



BERMUDA

MERCHANT SHIPPING AND FISHING VESSELS (CONTROL OF VIBRATION AT
WORK) REGULATIONS 2019

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The Minister responsible for Maritime Administration, in exercise of the powers conferred by sections 93 and 94 of the Merchant Shipping Act 2002, and after consulting the persons referred to in section 94(3) of that Act, makes the following Regulations:

Citation

1 These Regulations may be cited as the Merchant Shipping and Fishing Vessels (Control of Vibration at Work) Regulations 2019.

Interpretation

2 (1) In these Regulations—

“Authority” means the Bermuda Shipping and Maritime Authority (BSMA);

“Bermuda ship” means a ship, which is—

- (a) a Bermuda ship within the meaning of section 16(3) of the Act;
- (b) a Government ship within the meaning of section 4(3) of the Act; or
- (c) a hovercraft;

“Bermuda waters” means the sea or other waters within the seaward limits of the territorial sea of Bermuda;

“daily exposure” means the quantity of mechanical vibration to which a worker is exposed during a working day, which takes account of the magnitude and duration of the vibration;

“employer” means a person by whom a worker is employed on a ship under a contract of employment;

“exposure action value” means the level of daily exposure for any worker which, if exceeded, requires specified action to be taken to reduce the risk;

“exposure limit value” means the level of daily exposure for any worker which subject to Regulation 12, must not be exceeded;

“General Duties Regulations” means the Merchant Shipping (Health and Safety at Work) Regulations 2004;

“Government ship” has the meaning given in section 4(3) of the Act;

“hand-arm vibration” means mechanical vibration, which is transmitted into the hands during a work activity;

“health and safety” includes the occupational health and safety of persons whilst on board a ship and whilst boarding or leaving the ship;

“health surveillance” means assessment of the state of health of a worker as related to exposure to mechanical vibration which is intended to prevent and diagnose rapidly, any disorder linked with exposure to mechanical vibration;

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

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“Merchant Shipping Notice” means a Notice described as such and issued by the Chief Marine Surveyor, or the equivalent UK Merchant Shipping Notice, as applicable;

“Minister” means the Minister responsible for Maritime Administration;

“Provision and Use of Work Equipment Regulations” means the Merchant Shipping and Fishing Vessels (Provision and Use of Work Equipment) Regulations 2019;

“risk assessment” means a risk assessment carried out in compliance with Regulation 6;

“surveyor of ships” has the meaning given by section 217 of the Act;

“whole-body vibration” means mechanical vibration, which is transmitted into the body, when seated or standing, through the supporting surface, during a work activity.

(2) In these Regulations, any reference to an ISO standard includes a reference to any document amending that publication, which is considered by the Minister to be relevant from time to time and is specified in a Merchant Shipping Notice.

Meaning of “worker”

3 (1) In these Regulations, “worker” means any person employed under a contract of employment, including a trainee or apprentice other than a person who is training in a vessel which is being used to provide instruction in—

- (a) the principles of responsibility, resourcefulness, loyalty and team endeavour and to advance education in the art of seamanship; or
- (b) navigation and seamanship for yachtsmen, and which is operating under a relevant code.

(2) In paragraph (1), “relevant code” means—

- (a) the Large Commercial Yacht Code as set out in a Merchant Shipping Notice issued by the Chief Marine Surveyor, or the equivalent UK Merchant Shipping Notice, as applicable;
- (b) the Code of Practice for the Safety of Small Commercial Sailing Vessels;
- (c) the Code of Practice for the Safety of Small Commercial Motor Vessels; or
- (d) the Code of Practice for the Safety of Small Vessels in Commercial Use for Sport or Pleasure Operating from a Nominated Departure Point.

(3) In paragraph (2), each reference to a Code includes a reference to any document containing an amendment or replacement of that Code, which is considered by the Minister to be relevant from time to time.

Application

4 (1) Without prejudice to Regulation 5 of the General Duties Regulations and subject to paragraphs (2) to (6), these Regulations apply in relation to Bermuda ships.

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(2) Where—

- (a) a ship is being used in the course of public service activities or activities for the purpose of civil protection services; and
- (b) characteristics peculiar to those activities inevitably conflict with a provision of these Regulations, that provision does not apply in relation to that ship to the extent of that conflict.

