

Schedule

Cast Laboratories Pte Ltd
17 Tuas Ave 8
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Certificate No. : LA-2003-0290-C

Issue No. : 16

Date : 17 January 2018

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FIELD OF TESTING : Calibration and Measurement

MEASURED QUANTITIES/ INSTRUMENT/ RANGE TO BE CALIBRATED	METHOD	CALIBRATION AND MEASUREMENT CAPABILITY (CMC *)
A. MECHANICAL		
1. Pressure and Vacuum Measuring Devices		
a. Gauges		
b. Transducer		
above 16000 to 40000 psi	) BS EN 837-1 & 3 : 1998	0.24% of maximum scale value
above 10000 to 16000 psi	) BS 1780 : 1985	0.10% of maximum scale value
above 5000 to 10000 psi	) CL / CAL / SOP-03 : 2014	0.14% of maximum scale value
above 2000 to 5000 psi	)	0.12% of maximum scale value
above 1000 to 2000 psi	)	0.18% of maximum scale value
above 500 to 1000 psi	)	0.14% of maximum scale value
above 400 to 500 psi	)	0.15% of maximum scale value
above 300 to 400 psi	)	0.20% of maximum scale value
above 200 to 300 psi	)	0.24% of maximum scale value
above 100 to 200 psi	)	0.10% of maximum scale value
0 to 100 psi)	0.13% of maximum scale value
-13 to 0 psi)	0.28% of maximum scale value

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MEASURED QUANTITIES/ INSTRUMENT/ RANGE TO BE CALIBRATED	METHOD	CALIBRATION AND MEASUREMENT CAPABILITY (CMC *)
2. Force Measuring Devices		
a. Load Cells		
b. Proving Rings		
c. Hydraulic Jacks		
d. Compression Testing Machine		
e. Tension Testing Machine		
f. Universal Testing Machine		
0 to 15 kN	) BS EN ISO 7500-1 : 2015	0.021 kN
above 15 to 30 kN	) CL / CAL / SOP-06 : 2017	0.021 kN
above 30 to 50 kN	)	0.12 kN
above 50 to 100 kN	)	0.15 kN
above 100 to 200 kN	)	0.30 kN
above 200 to 300 kN	)	0.12 kN
above 300 to 400 kN	)	0.12 kN
above 400 to 500 kN	)	0.19 kN
above 500 to 1000 kN	)	0.98 kN
above 1000 to 2000 kN	)	1.7 kN
above 2000 to 3000 kN	)	1.0 kN
3. Compression Testing Machine		
a. Platen Self Alignment	) BS EN 12390-4:2000	
b. Alignment of Machine Components	) CL / CAL / SOP-05 : 2003	-
c. Restraint on movement of the upper platen)	-
4. Concrete Batching Plant		
1 to 5 kg	) CL / CAL / SOP -11 : 2014	0.20 %
above 5 to 10 kg	)	0.10 %
above 10 to 50 kg	)	0.060 %
above 50 to 100 kg	)	0.060 %
above 100 to 200 kg	)	0.030 %
above 200 to 500 kg	)	0.040 %
above 500 to 1000 kg	)	0.060 %
above 1000 to 2000 kg)	0.040 %
above 2000 to 3000 kg)	0.040 %
above 3000 to 4000 kg)	0.040 %
above 4000 kg)	0.050 %

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MEASURED QUANTITIES/ INSTRUMENT/ RANGE TO BE CALIBRATED	METHOD	CALIBRATION AND MEASUREMENT CAPABILITY (CMC *)
5. Torque Tools		
1.25 to 5 Nm	) CAL-S012-R0-Apr2017	1.0 %
above 5 to 50 Nm	) BS EN ISO 6789 : 2003	0.81 %
above 50 to 150 Nm	)	0.84 %
above 150 to 200 Nm	)	0.93 %
above 200 to 250 Nm	)	0.79 %
above 250 to 350 Nm	)	0.90 %
above 350 to 500 Nm	)	0.85 %
above 500 to 1000 Nm	)	0.84 %
above 1000 to 3000 Nm	)	0.85 %
B. TEMPERATURE		
Temperature Enclosures (by RTD)		
a. Oven / Incubator	) CL / CAL / SOP-07 : 2013	
20 °C to 80 °C	)	1.1 °C
80 °C to 150 °C	)	1.4 °C
150 °C to 200 °C	)	3.4 °C
b. Water Bath	) CL / CAL / SOP-08 : 2013	
20 °C to 100 °C	)	0.7 °C

* CMC is expressed as an expanded uncertainty estimated at a level of confidence of approximately 95 %.

Approved signatories :

Mr Tian Mong Ching	- For all calibration
Mr D Subramanian	- For all calibration
Mr Chai They Jhan	- For A2, A4 and A5
Mr Benedict Lim	- For A1 and A4
Mr R. Arunprasath	- For A1

Note :

This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and **management system requirements** that are necessary for it to consistently deliver technically valid test results. The **management system requirements** in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001.

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