



## Measurement-technological vibration analysis

### Tasks

The measurement-technological coverage of oscillation emissions e.g. immissions as a basis for vibration technological measurement to observe legally laid down limit values (see graph 1).

As can be seen from graph 2, different limit values must be observed, depending on the location of the machine. This standard aims at laying down principles according to which mechanical shocks can be measured in buildings, enabling the determination of effects of vibrations on human beings and building construction.

Another relevant example for the necessity of a vibration analysis is the mounting of high-precision coordinate measuring machines as well as of other testing, measuring or grinding machines. As a rule, measurement-tests must be carried out on proposed locations for such machines to ensure that local ground oscillations do not exceed permissible values.

To this end oscillation accelerations within a given frequency spectrum (1–100 Hz) are taken down, because a simple summation value measurement would give only an approximate indication of the exact environmental conditions. The evaluation of the power-path signals takes place with a Fast Fourier analyser, indicating the measured value for each frequency of the spectrum (vibration acceleration in g). Should the interferences (vibration magnitude) be outside the admissible range, a suitable insulation can be worked out with the assistance of our computer calculation programs.

Very accurate and sensitive vibration analyses at low frequencies are carried out with a high-tec Geophone. With the Geophone it is possible to measure vibration amplitudes from  $0,01 \mu\text{m/s}$  at frequencies from 0,2 to 30 Hz. Especially in the nano-tec and semiconductor industry as well as in the field of cutting edge 3D metrology absolute accurate vibration measurements is of great importance to achieve optimal and customer specific vibration isolation.



Measurements of vibration and mechanical shocks. We use the most modern measurement equipment (FFT-Analyser + PC calculation programs). Our decades of experience in the field of vibration technology guarantees technically and economically reliable solutions for your problems.