(3) To the extent that a provision of these Regulations does not apply in relation to a ship because of paragraph (2), there is in relation to that ship, a duty on the employer to ensure, so far as is reasonably practicable, the health and safety of workers who are or who are likely to be exposed to risks from mechanical vibration, as a result of their work.

(4) The General Duties Regulations and the Merchant Shipping and Fishing Vessels (Provision and Use of Work Equipment) Regulations 2019 shall continue to apply to activities to which these Regulations apply.

(5) Notwithstanding paragraph 4, where these Regulations contain more stringent or more specific provisions, these Regulations shall apply.

(6) This Regulation (other than paragraph (1) and Regulations 17 and 19) apply in relation to ships which are not Bermuda ships, when they are in Bermuda waters.

(7) In paragraph (2)—

“civil protection services” include fire and ambulance services and search and rescue services provided by any other person;

“public service activities” include activities of the Bermuda Regiment, Customs, immigration and police officers.

Exposure limit values and exposure action values

5 (1) For hand-arm vibration—

- (a) the daily exposure limit value standardised to an eight-hour reference period is 5 m/s²; and
- (b) the daily exposure action value standardised to an eight-hour reference period is 2.5 m/s².

(2) For whole body vibration—

- (a) the daily exposure limit value standardised to an eight-hour reference period is 1.15 m/s²; and
- (b) the daily exposure action value standardised to an eight-hour reference period is 0.5 m/s².

(3) Daily exposure shall be ascertained in accordance with the Schedule.

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Assessment of risks

6 (1) The employer shall assess the level of mechanical vibration to which workers are exposed as part of the risk assessment required by Regulation 7 of the General Duties Regulations.

(2) Where the employer concludes that the nature and extent of any risks related to mechanical vibration to which workers are exposed are such that a detailed risk assessment is not necessary, the risk assessment shall explain the reasons for such a conclusion.

(3) The risk assessment shall be based on—

- (a) observation of specific working practices;
- (b) information provided by the manufacturer of the equipment and any other relevant information on the probable magnitude of vibration in the particular conditions of use; and
- (c) if necessary, measurement of level of mechanical vibration to which workers are likely to be exposed in accordance with paragraph 5 of the Schedule.

(4) Notwithstanding Regulation 7 of the General Duties Regulations, in carrying out the risk assessment, the employer shall consider—

- (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 in Regulation 5;
- (c) the health and safety of workers who may be particularly sensitive to mechanical vibration;
- (d) any indirect effect on worker safety which may be caused by interaction between equipment, subject to mechanical vibration and the workplace or other work equipment;
- (e) information provided by the manufacturers of work equipment;
- (f) the existence of replacement equipment designed to reduce exposure to vibration;
- (g) the extension of exposure to whole body vibration beyond normal working hours;
- (h) the effect of specific working conditions, such as low temperatures; and
- (i) appropriate information obtained from health surveillance, including published information.

(5) The employer shall ensure that the risk assessment—

- (a) is planned and carried out by the persons appointed in accordance with Regulation 14 of the General Duties Regulations;

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- (b) records—
 - (i) the significant findings of the risk assessment as soon as practicable after the risk assessment is made or changed; and
 - (ii) the measures the employer has taken or intends to take, to comply with Regulations 7 and 8 of these Regulations;
so as to permit consultation as required by these Regulations; and
- (c) is reviewed—
 - (i) at suitable intervals;
 - (ii) if there are any significant changes in working condition which affect its validity; or
 - (iii) if the results of a health surveillance indicate that a further risk assessment is necessary; and
- (d) is retained by him.

Elimination or control of exposure to vibration in the workplace

7 (1) The employer shall ensure that the risks arising from exposure to mechanical vibration which are identified by the risk assessment are either—

- (a) eliminated at their source; or
- (b) reduced to a level which is as low as is reasonably practicable,

having regard to the principles in Regulation 5 of the General Duties Regulations.

