DAVID L. ELLIS COMPANY, INC.

NVLAP Calibration 200127-0

310 Old High Street, P.O. Box 592, Acton, MA 01720
Fax: 978-897-0844 Voice: 978-897-1795 sales@hardness-testblocks.com www.hardness-testblocks.com

Certificate of Calibration and Conformance for Brinell Test Block

Certificate Number 0775

Hardness HBW	419		Operator	CAE
Serial Number	0775'		Method ASTM	E10-18
Force KGF	3000		Date Calibration	02/05/19
Force in kN	29.4		Tol. +/- HBW	13
Ball diameter mm	10		Code	P
Data	mm	HBW	Uncertainty	HBW
Reading Ref 1	2.981	420	Unc Test Block	4.3
Reading 2	2.988	418	Unc mm	0.0038
Reading 3	2.987	418		
Reading 4	2.982	420		
Reading 5	2.983	419		
Average	2.984	419	Temp deg C	23
High	2.988	418	Humidity %	35
Low	2.981	420	Notes	0.23
Repeatabilty	0.007			
STD DEV	0.003		Uncertainty of testblock. Use this value during indirect verification. (K=2)	
This block calibrated in Maynard, MA				

419 HBW	10 3000	2.984 mm

The above calibration was verified with the following equipment, which is traceable to NIST, NPL or PTB.

United Load Cell
Serial No: F30686

Stage Micrometer #0024 in 0-7 mm
N.I.S.T. Test No. 821/264390-00

United STM-HB-2000A, TB II
Serial Number 0105510

Thomson Precision Ball, 1,2.5,5,10mm

This standardized was calibrated in accordance with ASTM E10 annex A4 using indenter/loads combinations traceable to Ellis hardness levels through laboratory standardizing machine. The standardizing machines are directly verified according to ASTM E10 annex A2 using devices that are traceable to NIST either directly or through a NVLAP approved laboratory.

Expanded uncertainty uses coverage factor K=2, providing a confidence level of approximately 95%.

This test report is not to be used to claim product certification, approval or endorsement by the David L. Ellis Company Inc., NIST, NVLAP or any government agency.

This indent was calibrated according to ASTM E10 annex A4 standard, ANSI (NCSL) Z540-1, (ISO) 10012, and ISO/IEC 17025 by David L Ellis Co., Inc. , NVLAP 200127-0 Calibration Laboratories.

Cynthia a. Ellis
Representative