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Fabrication on Prototype of Depth Calibration Standard Machine for Elastomer Hardness Tester

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The prototype of depth calibration standard machine was fabricated to calibrate the depth of indentation for elastomer hardness tester. According to ISO 18898, ASTM D2240 and ASTM D1415, the measurement of indentation depth by a measuring device comprising a length-measuring system shall be in reference with the pressure foot of the elastomer hardness tester. Nation Institute of Metrology (Thailand); NIMT develop the depth calibration standard which can measure the indentation depth with always reference at the surface level of pressure foot of the hardness tester at each hardness scale. The calibration of the prototype of depth calibration standard machine was performed to provide the accuracy of the measurement of the machine which can be a suitable standard machine for depth of indentation within 1 μm complied with the requirement of ISO and ASTM standard. Furthermore, the prototype of depth calibration standard machine was validated to another NIMT method, which used the two length-measuring systems. The comparison results between 2 methods showed in a good agreement within 2 μm .

Therefore, the NIMT prototype of depth calibration standard machine can be used as a depth calibration standard for elastomer hardness tester provided the required accuracy of measurement complied with ISO 18898, ASTM D2240 and ASTM D1415.

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