

## THE OCCUPATIONAL SAFETY AND HEALTH ACT

### Regulations made under section 100 of the Occupational Safety and Health Act

1. These regulations may be cited as the Occupational Safety and Health (Noise at Work) Regulations 2012.

2. In these regulations –

“competent person” means any person who has –

- (a) any of the qualifications specified in the First Schedule of the Occupational Safety and Health Act; and
- (b) followed a professional development course on noise and related risk assessment from the University of Mauritius or any equivalent course recognised by the Tertiary Education Commission;

“daily personal noise exposure” means the level of daily personal noise exposure as determined in accordance with Part I of the First Schedule;

“exposure limit value” means the level of –

- (a) daily or weekly personal noise exposure which shall be 87 dB (A-weighted); and
- (b) peak sound pressure which shall be 140 dB (C-weighted);

“health surveillance” means the assessment of the state of health of an employee in relation to noise exposure;

“lower exposure action value” means the lower of the 2 levels of —

- (a) daily or weekly personal noise exposure which shall be 80 dB (A-weighted); and
- (b) peak sound pressure which shall be 135 dB (C-weighted);

“noise” means any audible sound;

“Occupational Health Physician” means a registered medical practitioner with post graduate qualifications in occupational health or occupational medicine;

“Otorhinolaryngologist” means a registered medical practitioner with post graduate qualifications in Otorhinolaryngology;

“peak sound pressure” means the maximum sound pressure as determined in accordance with the Second Schedule;

“upper exposure action value” means the higher of the 2 levels of –

- (a) daily or weekly personal noise exposure which shall be 85 dB (A-weighted); and
- (b) peak sound pressure which shall be 137 dB (C-weighted);

“weekly personal noise exposure” means the level of weekly personal noise exposure as determined in accordance with Part II of the First Schedule, taking account of the level of noise and the duration of exposure and covering all noise;

“working day” means a daily working period, irrespective of the time of day when it begins or ends, and of whether it begins or ends on the same calendar day.

**3.** Every employer shall, for the health of his employee, ensure that any risk from the exposure of his employee to noise is –

- (a) either eliminated at source or;
- (b) where it is not reasonably practicable, reduced to as low a level as is reasonably practicable.

**4.** (1) Subject to paragraph (2), where an employee is, or is liable to be, exposed to noise which varies substantially from day to day, his employer may use a weekly personal noise exposure instead of a daily personal noise exposure.

(2) In applying the exposure limit value specified in paragraph (1) account shall be taken of the protection given to the employee by any personal hearing protectors provided by his employer in accordance with regulation 6(3).

**5.** (1) Where an employee is, or is liable to be, exposed to noise at or above a lower exposure action value, his employer shall cause a suitable and sufficient risk assessment of the noise to be carried out.

(2) The risk assessment shall be carried out by a competent person who shall —

- (a) assess the level of noise to which the employee is exposed;
- (b) assess whether the employee is, or is likely to be, exposed to noise at or above a lower exposure action value, an upper exposure action value, or an exposure limit value;
- (c) identify measures to be taken by the employer to ensure that the risk from exposure of the employee to noise is either eliminated

at source or, where it is not reasonably practicable, reduced to as low a level as is reasonably practicable.

- (3) The risk assessment shall be carried out by means of –
- (a) observation of specific working practices;
  - (b) reference to relevant information on the probable level of noise corresponding to any equipment used in the particular working conditions; and
  - (c) where necessary, measurement of the level of noise to which the employee is, or is likely to be, exposed.

(4) Where there is a change in the nature of work of an employee, the risk assessment shall include –

- (a) the level, type and duration of exposure, including any exposure to peak sound pressure;
- (b) the effects of exposure to noise on the employee whose health is at particular risk from such exposure;
- (c) any indirect effect on the health and safety of the employee, resulting from –
  - (i) the interaction between noise and audible warning signals or
  - (ii) other sound that need to be audible in order to reduce risk at work;
- (d) any information provided by the manufacturer of work equipment;
- (e) the availability of alternative equipment designed to reduce the emission of noise;
- (f) any extension of exposure to noise at the workplace beyond normal working hours, including exposure in rest facilities supervised by the employer;
- (g) appropriate information obtained following health surveillance, including, where possible, published information; and
- (h) the availability of personal hearing protectors with adequate attenuation characteristics.

