

DAVID L. ELLIS COMPANY, INC.

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Certificate of Calibration and Conformance for Rockwell Test Block

FOR: THE L.S. STARRETT COMPANY
121 CRESCENT STREET, ATHOL, MA USA 01331

91.38	HRBW
Serial Number	1718360
Date Cal	02/15/10
Temp Deg C	21
HUMID %	42
Note 1- Uncertainty of secondary standardizing machine that calibrated this testblock.	
Note 2- Uncertainty of this calibrated secondary testblock. Use this value for On-Site Unc. during indirect verification.	
K=2	
NIST Test Speed	
Dwell Minor Load / 3 sec	
Dwell Major Load / 5 sec	
Dwell Recovery / 4 sec	

Force KGF	100	Block Certificate No.	
Force N	980.7		1718360
Indenter type-	1/16"ball	W=carbide S=steel	
Method	ASTM E18-08b	Operator	LKM
Unc tester (1)			0.45 HRBW
Unc Block (2)			0.46 HRBW
Reading 1			91.52 HRBW
Reading 2			91.47 HRBW
Reading 3			91.33 HRBW
Reading 4			91.27 HRBW
Reading 5			91.29 HRBW
Reading 6			91.38 HRBW
Average			91.38
Std. Dev.			0.10
Min			91.27
Max			91.52
Repeatability			0.25
Tolerance. +/-			1.0 HRBW

Análise crítica:	Data: 22/10/12
(X) Aprovado	Responsável
() Aprovado condicional	
() Reprovado	

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

United Tru-Blue II Standardizing Machines
Serial Number: 281620, 211220

Star Industrial Tools UKAS
Star #ST11864

The standardized test blocks are calibrated in accordance with ASTM E18 Annex A4 using NIST Rockwell standard reference materials (SRM) 2810, 2811 and 2812. All other Rockwell scales are traceable to Ellis hardness levels through laboratory standardizing machines. The standardizing machines are directly verified according to ASTM E18 using devices that are traceable to NIST either directly or through an A2LA or 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 endorsement by the David L. Ellis Company Inc., A2LA, NVLAP or any government agency.

This block is calibrated according to A.S.T.M. E-18 standards, ANSI (NCSL) Z540-1, (ISO) 10012, ISO/IEC Guide 17025 and MIL-STD 45662A by David L Ellis Co., Inc. A2LA certificate number 1310.01 Calibration and NVLAP Lab Code: 200127-0 CALIBRATION LABORATORIES

Linda Mansfield
Representative

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Accredited 1310.01
Calibration



Lab Code:200127-0
Calibration Laboratories