(2) Where it is not reasonably practicable to eliminate risk at source pursuant to paragraph (1) and an exposure action value is likely to be exceeded, the employer shall reduce exposure to as low as is reasonably practicable under paragraph (1) by establishing and implementing a programme of organisational and technical measures appropriate to the activity, which may in particular, include—

- (a) implementing alternative working methods that require less exposure to vibration;
- (b) use of appropriate work equipment of appropriate ergonomic design which, taking account of the work to be done, produces the least possible vibration;
- (c) providing equipment which reduces the risk of injuries caused by vibration;
- (d) implementing appropriate maintenance programmes for work equipment, the workplace and workplace systems;
- (e) altering the design and layout of workplaces and work stations;

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- (f) providing adequate information and training to workers to ensure that work equipment is used correctly and safely in order to reduce exposure to mechanical vibration to, as low as is reasonably practicable;
 - (g) imposing limits on the duration and intensity of exposure to mechanical vibration;
 - (h) altering work schedules and rest periods;
 - (i) providing clothing to protect exposed workers from cold and damp; and
 - (j) providing personal protective equipment against hand-arm vibration.
- (3) The employer shall take into account the results of any health surveillance required by Regulation 9, in applying the organisational and technical measures required by this Regulation.
- (4) Subject to Regulation 12, the employer shall ensure that workers are not exposed to mechanical vibration exceeding the daily exposure limit value specified in Regulation 5(1)(a) or 5(2)(a).
- (5) Subject to Regulation 12, following implementation of the organisational and technical measures taken in accordance with paragraph (2), the employer shall assess the effectiveness of such measures and if the daily exposure limit value is exceeded, shall—
- (a) identify the reasons why the limit has been exceeded;
 - (b) take such action as is necessary to reduce exposure to vibration below the exposure limit value; and
 - (c) amend the measures taken in accordance with paragraph (2), to ensure that the limit is not exceeded again.
- (6) Except in an emergency, vibration in accommodation and rest spaces shall be reduced to a level compatible with their purpose and use.
- (7) The employer shall adopt measures which are taken in accordance with this Regulation, to workers who are particularly sensitive to vibration.
- (8) Paragraphs (4) and (5) shall not apply where work equipment is used, which—
- (a) was first provided to workers prior to the coming into force of these Regulations; and
 - (b) despite the latest technical advances and organisational measures, does not permit compliance with the exposure limit values;
- but in such a case, the employer shall take such measures provided for in these Regulations, so as to limit the exposure to mechanical vibration as far as reasonably practicable.

Worker information and training

- 8 (1) If—

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- (a) the risk assessment indicates that there is a risk to the health of workers who are, or who are liable to be exposed to vibration; or
- (b) workers are exposed to the risk of mechanical vibration in excess of an exposure action value;

the employer shall provide those workers and their representatives with suitable and sufficient information, instruction and training.

(2) Information, instruction and training provided in accordance with paragraph (1), shall include—

- (a) details of the measures taken in order to eliminate or reduce to as low as reasonably practicable, the risks from mechanical vibration;
- (b) the exposure limit values and the exposure action values;
- (c) the results of the risk assessment carried out in accordance with Regulation 6;
- (d) the circumstances in which workers are entitled to health surveillance under these Regulations;
- (e) the potential injuries which may arise from the work equipment in use;
- (f) safe working practices to minimise exposure to mechanical vibration;
- (g) how to detect and report signs of injury; and
- (h) the importance of detecting and reporting signs of injury.

Health surveillance

9 (1) If—

- (a) the risk assessment indicates that there is a risk to the health of workers who are, or are likely to be, exposed to mechanical vibration; or
- (b) workers are likely to be exposed to vibration in excess of an exposure action value,

the workers shall be entitled to health surveillance provided by the employer where such health surveillance is appropriate in accordance with paragraph (2).

(2) Health surveillance shall be appropriate where—

- (a) a link can be established between such exposure and an identifiable illness or harmful effects on health;
- (b) it is probable that the illness or the effects occur in the worker's particular working conditions; and
- (c) there are established techniques for detecting the illness or the harmful effects on health.

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(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 an occupational health professional to be the result of exposure to mechanical vibration at work, the employer shall—

- (a) ensure that the worker is informed by a doctor or other suitably qualified person, of the result of the health surveillance and provided with information and advice regarding any health surveillance which he should undergo, following the end of exposure;
- (b) ensure that he is informed himself, of any significant findings, taking into account any medical confidentiality;
- (c) review the risk assessment concerned;
- (d) review the measures taken to comply with Regulation 7, taking into account any advice given by a doctor, occupational health professional or the Authority;
- (e) consider assigning the worker to alternative work where there is no risk of further exposure to mechanical vibration, when advised to do so by a doctor or an occupational health care professional;
- (f) arrange for the continued health surveillance of the worker;
- (g) review the health surveillance of any other workers who have been similarly exposed, including, if recommended by a doctor or occupational health professional, arranging a medical examination for such workers.

