

# 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

73.57	HRBW
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Serial Number	1726209
Date Cal	11/14/11
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		<b>1726209</b>
Indenter type-	1/16" ball	W=carbide S=steel	
Method	ASTM E18-08b	Operator	LKM
Unc tester (1)			<b>0.63 HRBW</b>
Unc Block (2)			<b>0.64 HRBW</b>
Reading 1			<b>73.68 HRBW</b>
Reading 2			<b>73.73 HRBW</b>
Reading 3			<b>73.46 HRBW</b>
Reading 4			<b>73.37 HRBW</b>
Reading 5			<b>73.58 HRBW</b>
Reading 6			<b>73.58 HRBW</b>
Average			<b>73.57</b>
Std. Dev.			<b>0.13</b>
Min			<b>73.37</b>
Max			<b>73.73</b>
Repeatability			<b>0.36</b>
Tolerance. +/-			<b>1.0 HRBW</b>

Análise crítica:	Data: 22 / 10 / 12
<input checked="" type="checkbox"/> Aprovado	Responsável
<input type="checkbox"/> Aprovado condicional	
<input type="checkbox"/> 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

This certificate may not be reproduced except in full

  
Accredited 1310.01  
Calibration

  
Lab Code: 200127-0  
Calibration Laboratories