

Construction noise and the way it is measured

The typical noise limit will be 75 dBA during standard construction hours.

Best practicable option

Every site operator has a duty to adopt the best practicable option (BPO) to ensure noise does not exceed a reasonable level. This means that bearing cost in mind, everything should be done on site to minimise noise, even if the recommended upper limits in the Standards are not being exceeded. A much lower level may be easily achieved and if so, this level is what is legally required.

The decibel scale

This is a logarithmic scale and is similar to the Richter earthquake scale where small increases have a large effect. For example 85 decibels is 10 times more intense than 75 decibels and 95 decibels is 100 times more intense than 75 decibels. This log scale has been used to compress the numbers involved because the human ear is sensitive over such a wide range of sound levels.

Adding decibels

To give an example of how decibels add together – if two diggers of equal noise level operate together (each having a sound level of 75 dBA at 10 metres), the result will be a combined sound level of 78 dBA at 10 metres. This is only a 3 dBA increase and the effect will be just noticeable to most people.

Decibel units quoted in the Standards

L10

This is the noise level exceeded for 10 per cent of the time of the measurement period. For example, a noise limit of L10 75 dBA means that over a period of one hour, the noise from construction activities can only exceed 75 dBA for a total of six minutes or, one minute over a period of 10 minutes.

Leq

This is a time-averaged level and is equivalent to the average energy over the whole measurement period. Leq, or LAeq as it is known, has become the preferred international descriptor for environmental sound and will be incorporated into all new Standards.

L95

This is the level exceeded for 95 percent of the time and represents the background level without any construction noise present.

Lmax

This is the maximum level measured over a time period, but it is not the same as, or not as high as, an individual peak level.

Difference between L10 and Leq

In practice the L10 is around 2 or 3 decibels higher than the Leq.