

ISO 376 Calibration Standard

This standard has been elaborated within the scope of the normalization of metallic materials and is entitled:

" Calibration of force measurement instruments
used for the verification of uniaxial testing machines "

Apart from the calibration process itself, this standard establishes a classification of these instruments according to precision criteria. Such criteria are established on the basis of metrological characteristics registered during calibration, for which admissible maximum values are defined. The same procedure has been adopted for the inaccuracy of calibration forces.

Four precision levels have been defined :

- level 00
- level 0,5
- level 1
- level 2

Level 00 is the best. It is reserved for measurement standards of the highest metrological level and can be considered as equivalent to a global measurement inaccuracy comprised between 0.02% and 0.05%.

Level 0.5 applies to dynamometers used for the calibration of the best precision testing machines. Its level of global measurement inaccuracy is comprised between 0.1% and 0.25%

Levels 1 and 2 are reserved for dynamometers used for the verification of ordinary or field testing machines.

This levelled approach comes from a long-established practice used before the current concept of measurement inaccuracy was implemented. A draft appendix on the calculation of calibration inaccuracy has been elaborated and should be incorporated during the next revision of the standard.

ISO 376 is the only standard at an international level covering dynamometer calibration and its original scope has been extended to cover several other aspects such as non-metallic materials, hard materials, concretes, etc.