(5) (a) Subject to subparagraph (b), an employer shall cause a risk assessment to be carried out at least once every 2 years.

- (b) A risk assessment shall be reviewed forthwith where –
  - (i) there is reason to suspect that the risk assessment is no longer valid; or
  - (ii) there has been a significant change in the work of an employee to which the assessment relates.

(6) Where, as a result of the review made under paragraph (5)(b), changes to the risk assessment are required, the employer shall promptly effect the changes.

(7) An employer shall consult his employee concerned or his representative on the risk assessment under this regulation.

- (8) An employer shall record —
  - (a) the significant findings of the risk assessment as soon as is practicable after the risk assessment is made or changed; and
  - (b) the measures taken or which he intends to take to meet the requirements of these regulations.

(9) The measurement referred to in regulation 5(3)(c) shall be carried out with a calibrated equipment compatible with the technical requirements of these regulations.

**6.** (1) Where an employee is, or is liable to be, exposed to noise at or above an upper exposure action value, his employer shall reduce the noise, to as low a level as is reasonably practicable, by establishing and implementing a programme of organisational and technical measures which is appropriate to the work being performed, excluding the provision of personal hearing protectors.

(2) The measure taken by an employer in compliance with paragraph (1) shall include –

- (a) other working methods which reduce exposure to noise;
- (b) the choice of appropriate work equipment emitting the least possible noise, taking into account the work to be done;
- (c) the design and layout of the workplace, the work station and the rest facility;
- (d) suitable and sufficient information and training for his employee in order that the work equipment may be used correctly and to minimise exposure to noise;
- (e) reduction of noise by technical means;

- (f) appropriate maintenance programmes for work equipment, the workplace and workplace systems;
- (g) limitation of the duration and intensity of exposure to noise; and
- (h) appropriate work schedules with adequate rest periods.

(3) Where an employer is, by any other means, unable to reduce the level of noise to which an employee is, or is liable to be, exposed to below an upper exposure action value, he shall provide suitable and appropriate personal hearing protectors to that employee.

(4) Where an employee is, or is likely to be, exposed to noise at or above an upper exposure action value in any area of the workplace under the control of his employer, the employer shall ensure that —

- (a) the area is designated as a Hearing Protection Zone;
- (b) the area is demarcated and identified by means of a sign indicating that a hearing protector must be worn; and
- (c) access to the area is restricted, where it is practicable, and the risk from exposure justifies such restriction.

(5) An employer shall ensure, so far as is reasonably practicable, that no employee enters an area designated as a Hearing Protection Zone unless that employee wears suitable and appropriate personal hearing protectors.

(6) Any personal hearing protector used by an employee shall be capable of eliminating the risk to hearing or reducing the risk to as low a level as is reasonably practicable.

**7.** (1) An employer shall —

- (a) ensure that his employee is not exposed to noise above an exposure limit value; or
- (b) where an exposure limit value is exceeded, forthwith –
  - (i) reduce exposure to noise to below the exposure limit value;
  - (ii) identify the reason for that exposure limit value being exceeded; and
  - (ii) modify the organisational and technical measures taken in accordance with the provisions of these regulations.

(2) An employer shall adapt any measure taken in compliance with the requirements of these regulations to take account of any employee or group of employees whose health is likely to be particularly at risk from exposure to noise.

8. (1) Every employer shall –

- (a) ensure, so far as is practicable, that anything provided by him in compliance with his obligations under these regulations to or for the benefit of his employee, other than personal hearing protectors, is fully and properly used; and
- (b) ensure that anything provided by him in compliance with his obligations under these regulations is maintained in an efficient state, in efficient working order and in good repair.

(2) Every employee shall –

- (a) make full and proper use of the personal hearing protector provided to him by his employer and of any other control measures provided by his employer; and
- (b) where he discovers any defect in any personal hearing protectors or other control measures as specified in subparagraph (a), report the defect to his employer as soon as is practicable.

