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The prototype of high stiffness load cell for Rockwell hardness testing machine calibration according to ISO 6508-2:2015.

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The Rockwell hardness test penetrated depth normally not more than 0.260 mm. Using commercial load cell cannot achieve the force calibration proposed. For these reasons, the high stiffness load cell fabrication, HSL is subject. Its obviously advantage is deformed less than 0.020 mm at 150 kgf maximum load applied. The HSL prototype was designed in concept of direct compression then confirmed with finite element analysis, FEA. The results showed that it meet class 1 accuracy according to ISO 376:201. And maximum deformation lower than 0.012 mm at capacity. It is satisfactory to use for test force calibration of Rockwell hardness testing machine according to ISO 6508-2:2015[1] properly.

Keywords: Rockwell hardness testing machine, Test force calibration, High stiffness load cell.

Primary authors: Dr PAKKRATOKE, Montree (Metrologist); Mr SANPONPUTE, Tassanai (Metrologist)

Presenter: Dr PAKKRATOKE, Montree (Metrologist)

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