COVER LETTER

The present paper is an extended research of our previous paper: “Measurement of macro-scale indentation modulus using the primary hardness standard machines at INRIM” presented in the IMEKO TC3, TC5 and TC22 Conference in Helsinki, in 2017, and it is recommended by the TC5 Board for publication in the Special Issue of ACTA IMEKO.

In the present submission several improvement and extensions, with respect to IMEKO conference paper have been introduced.

The title of the new submission is: “Indentation modulus at macro-scale level measured from Brinell and Vickers indenters by using the primary hardness standard machine at INRiM”

In particular the main additional information regards the extension of the method for the indentation modulus determination from Brinell hardness test, beyond the Vickers method. As a matter of facts, only Vickers method was presented in the conference paper.

Section 2 “INDENTATION MODULUS” has been improved and extended by introducing the physical quantities needed for both Vickers and Brinell methods implementation. The theoretical background has been improved.

Section 3 “EVALUATION OF FRAME COMPLIANCE” has been widely extended by adding 3 subsection in which are defined the procedures to evaluate the frame compliance from Vickers and Brinell indentation analysis. In particular for Brinell indentation the effect of piling-up and sinking-in are evaluated and a more relevant data collection of compliance is provided.

Section 6 “EXPERIMENTAL RESULTS” has been deeply renewed. All experimental data, used for the indentation modulus calculation, from Vickers and Brinell test, are shown.

Section 7 “EVALUATION OF INDENTATION MODULUS” is added. In this section comments on the accuracy of the methods and analysis of experimental results are indicated.

Reference list is upgraded, according to the extension of the present paper.

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