9. (1) (a) Where the risk assessment indicates that there is a risk to the health of his employee who is, or is liable to be, exposed to noise, the employer shall ensure that his employee is placed under suitable health surveillance at pre-employment stage and on a yearly basis, which shall include testing of his hearing, cost of which shall be borne by the employer.

(b) Any health surveillance should be carried out by an Occupational Health Physician or an Otorhinolaryngologist.

(2) The employer shall ensure that a health record in respect of his employee, who undergoes health surveillance in accordance with paragraph (1), is made and maintained and that the record or a copy thereof is kept available in a suitable form.

(3) The employer shall –

- (a) on reasonable notice being given, allow an employee access to his personal health record; and
- (b) after obtaining the consent of an employee, provide copies of the health records of the employee as may be required.

(4) Where an employee is found to have identifiable hearing damage as a result of health surveillance, his employer shall ensure that the employee is examined by an otorhinolaryngologist.

(5) Where an otorhinolaryngologist considers that the damage is likely to be the result of exposure to noise, the employer shall –

- (a) ensure that a suitably qualified person informs the employee accordingly;
- (b) review the risk assessment;
- (c) review any measure taken to comply with these regulations, taking into account any advice given by an otorhinolaryngologist;
- (d) consider assigning the employee to alternative work where there is no risk from further exposure to noise, taking into account any advice given by an otorhinolaryngologist;
- (e) ensure continued, health surveillance and provide for a review of the health of any other employee who is, or is likely to be, exposed to noise; and
- (f) notify the Director, Occupational Safety and Health of all cases of noise induced hearing loss as specified in the Third Schedule.

(6) An employee to whom this regulation applies shall, when required by his employer and at the cost of his employer, present himself, during his working hours, for such health surveillance procedures as may be required for the purposes of paragraph (1).

**10.** (1) Where an employee is, or is liable to be, exposed to noise which is likely to be at or above a lower exposure action value, his employer shall provide the employee with suitable and sufficient information, instruction and training.

(2) Without prejudice to the generality of paragraph (1), the information, instruction and training provided shall include –

- (a) the nature of risks from exposure to noise;
- (b) the organisational and technical measures taken in order to comply with the requirements of these regulations;
- (c) the exposure limit values and upper and lower exposure action values;
- (d) the significant findings of the risk assessment, including any measurements taken, with an explanation of those findings;

- (e) the availability and provision of personal hearing protectors and their correct use;
- (f) the manner to detect and report signs of hearing damage;
- (g) the entitlement to health surveillance and its purposes; and
- (h) safe working practices to minimise exposure to noise.

(3) The information, instruction and training required under paragraph (1) shall be updated to take account of significant changes in the type of work carried out or the working methods used by the employer.

(4) An employer shall ensure that any person, whether or not his employee, who carries out work in connection with the employer's duties under these regulations, has suitable and sufficient information, instruction and training.

**11.** Where a duty is placed by virtue of these regulations on an employer in respect to his employees, the employer shall, so far as is reasonably practicable, be under a like duty in respect of any other person at work and who may be affected by the work, provided that the duty of the employer –

- (a) under regulation 9 shall not extend to persons who are not his employees; and
- (b) under regulation 10 shall not extend to persons who are not his employees, unless those persons are present at the workplace where the work is being carried out.

**12.** An employer shall, where rest facilities are made available to his employee, ensure that exposure to noise in these facilities is reduced to a level suitable for their purpose and conditions of use.

**13.** An employer shall consult his employee concerned or his representative regarding the measures to be taken to meet the requirements of these regulations.

**14.** (1) An employer shall ensure that a sufficient number of adequate ear protectors are kept at his workplace.

- (2) Any person who designs, manufactures, imports or supplies –
  - (a) any article for use at work, shall provide adequate information concerning the noise likely to be generated by that article, where it is likely to cause any employee to be exposed to the upper exposure action value or above and to the exposure limit value or above;
  - (b) any hearing protectors for use at work, shall provide adequate information related to the attenuation of, and protection from, noise level provided by such equipment.



