

## SCHEDULE 1

Regulations 4(1) and 6(5)

## Hand-Arm Vibration

**Part I-Daily exposure to vibration**

The daily exposure to vibration ( $A(8)$ ) 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.

Where both hands are exposed to vibration, the greater of the two magnitudes  $a_{hv}$  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:

**Status:** This is the original version (as it was originally made).

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

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).

## SCHEDULE 2

Regulations 4(2) and 6(5)

### Whole-Body Vibration

#### Part I-Daily exposure to vibration

The daily exposure to vibration ( $A(8)$ ) 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  $\text{m/s}^2 A(8)$ .

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:

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

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).