

ACOUSTIC SERVICES

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Any human activity is often related to a sound level more or less high. Depending on the kind, duration, place and moment where they are generated, sound can be annoying, uncomfortable and can alter physiologic and psychological welfare where they are considered pollution.

The main environmental noise sources are:

- 1-Traffic: cars, trains and planes
- 2-Industrial and recreational activities
- 3-Neighborhood

With the objective of controlling noise level in Catalonia, 16/2002 law of 28th of June 2002 for the protection against noise pollution is applied.

With this law, a response to citizen concerns and with this objective the criteria that the European Union has established in the green book against noise is applied. This is captured in the community norm, specially in the regulation principle within directive project of European Parliament on environmental noise evaluation and management.

The main objectives of this law are: consideration of acoustic pollution from the emission point of view, division of territory in acoustic sensitive zones in function of certain quality objectives, regulation of a specific system for the transport infrastructure, establishment of noisy zones in order to guarantee minimum acoustic quality in new construction zones, establishment of many measures for acoustic impact minimization in the existing constructions affected by noise and vibrations[1].

With the objective of improving the quality of construction and promote innovation and sustainability, At the end of 2007, a Construction code was approved which is the norm that settles the requirements that buildings have to comply regarding the basic security and habitat requirements given in the Order and Building law; and the 14th article gives special attention to basic requirements of protection against noise[2].

To know if this norm is applied or not, acoustic surveys have to be carried out and based on the objectives, we can talk about environmental acoustic surveys or maybe architectural acoustics.

The SARTI-LM group has qualified technicians and the necessary equipment in order to carry out noise level and acoustic isolation measurements, and develop acoustic isolation projects if it is necessary. In addition, the SARTI-LM group is included in a list of companies of the Generalitat de Catalunya, that offer acoustic pollution services.

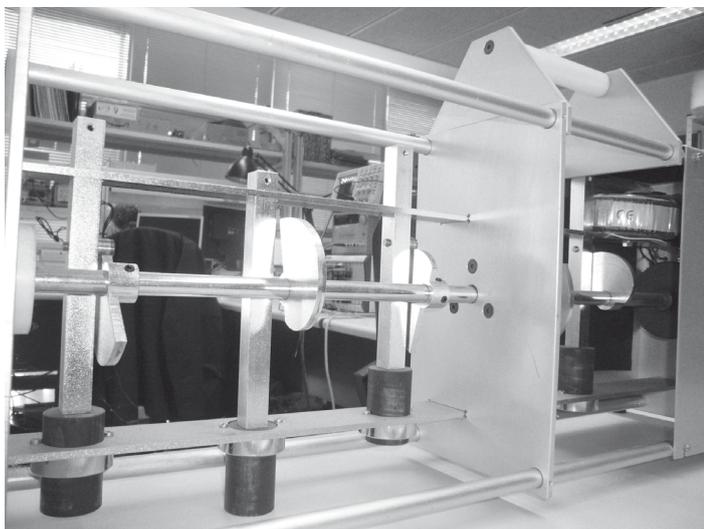


Figura 1: Impact pattern

The basic equipment that is available to do such measurements are:

- 1-SYMPHONIE Type 1: Type 1 two channel soundmeter that allows incorporating an accelerometer for vibration measurements. This equipment has both channels calibrated under our calibration plan with certificate numbers: 06/30215911 (channel 1) and 06/30215913 (channel 2). The calibration was carried out by Applus, accredited lab with accreditation number: 25/LC360.
- 2-Dodecahedron speaker (12 outputs, omnidirectional).
- 3-Audio preamplifier and amplifier
- 4-Acoustic and vibration calibrator
- 5-Impact standard device
- 6-An accelerometer and two microphones
- 7-Data storage and processing system (Symphonie)

After many surveys, we can say that there is much work to do to achieve adequate conditions in order to improve life quality that is affected by noise.

REFERENCES

- [1] *Llei 16/2002, de 28 de juny de 2002, de protecció contra la contaminació acústica. «BOE» 177, de 25-7-2002.*
- [2] *REAL DECRETO 1371/2007, de 19 de octubre, por el que se aprueba el documento básico «DB-HR Protección frente al ruido» del Código Técnico de la Edificación y se modifica el Real Decreto 314/2006, de 17 de marzo, por el que se aprueba el Código Técnico de la Edificación.*



Figura 2: Dodecahedron speaker and microphone