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Sound Level Meter - Application notes on traffic noise

Measurement of road traffic noise in Germany / Europe

Nowadays, road traffic is the strongest source of noise pollution in industrialized countries such as the Federal Republic of Germany. Noise occurs wherever air turbulence occurs or where turbulent air occurs on surfaces. To determine the level of noise pollution, a sound level meter is used.

This meter determines the so-called sound pressure level at the immission location. The measurement results for such sound level measurements are expressed in the unit dB (A). Different factors can influence the measurements. This includes traffic volume, for example. Simply spoken, in case of traffic volume it goes about the vehicles participating in the traffic. Vehicles associated with traffic/transport include both cars and trucks, as well as rail transport and other motorcycles.



In addition to the traffic volume, such aspects as the road surface condition, the speed of movement and the way of driving must also be considered. Basically, there is a distinction between road and rail vehicles. This is due to the fact that the human ear perceives traffic on the railways as a much quieter than the traffic of cars, trucks and other motorcycles. Technically, this is referred to as "rail bonus". In fact, there is no nationwide regulated noise protection in the Federal Republic of Germany.

However, the Federal Immission Control Act (BImSchG) regulates some areas by law. Nowadays, the citizen can find information about noise pollution online. For example, the railway federation and the federal state of North Rhine-Westphalia have created noise mapping, where both the noise on the rail and on normal roads is represented. There, even the time of the day is also taken into account, which is also considered in all other local regulations concerning the road traffic noise.

Usually, the time periods are regulated in such a way, that there is one time zone during the day and one time zone during the night. Then, a lower noise pollution / load applies to the zone between 22.00 and 06.00 o'clock than to the zone between 06.00 and 22.00 o'clock. The DIN18005 also regulates sound insulation in urban planning. It is aimed at cities and municipalities, urban planners, architects and building inspectors.



The DIN18005 regulates the subdivision of various traffic routes. As already mentioned, there is a strict distinction between road and rail. The roads include federal motorways, federal roads, country roads and community roads.

The rail sector includes long-distance routes, short-distance routes, short-distance routes without freight transport and tram routes. In addition, there are different classifications of the traffic areas. This includes, pure residential areas, general residential areas (including weekend and holiday house areas), small settlement areas (including camping areas), cemeteries, small gardens and parks, special residential areas, village areas, mixed areas, core areas, industrial areas, as well as other special areas (insofar as they need protection).