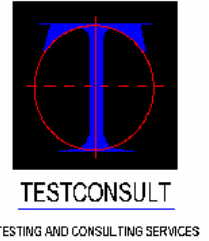


STRUCTURES DATA SHEET 12

Noise Monitoring

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Why carry out noise monitoring? - Excessive exposure to noise can lead to permanent damage to a person's hearing. The risk and the amount of damage that may be caused depend not only on the level of the noise, but also on the time that the person is exposed to it.

Noise in the workplace is common and if excessive, can be detrimental to both efficiency and safety. The sources of noise and vibration and the implications that may result from elevated levels need to be considered in many circumstances. For instance, Local Authorities will not give planning approval if background noise from roads, railways or air traffic is above certain levels (PPG 24).

Noise pollution, particularly from construction sites can be a nuisance to local residents. The Party Wall Act (1996) states that 'building work must not cause any unnecessary inconvenience to the owner or occupier of an adjoining property'. Placing of monitoring instrumentations both prior to and during the works will offer assurances to either party should any disputes relating to inconvenience or possible damage occur.



The World Health Organisation (WHO) guidance for daytime noise levels are "General daytime outdoor noise levels of less than 55dB(A) Leq are desirable to prevent any significant community annoyance". The WHO position regarding noise levels at night may be expressed as "in order to enjoy the full recuperative effects of sleep, levels should not exceed Laeg 35dB" Allowing for a reduction of 13dB(A) for the typical insulation properties of a wall, which includes a window that does not fit particularly well, and say an additional 3dB(A) for facade reflection effects, then a facade level of Laeg 45dB is the threshold at which there should be concern about noise.



In the UK it is important that noise monitoring equipment used is able to make measurements that will enable the user check compliance with the Noise at Work Regulations 1989. This legislation has been enforced since 1990. In the European Union, the limits and restrictions of 86/188/IEE will apply.

The noise at work regulations set out the legal duty of employers to protect their employees from hearing damage from excessive noise levels. These regulations also include duties for designers, manufacturers, importers and suppliers of equipment.

Sound level meters are designed to measure sound in approximately the same way as the human ear and to give reproducible measurements of the sound pressure fluctuations present at the measurement position. For Noise at Work assessment it is necessary to have an Integrating or Integrating-Averaging sound level meter. This should have the ability to measure Leq, which is the measure of average sound pressure level during a period of time, in dB. The instrument should also be able to measure Peak levels, the Peak being the maximum value reached by the sound pressure at any instant during a measurement period in dB with a 'C' frequency weighting.