of the working environment risk assessment, the employer shall identify significant vibration sources to which the workers are exposed and measure the exposure to vibration if necessary.

(2) During the risk assessment, particular attention should be paid to the following:

- 1) the level, type and duration of the workers exposure to vibration, including any exposure to intermittent vibration or repeated shocks;
- 2) the maximum vibration limits and exposure action values laid down in this Regulation;
- 3) any effects of vibration concerning the health of workers at particularly sensitive risk (e.g., pregnant or breastfeeding women, minors);
- 4) any indirect effects on worker safety resulting from situations where vibration interferes with proper handling of control equipment, monitoring of indicators, or stability of work equipment or structures;
- 5) information provided by the manufacturer or supplier of work equipment on the vibration level of work equipment;
- 6) condition and wear of work equipment;
- 7) existence of auxiliary equipment designed to reduce the exposure to vibration;
- 8) the possibility of exposure to whole-body vibration outside working hours when the worker remains in the employer's area of responsibility (e.g., while staying in rest areas or changing rooms);
- 9) working conditions that increase the effects of vibration (e.g., low temperature, high air humidity level, noise);
- 10) appropriate information obtained from workers' health surveillance.

§ 5. Reduction of health risk

(1) Risks related to exposure to vibration should be eliminated at source or reduced to a minimum according to the principles of prevention laid down in § 12¹ of the Occupational Health and Safety Act.

(2) If the results of risk assessment indicate that the vibration exposure action values specified in § 3 (2) or (4) are exceeded, the employer shall prepare and implement a programme of technical and organisational measures to avoid or reduce workers' exposure to vibration. When preparing the programme, attention should be paid to the following:

- 1) use of other working methods that do not require or require less exposure to vibration;
- 2) enabling the workers to use work equipment with known and least possible vibration characteristics;
- 3) limitation of the duration and intensity of exposure to vibration;
- 4) preparation of work schedules for the workers that provide for rest periods or vibration-free work assignments;
- 5) procurement of auxiliary equipment to reduce the effects of vibration (e.g., seats that reduce whole-body vibration, handles that reduce hand-arm vibration);
- 6) the provision of gloves and footwear that reduce vibration for the workers exposed to vibration and the provision of work clothing to protect workers from cold and damp;
- 7) ensuring proper working order and maintenance of the workplaces and vibrating work equipment;
- 8) changing the layout and design of workplaces if necessary;
- 9) proposals made by the occupational health doctor in the worker's health surveillance report for making changes in the working environment or organisation of work.

(3) If the maximum vibration limit is exceeded, despite the measures taken, the employer shall immediately identify the reasons why the maximum limit was exceeded and improve the protection and prevention measures in order to avoid exceeding the maximum limit in the future.

§ 6. Worker instruction and training

The employer shall ensure that the workers exposed to vibration and the working environment representative receive adequate instruction and training concerning, in particular:

- 1) detrimental health effects of vibration;
- 2) early detection and reporting of damage to health caused by vibration;
- 3) the necessity and procedure of health surveillance;
- 4) the maximum vibration limits and exposure action values;
- 5) the results of vibration measurement and health risk assessment in the company;
- 6) measures taken at workplace to prevent or reduce health risks from vibration (organisation of work, use of personal protective equipment, safe working practices).

§ 7. Health surveillance of workers

(1) The purpose of health surveillance of the workers is prevention and early detection of damage to health from vibration.

(2) The employer shall ensure that all workers exposed to vibration undergo health surveillance pursuant to the procedure laid down in compliance with § 13 (1) 7) of the Occupational Health and Safety Act.

(3) Where health surveillance reveals that a worker has damage to health from vibration, the employer shall review the working environment risk assessment and the measures taken to reduce the risks and, if necessary, assign the worker to alternative work or position where there is no risk of further exposure to vibration, taking into account the advice of the occupational health doctor.

(4) Where health surveillance reveals that a worker has damage to health from exposure to vibration, the other workers working in similar conditions must also undergo health surveillance.

(5) Workers should undergo health surveillance at the intervals specified by the occupational health doctor even following the end of exposure to vibration.

Chapter 3 MEASUREMENT OF VIBRATION

§ 8. Measurement procedure

(1) Daily exposure to vibration A(8) is established:

- 1) on the basis of calculations based on the information received from the manufacturer or supplier of work equipment concerning the vibration generated by the work equipment, and through observation of specific work operations if there are reasons to believe that the degree of daily exposition standardised to an eight-hour reference period A(8) is significantly lower than the maximum vibration limit, or
- 2) direct measurement of vibration.

(2) The vibration measurement results should have proved traceability within the meaning of the Metrology Act.

(3) Whole-body vibration is measured in three orthogonal axes, taking into account the posture of the worker and the location of the vibration source, whereby one direction of measurement is along the body (Z-axis) and the others are from back to chest (X-axis) and from side to side (Y-axis). The measurement should comply with the requirements of the EVS-ISO 2631-1:2002 standard.

(4) Hand-arm vibration is measured in three orthogonal axes, taking into account the position of the hands of the worker and the shape of the vibration source, which is in contact with the hands. One direction of measurement is along the arm (Z-axis) and the other directions (X-axis and Y-

axis) cross the Z-axis. The measurement and formalisation of measurement records should comply with the requirements of the EVS-ISO 5349-2:2001 standard. In the case of work equipment, which needs to be held with both hands, measurements must be made on each hand. The exposure level is determined by reference to the higher value and information for the other hand shall also be given.

(5) The results of measurement shall be recorded. (6) The employer shall preserve the measurement records together with the results of risk assessment.

§ 9. Comparison with maximum limit

Comparison of vibration with the maximum limits takes place on the basis of the value of exposition standardised to an eight-hour reference period A(8), taking account of uncertainty of measurement, which shall be documented as expanded measurement uncertainty at the 95 % confidence level.

Chapter 4 IMPLEMENTING PROVISION

§ 10. Amendment of Regulation

Chapter 3 "Vibration" of the Government of the Republic Regulation No. 54 of 25 January 2002 «Limits for Physical Risk Factors Present in the Working Environment and the Procedure for Measuring the Parameters of Risk Factors» (RT I 2002, 15, 83; 2004, 82, 556) is repealed.

1 Directive 2002/44/EC of the European Parliament and of the Council 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) (OJ L 177, 6.07.2002, p. 13–20).

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