

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 .

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

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 the purposes of regulation 6(5).