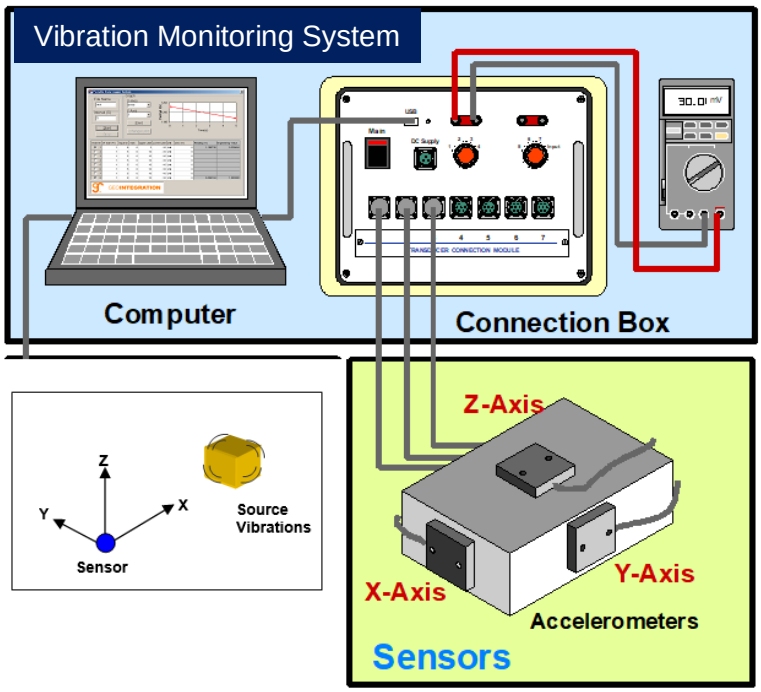
VIBRATION AND NOISE LEVEL MONITORING



Measurement of induced vibration and acoustic level of sound during construction activities for quantification against standard threshold can be carried out by vibration and sound monitoring devices. Vibrations and noises created from occupational and industrial activities also can be monitored. The vibration monitoring is carried out in accordance with DIN 4150 (German Institute Standards) while sound level monitoring is carried out as per ASTM E1014.

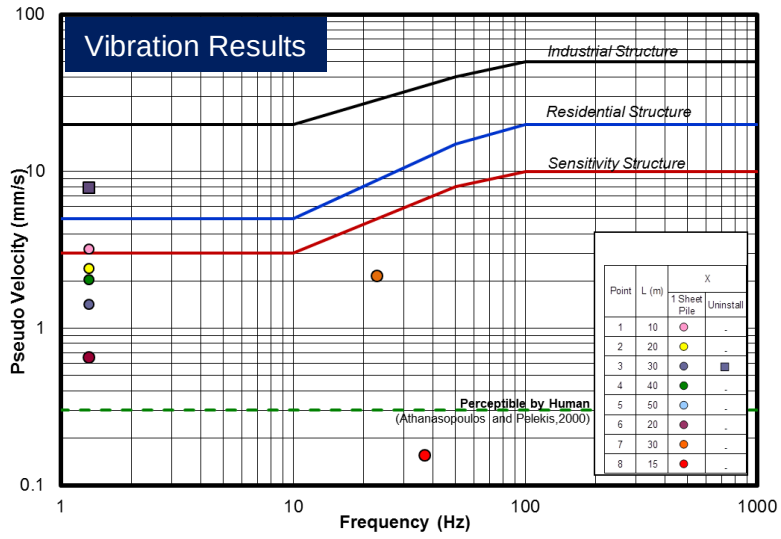
Vibrating monitoring system consists of portable computer, transducer connection and accelerometers. Magnitude of vibration can be expressed in acceleration in which set of accelerometers are arranged in orthogonal direction to record the acceleration history of an event which is then integrated to determine the velocity for given locations. Then frequency for maximum velocity can be determined by analysing velocity-time spectrum through Fast Fourier Transformation (FFT).

Whereas for sound level measurement, sound level meter complying with ANSI S1.4 Type 2 instrument is placed at given locations with the microphone oriented towards the source at user's level height. The diaphragm of microphone responds to change in air pressure caused due to sound waves and converted into electrical signals. Then, the sound level meter averages the alternating current (AC) signal form the microphone to direct current (DC) signal by root-mean-square (RMS) circuit. Then the, the output from RMS circuit which is linear voltage is passed through logarithmic circuit which gives readout of sound in decibels (dB).

Both of these monitoring methods are fast, cheap and can be carried out during ongoing construction activities. The results are compared with the limiting threshold to set up a criterion for vibration and noise pollution control.

Vibration Equipment

Noise Equipment



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