

Certificate of Calibration

Date of Calibration: September 16, 2010

Magnification Used: x100

Hardness Test Block Serial Number: SAMPLE

Hardness Load & Scale: 30 Kg Vickers

This block was calibrated on Standardized Laboratory Tester serial number LAB219 in compliance with ASTM E384-10e2. The test force, optics, time cycle & indenter of the Standardized Laboratory Tester have been verified using equipment traceable to National Standards. The National Standard traceability numbers of the Standardized Laboratory Tester are: 822/270149, NIST WINACTS Version 1.2, 821/264674-01, 821/268344-03 & MRS-2 S/N R21-145.

This test block calibrated using Instron Procedure ICA-5-164.

The calibration performed is in compliance with ASTM E384-10e2, ANSI Z540.1-94 (2002) & ISO 10012 (2003).

RESULTS

Certified Mean Hardness Value of Test Block : 0.4111 (mm) 329 HV 30

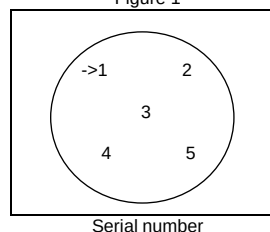
Standard Deviation of the 5 impression diagonals: 0.0007 (mm)

Measured Values:

Indent 1	Indent 2	Indent 3	Indent 4	Indent 5	Average length	Average HV
mm	mm	mm	mm	mm		
0.4108	0.4100	0.4102	0.4123	0.4107	0.4111	329
0.4103	0.4124	0.4119	0.4121	0.4102		

Indent #1 is located in the upper left portion of the test block and is indicated by an arrow. The rest of the indents are placed as shown in figure 1

Figure 1



Test Block Repeatability Tolerance:

Test Block Repeatability Tolerance in (%)	Test Block Repeatability Tolerance in mm
2.0% of mean diagonal in mm	0.0082 mm

Actual Test Block Repeatability:

Actual Test Block Repeatability in (%)	Actual Test Block Repeatability in mm
0.5 %	0.0022 mm

Testing Machine Indirect Verification Tolerance From ASTM E92-82 (2003e2):

Machine Indirect Verification Tolerance in mm	Machine Indirect Verification Tolerance
+/- 0.0082 mm	+/- 14 HV 30

The measurement uncertainty for a confidence interval of not less than 95% is: +/- 9 HV 30
+/- 0.0054 mm

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with Appendix X2 of ASTM E10-08.

Temperature: Calibration made at 23 Degrees Celsius
Humidity: Calibration made at 29 % R. H.

Calibrated by: Joe Sample Date: September 16, 2010

Calibration approved by: _____ Title: Approved Signatory

Note: This certificate shall not be reproduced except in full, without the approval of Wilson Hardness.

ICA-5-312 Rev 4