



CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Cal-Chek Canada, Inc.
250 Governor's Road
Dundas ON L9H 3K3

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations to which this accreditation applies.

L1001-1
Certificate Number


ANAB Approval

Certificate Valid: 08/02/2017-08/11/2018
Version No. 002 Issued: 08/02/2017



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Cal-Chek Canada, Inc.

250 Governor's Road
 Dundas, ON L9H 3K3
 Kevin Newitt 905-628-4636

CALIBRATION

Valid to: **August 11, 2018**

Certificate Number: **L1001-1**

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Piston Foot Length Verification (With Caliper)	(0.2 to 0.3) in	1 700 µin	ASTM D1238
Piston Foot Diameter Verification (With Micrometer)	(0.3 to 0.4) in	120 µin	
PPDT Switch Calibration (With Micrometer)	(0.2 to 1.2) in	1 200 µin	
Go / No-Go Verification (With Micrometer)	(0.082 to 0.083) in	110 µin	
Bore Measurement Verification (With Bore Gauge)	(0.3 to 0.4) in	180 µin	
Orifice Length Verification (With Micrometer)	(0.3 to 0.4) in	120 µin	
Strain Instruments Extensometers Deflectometers	(0.000 1 to 1) in	(18 + 59L) µin	ASTM E83 (w/Gauge blocks)
	(0.005 to 17) in	(94 + 27L) µin	ASTM E83 (w/Cal-60)
Displacement	(0.005 to 17) in	(18 + 59L) µin	ASTM E83 (w/Gauge blocks)
	0.0001 to 1) in	(150 + 540L) µin	ASTM E83 (w/LVDT Calibrator)
	(0.005 to 3) in	(1 100 + 180L) µin	ASTM E83 (w/Dial Gauge)



Mass

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Force Compression	(0.1 to 61) lbf	(0.001 1 + 0.000 3M) lbf	ASTM E4 ASTM C39 CSA A23.2-9C Force <= 61 lbf, Dead Weights Used Force > 61 lbf, Load Cells Used
	(61 to 600 000) lbf	0.11% of Applied Load	
Force Tension	(0.1 to 61) lbf	(0.001 1 + 0.000 3M) lbf	
	(61 to 300 000) lbf	0.11% of Applied Load	
Direct Verification of Brinell Hardness Tester	(500 to 3 000) kgf	4.1 kgf	ASTM E10 – Direct Verification With Brinell Proving Ring
Indirect Verification By Standardized Test Blocks of Brinell Tester HBW @ 3 000 kgf	Low Medium High	2.5 HBW 5 HBW 8.7 HBW	ASTM E10 – Indirect Verification By Standardized Test Blocks
Rockwell Hardness Testers	HRA		ASTM E18 – Indirect Verification By Standardized Test Blocks
	Low	0.43 HRA	
	Medium	0.2 HRA	
	High	0.21 HRA	
	HRBW		
	Low	0.67 HRBW	
	Medium	0.65 HRBW	
	High	0.46 HRBW	
	HRC		
	Low	0.38 HRC	
	Medium	0.33 HRC	
	High	0.32 HRC	
	HRFW		
	Low	0.62 HRFW	
Medium	0.46 HRFW		
High	0.47 HRFW		
HRRW			
118	0.32 HRRW		



Mass

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment		
Rockwell Superficial Hardness Testers	HR15N Low Medium High	0.44 HR15N 0.24 HR15N 0.22 HR15N	ASTM E18 – Indirect Verification By Standardized Test Blocks		
	HR15TW Low Medium High	0.36 HR15TW 0.37 HR15TW 0.32 HR15TW			
	HR30N Low Medium High	0.41 HR30N 0.19 HR30N 0.30 HR30N			
	HR30TW Low Medium High	0.52 HR30TW 0.31 HR30TW 0.33 HR30TW			
	HR45N Low Medium High	0.54 HR45N 0.58 HR45N 0.29 HR45N			
	HR45TW Low Medium High	0.70 HR45TW 0.61 HR45TW 0.46 HR45TW			
	HR15YW 90	0.98 HR15YW			
	Weight Verification (With Bench Scale)	(90 to 12 000) g		0.15% of Weight	ASTM D1238

Thermodynamic

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Temperature Calibration	(20 to 400) °C	0.08 °C	ASTM D648 ASTM D1525 ASTM D1238



Time and Frequency

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Timer Verification	(10 to 600) S	1.2 S	ASTM D648 ASTM D1525 ASTM D1238

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. M = force in lbf, L = length in inches.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L1001-1.



Vice President