(4) The employer shall ensure that a health record is made and maintained in respect of each worker who undergoes health surveillance in accordance with these Regulations, the record being in a suitable form and containing a summary of the results of the health surveillance carried out.

(5) The employer shall—

- (a) on reasonable notice being given, allow a worker access to his personal health records;
- (b) keep the health records available, in a suitable form;
- (c) at the request of a worker, make the health records available to any person specified by the worker; and
- (d) provide the Minister with such copies of the health records as the Minister may require.

(6) The employer shall pay the costs of health surveillance carried out in order to comply with this Regulation.

Consultation with workers

10 In consulting with workers in accordance with Regulation 20 of the General Duties Regulations, workers or their representatives must be consulted on—

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- (a) the assessments, measurements and findings of the risk assessment in accordance with Regulation 6;
- (b) measures taken to eliminate workplace vibration, in accordance with Regulation 7;
- (c) the provision of worker information instruction and training, in accordance with Regulation 8; and
- (d) the arrangements for health surveillance in accordance with Regulation 9.

Persons on whom duties are imposed

11 (1) Where a person on whom a duty is imposed in Regulations 4 to 10 does not have control of the matter to which that provision relates, because that person does not have responsibility for the operation of the ship, that duty also extends to any other person who has control of that matter.

(2) It is the duty of every worker performing activities to which these Regulations apply, to—

- (a) make full and proper use of all clothing and equipment with which he has been provided by the employer in pursuance of these Regulations; and
- (b) give effect to all instructions and training with which he has been provided under Regulation 8.

Exemptions

12 (1) The Minister may grant an exemption in respect of work on a particular ship, from the requirement to comply with Regulation 7(4) and (5) in relation to whole-body vibration, where he is satisfied that the state of the art and the specific characteristics of the ship do not make it possible to comply with the whole body exposure limit value, whatever technical and organisational measures are adopted.

(2) If the conditions in paragraph (3) are satisfied, the Minister may grant an exemption from the requirements of Regulation 7(4) and (5) where a worker is exposed to mechanical vibration which is usually below the exposure action values referred to in Regulation 5, but which varies significantly from time to time and may sometimes exceed the exposure action value.

(3) The conditions referred to in paragraph (2) are that—

- (a) the exposure value averaged over 40 hours is less than the exposure limit value;
- (b) there is evidence to show that the risks from the pattern of exposure are lower than those from exposure at the exposure limit value;
- (c) the worker concerned is subject to health surveillance in accordance with Regulation 9; and
- (d) the risk is reduced to as low as is reasonably practicable.

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- (4) The Minister must not grant an exemption under paragraph (1) or (2), unless—
- (a) he has consulted with—
 - (i) the employer or other person having control of the matter in question; and
 - (ii) the workers concerned or their representatives;
 - (b) the resulting risks are reduced to as low as is reasonably practicable; and
 - (c) health surveillance has been increased to a level considered appropriate by the Minister.
- (5) Any exemption granted under this Regulation shall be—
- (a) in writing;
 - (b) valid for a maximum period of four years; and
 - (c) withdrawn as soon as the Minister is satisfied that it is no longer justified.

Offences and penalties

- 13 (1) A person who fails to comply with Regulation 6, 7 or 9 commits an offence and is liable—
- (a) on summary conviction, to a fine not exceeding \$10,000; or
 - (b) on conviction on indictment, to a fine not exceeding \$10,000 or to imprisonment for a term not exceeding two years or to both such fine and imprisonment.
- (2) A person who fails to comply with Regulation 10 commits an offence and is liable on summary conviction, to a fine not exceeding \$5,000.
- (3) A person who fails to comply with Regulation 8 or contravenes Regulation 21 commits an offence, and is liable on summary conviction to a fine not exceeding \$2,000.
- (4) A worker who fails to comply with Regulation 11(2) commits an offence and is liable on summary conviction, to a fine not exceeding \$1,000.
- (5) Section 145(1) of the Act (enforcement of fines) applies to any fine imposed for an offence under paragraphs (1) to (3) of this Regulation, as if the reference to proceedings against the owner or master of a ship for an offence under Chapter II were a reference to proceedings against any person, for an offence under those paragraphs.

Offences by body corporate

- 14 (1) Where a body corporate commits an offence under these Regulations and that offence is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of any Director, Manager, Secretary or other similar officer of the body corporate or a person who was purporting to act in such a capacity, he,

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as well as the body corporate, commits that offence and is liable to be proceeded against and punished accordingly.

