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Development of Force Transducers for Metrological Verification of Mechanical Testing Machines

Manuel P. Castro, José G. Correia, António M. Baptista

ABSTRACT

The National Laboratory of Civil Engineering (LNEC) performs an important role on the particular domain of metrology of forces as far as Portugal is concerned. For this purpose, LNEC has created a departmental unit which is in charge of materials mechanical testing machines verification.

An important number of users of testing machines metrological verification service are small companies equipped with load machines for compression testing of concrete specimens. Some particular circumstances concerned with this metrological verification induced the development of force transducers specially designed to work as travelling standards.

The main purpose of the paper is to present the investigation carried out at LNEC about this particular matter. Operating principle, design criteria, construction technique and calibration tests are the main topics described in the paper.