

Dimensional Metrologia at Present

Introduction.

Nowadays metrology is in all the equipments, instruments habitually used for the public, though they are not aware of it. In this article we will describe the current function of the laboratories credited in relation to the companies.

Content.

The user does not normally realize metrology is present in his/her daily life, but the certain thing is that it surrounds us. We can find examples in any area; for example when we are going to put petrol in our vehicle, the spout has to be checked by a technician to ensure the correct exit flow so as not to cheat the consumer. The thermometers that we use have to pass a quality control test: equipment is checked by technical personnel so we can ensure that the measurement we obtain is correct. These two cases provide two clear examples of the importance of the metrology. We have to clarify that a measurement of a piece of equipment will never be exact (true and precise), but we can minimize the uncertainty ** this way we know that the obtained measurement does not overcome a tolerance that we assign.

At present metrology laboratories are divided in two big classes. Firstly, there are laboratories that are credited, by the ISO 17025 for an entity of accreditation. In Spain only the ENAC [Entidad Nacional de Acreditación] can credit laboratories with the ISO 17025:2005 to carry out calibrations. These laboratories have passed an auditory in both

save themselves the traceability of a few equipments boxes of high quality, beside of supporting a space and specialized personnel. The criterion used by a company to choose an external accredited laboratory is well-being, since this way the clients agree to the calibrations of the external laboratory and they will only worry about the manufacturing process and not about the measuring equipments used to perform the quality control. We have to bear in mind that ENAC's accreditation has international validity, so the results of the certificates are valid for the whole Europe, since nowadays ENAC holds multilateral agreements with ILAC [International Laboratories Accreditation of Cooperation] and IAF [International Accreditation Forum]. ENAC has therefore created the brand name «ENAC/MLA» to identify technical competence worldwide.

A clear example of this process is Laboratorio de Metrología y Calibración [LMC] of the CTVG (Centre Tecnològic Vilanova i the Geltrú) with credited nº 152/LC375, which performs the calibration of the boxes used in different companies. In this way these enjoy a quality level versus the client. To carry this out, laboratory technical personnel have been trained and equipment has been bought to realize a good service.

** Trazability is the chain that it is possible to follow to come to the primary boss. This way we assure that the measuring equipments is calibrated by equipment with a minor uncertainty.*

*** Uncertainty is the numerical estimation that characterizes the interval of values in the one that places the real value of the measured magnitude.*

Conclusion

So that a company improves its yield and devotes itself to production with guarantees, it is recommended



management and technicians and are qualified to perform calibrations that give a great deal of confidence to the client. Secondly, other laboratories can possess some certification, for example the ISO 9001 and the bosses of calibration with trazability *, but they will never give the confidence of an accredited laboratory.

The current trend of the companies is to externalize the control of equipments boxes, to be able to perform a quality control in production correctly. Thus, they

that externalizes the measuring equipments boxes it uses for the quality control. The best option will always be to choose a laboratory that is credited by the ISO 17025:2005. To verify if a laboratory is credited, see ENAC's web. [[www. ENAC.es](http://www.ENAC.es)]