(2) Where the affairs of a body corporate are managed by its members, paragraph (1) shall apply in relation to the acts and defaults of a member, in connection with his functions of management as if he were a Director of the body corporate.

Onus of proving what is reasonably practicable

15 In any proceedings for an offence under these Regulations consisting of a failure to comply with a duty or requirement to do something, so far as is reasonably practicable, it shall be for the defendant to prove that it was not reasonably practicable to do more than was in fact done to satisfy the duty or requirement.

Detention of a Bermuda ship

16 (1) Where a surveyor of ships is satisfied that there is or has been a failure by an employer or other person referred to in Regulation 11(1), to comply in relation to any Bermuda ship, with any requirement in these Regulations, that ship is liable to be detained until a surveyor of ships is satisfied that those requirements are complied with.

(2) A surveyor of ships may permit a ship which is liable to be detained under paragraph (1), to proceed to sea for the purposes of proceeding to the nearest appropriate repair yard.

(3) A ship shall not be delayed or detained unreasonably under this Regulation.

(4) Where a ship is detained because in relation to it, there has been a failure to comply with the requirements of these Regulations, and that failure has ceased, a person having power to detain the ship shall, at the request of the owner or master, immediately release the ship—

- (a) if no proceedings for an offence arising from the failure in question are instituted within the period of seven days beginning with the day on which the ship is detained;
- (b) if proceedings for an offence arising from the failure in question, having been instituted within that period, are concluded without the employer or other person having control of the matter in question being convicted;
- (c) if either—
 - (i) the sum of \$50,000 is paid to the Minister by way of security; or
 - (ii) security which, in the opinion of the Minister, is satisfactory and is for an amount not less than \$50,000, is given to the Minister,
by or on behalf of the employer or other person having control of the matter in question;
- (d) where the employer or other person having control of the matter in question is convicted of an offence arising from the failure in question, if any costs or expenses ordered to be paid by him, and any fine imposed on him, have been paid; or

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- (e) the release is ordered by a court or tribunal referred to in article 292 of the United Nations Convention on the Law of the Sea 1982, and any bond or other financial security ordered by such court or tribunal is posted.
- (5) The Minister shall repay any sum paid in pursuance of paragraph (4)(c) or release any security so given—
- (a) if no proceedings for an offence arising from the failure in question are instituted within the period of seven days beginning with the day on which the sum is paid; or
 - (b) if proceedings for an offence arising from the failure in question, having been instituted within that period, are concluded without the employer or other person having control of the matter in question, being convicted.
- (6) Where a sum has been paid, or security has been given, by any person in pursuance of paragraph (4)(c) and the employer or other person having control of the matter in question is convicted of an offence arising from the failure in question, the sum so paid or the amount made available under the security shall be applied as follows—
- (a) first, in payment of any costs or expenses ordered by the court to be paid by the employer or other person having control of the matter in question;
 - (b) next, in payment of any fine imposed by the court; and
 - (c) any balance shall be repaid to the first-mentioned person.
- (7) Section 144 of the Act applies for the purposes of paragraphs (4) to (6), as if—
- (a) references to the master or owner of the ship were references to the employer or other person having control of the matter in question; and
 - (b) references to an offence under section 130 of the Act were references to an offence arising from the failure in question.

Inspection and other measures in respect of ships registered outside Bermuda.

17 (1) When a ship which is not a Bermuda ship is in Bermuda waters, a relevant inspector may inspect that ship to ascertain whether the standards required in relation to Bermuda ships by these Regulations are met by that ship.

(2) Where a surveyor of ships is satisfied that the standards required in relation to Bermuda ships by these Regulations are not met by a ship which is not a Bermuda ship, but is in Bermuda waters, that surveyor of ships may—

- (a) send a report to the government of the State whose flag the ship is entitled to fly, and a copy of the report, to the Director General of the International Labour Organization; and
- (b) where conditions on board are clearly hazardous to health or safety, take such measures as are necessary to ensure those conditions are rectified.

(3) A ship to which paragraph (2)(b) applies is liable to be detained until a surveyor of ships is satisfied that those conditions are rectified.

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(4) A surveyor of ships may permit a ship which is liable to be detained under paragraph (3), to proceed to sea for the purposes of proceeding to the nearest appropriate repair yard.