**15.** Regulation 14 of the Occupational Safety, Health and Welfare (Woodworking Machines) Regulations 1989 is revoked.

**16.** These regulations shall come into operation on 9<sup>th</sup> May 2013.

Made by the Minister on 9<sup>th</sup> May 2012

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**FIRST SCHEDULE**  
[Regulation 2]

**PART I**

**DAILY PERSONAL NOISE EXPOSURE LEVELS**

1. The daily personal noise exposure level,  $L_{EP,d}$ , which corresponds to  $L_{EX,8h}$  defined in international standard ISO 1999: 1990 clause 3.6, or as may be amended, is expressed in decibels and is determined by using the formula –

$$L_{EP,d} = L_{Aeq,T_e} + 10 \log_{10} \left( \frac{T_e}{T_0} \right)$$

where –

- (a)  $T_e$  is the duration of the person's working day, in seconds;
- (b)  $T_0$  is 28,800 seconds (8 hours); and

$L_{Aeq,T_e}$  is the equivalent continuous A-weighted sound pressure level, as defined in ISO 1999:1990 clause 3.5, in decibels, that represents the sound the person is exposed to during the working day.

2. Where the work is such that the daily exposure consists of 2 or more periods with different sound levels, the daily personal noise exposure level ( $L_{EP,d}$ ) for the combination of periods is determined by using the formula –

$$L_{EP,d} = 10 \log_{10} \left[ \frac{1}{T_0} \sum_{i=1}^{i=n} (T_i 10^{0.1(L_{Aeq,T_i})}) \right]$$

where –

- (a)  $n$  is the number of individual periods in the working day;
- (b)  $T_i$  is the duration of period  $i$ ;
- (c)  $(L_{Aeq,T})_i$  is the equivalent continuous A-weighted sound pressure level that represents the sound the person is exposed to during period  $i$ ; and

$i=n$

- (d)  $\sum_{i=1} T_i$  is equal to  $T_e$ , the duration of the person's working day, in seconds

$i=1$

## PART II

### WEEKLY PERSONAL NOISE EXPOSURE LEVELS

The weekly personal noise exposure,  $L_{EP,w}$ , which corresponds to  $L_{EX,8h}$  defined in international standard ISO 1999: 1990 clause 3.6 (note 2), or as may be amended, for a nominal week of five working days, is expressed in decibels and is determined using the formula —

$$L_{EP,w} = 10 \log_{10} \left[ \frac{1}{5} \sum_{i=1}^{i=m} 10^{0.1(L_{EP,d})_i} \right]$$

where —

- (a)  $m$  is the number of working days on which the person is exposed to noise during a week; and
  - (b)  $(L_{EP,d})_i$  is the  $L_{EP,d}$  for working day  $i$ .
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## SECOND SCHEDULE

[Regulation 2]

### PEAK SOUND PRESSURE LEVEL

Peak sound pressure level,  $L_{Cpeak}$ , is expressed in decibels and is determined by using the formula –

$$L_{Cpeak} = 20 \log_{10} \left[ \frac{p_{Cpeak}}{p_0} \right]$$

where –

- (a)  $p_{Cpeak}$  is the maximum value of the C-weighted sound pressure, in Pascals (Pa), to which a person is exposed during the working day; and
  - (b)  $p_0$  is 20  $\mu$ Pa.
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**THIRD SCHEDULE**  
[Regulation 9]

**NOISE INDUCED HEARING LOSS REPORTING CRITERIA**

<b>CRITERIA</b>	<b>REPORT</b>	<b>DO NOT REPORT</b>
1. Hearing threshold level at 4000 Hz averaged over both ears	> 40 dB	< 40 dB
2. Hearing threshold level at 4000 Hz averaged over both ears	> age (in years)	< age (in years)
3. Difference in hearing threshold level between both ears at 4000 Hz	< 25 dB	> 25 dB (*)
4. Hearing threshold level	< 25 dB	> 25 dB (*) Left ear at 1000 Hz
5. Hearing threshold level	< 25 dB	> 25 dB (*) Right ear at 1000 Hz
6. Sound levels at workplace	> 80 dB (A)	< 80 dB (A)
7. Previous or present ear conditions/disease*	No abnormalities	Abnormalities

\* Further otological investigation is required.

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