(5) If any of the measures specified in paragraph (2)(b) or (3) are taken, the surveyor of ships shall immediately notify the nearest maritime, consular or diplomatic representative of the State whose flag the ship is entitled to fly.

(6) A ship shall not in the exercise of the power under this Regulation be delayed or detained unreasonably.

(7) In paragraph (1), “relevant inspector” means a person mentioned in section 219(1)(a), (b) or (c) of the Act.

Application of powers of inspectors in relation to Government ships

18 Sections 219 to 227 of the Act apply to these Regulations as if they were for all purposes, made under section 93 of the Act and accordingly, those sections apply in relation to Government ships.

Enforcement of detention

19 (1) Section 242 of the Act applies where a ship is liable to be detained under these Regulations, as if references to detention of a ship under the Act were references to detention of the ship in question under these Regulations and subsection (7) were omitted.

(2) Where a ship is liable to be detained under these Regulations, the person detaining the ship shall serve on the master of the ship a detention notice, which shall—

- (a) state that a surveyor of ships is of the opinion that in relation to that ship there is a failure to comply with the requirements of these Regulations;
- (b) specify the requirements which, in the opinion of the surveyor of ships, that ship has not met; and
- (c) require the terms of the notice to be complied with until the ship is released by any person mentioned in section 242(1) of the Act.

Right of appeal and compensation

20 Regulations 14 and 24 (right of appeal and compensation) of the Merchant Shipping (Port State Control) Regulations 2019 (which by virtue of Regulation 22 of those Regulations, apply in relation to the exercise of powers of detention contained in safety Regulations), apply in relation to a detention notice served on a Government ship under these Regulations, as if these Regulations were for all purposes made under section 93 of the Act.

Prohibition on Levy

21 No charge in respect of anything done or provided in pursuance of any specific requirement of these Regulations shall be levied or permitted to be levied on any worker.

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SCHEDULE

(Regulation 5)

MODE OF ASCERTAINMENT OF EXPOSURE LIMIT VALUES AND EXPOSURE ACTION VALUES

Definitions

1 In this schedule—

“acceleration” means the quantity used to represent vibration magnitude in units of metres per second per second (m/s²);

“BS EN ISO standard 5349-1” means the British Standard publication “Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration Part I: General Requirements” first edition dated 10th May 2001;

“BS EN ISO standard 5349-2” means the British Standard publication “Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for measurement at the workplace” first edition dated 23 August 2001;

“frequency weighted acceleration” means vibration magnitude corrected for varying human sensitivity to vibration at different frequencies;

“ISO 2631-1” means the International Organisation for Standardisation publication “Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration - Part 1: General requirements” second edition dated 15 July 1997; and

“orthogonal axes” means the three directions of vibration, which are at right angles to one another.

Assessment of Exposure

2 Assessment of the level of exposure to hand-arm vibration is to be 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 ahwx, ahwy, and ahwz, as defined in Chapters 4 and 5 and Annex A to BS EN ISO standard 5349-1.

3 Assessment of the level of exposure to whole body vibration is to be based on the calculation of daily exposure expressed as equivalent continuous acceleration over an eight-hour period, calculated as the highest (rms) value, determined on three orthogonal axes (1,4awx, 1,4awy, awz, for a seated or standing worker) in accordance with Chapters 5, 6 and 7, Annex A and Annex B to ISO standard 2631-1.

4 Assessment of whole body vibration need only include vibrations of a frequency exceeding 1 hz.

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5 If the assessment is based on measurement in accordance with Regulation 6(3)(c), the methods used—

- (a) may include sampling, which must be representative of the personal exposure of a worker to the mechanical vibration in question;
- (b) must be adapted to—
 - (i) the particular characteristics of the mechanical vibration to be measured;
 - (ii) ambient factors; and
 - (iii) the characteristics of the measuring apparatus; and
- (c) in the case of whole body vibration, must be carried out in accordance with BS EN ISO standard 5349-2.

6 In the case of hand-arm vibration for devices, which need to be held with both hands—

- (a) measurements must be made for each hand;
- (b) the exposure is determined by reference to the higher of the two values; and
- (c) information for the other hand must also be provided.

Interference and indirect risks

7 Regulation 6(4)(d) shall apply in particular, where mechanical vibration interferes with—

- (a) the proper handling of controls or reading indicators; and
- (b) the stability of structures or the security of joints.

Made this 14th day of February 2019

Minister of Tourism and Transport

[Operative Date: 18 February 2019]