



CERTIFICATE OF ACCREDITATION

This is to attest that

ADVANCED CONSTRUCTION TECHNOLOGY SERVICES

GEORGES ASSY STREET KHALIFEH BLDG.
BEIRUT 5918, REPUBLIC OF LEBANON

Calibration Laboratory CL-204

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date February 21, 2023

Expiration Date January 1, 2025



A handwritten signature in black ink, reading 'Raj Nathan'.

President

IAS is an ILAC MRA Signatory

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

ADVANCED CONSTRUCTION TECHNOLOGY SERVICES

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Contact Phone +961 1 737400

Accredited to ISO/IEC 17025:2017

Effective Date February 21, 2023

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Dial Calipers, Vernier Calipers, Digital Calipers	0 mm to 300 mm	11 µm	Using gauge block set as per DIN 862
Rulers	0 mm to 600 mm 600 mm to 1000 mm	790 µm 820 µm	Using reference ruler by comparison as per NISTIR 8028
Dial gauge	Up to 100 mm	7.6 µm	Using gauge blocks set as per USBR 1007
Sets of sieves	75 µm to 850 µm Up to 6.3 mm Up to 63 mm	4.5 µm 22 µm 150 µm	Using spherical balls as per ASTM E 11-20 standard
Digital Micrometer	0 mm to 25 mm	0.72 µm	Using Gauge block set as per ASTM A1073
Mechanical			
Weighing Balance	Up to 200 g Up to 300 g Up to 6 kg Up to 30 kg	0.10 mg 0.29 g 0.50 g 0.50 g	SOP – Balances according to ASTM E898
Weights	1 kg 2 kg 5 kg 10 kg 20 kg	0.019 g 0.019 g 0.031 g 0.031 g 0.062 g	SOP – Weights according to ASTM E617
Pressure gauge	100 bar 100 bar to 1000 bar	0.85 bar 0.87 bar	SOP – Pressure gauge according to DKD-R 6-1
Compression machine	Up to 3000 kN	1.1 kN	SOP – Comp. machine according to ASTM E4
Tensile steel machine	Up to to 200 kN 200 kN to 600 kN 600 kN to 800 kN	2.7 kN 3.0 kN 6.7 kN	SOP – Comp. machine according to ASTM E4

* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.

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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Load rings (Proving rings)	Up to 50 kN	0.39 kN	Using load cells according to SOP-Load ring
Load cell	3000 kN	0.86 kN	ASTM E74
Thermal			
Hygrometer	Only for 75 %RH	0.67 %RH	SOP – Hygrometer according to ASTM E104
Thermometers	-30 °C to 150 °C	0.73 °C	SOP- thermometer according to ASTM E77
Ovens	Up to 120 °C 300 °C	0.56 °C 1.2 °C	SOP – Ovens according to ASTM D7969
Furnace	Up to 1100 °C	2.8 °C	SOP – Furnace according to ASTM D7969
Water Bath	Up to 100 °C	1.1 °C	SOP – Ovens according to ASTM D7969
Electrical – DC/LF			
DC Voltage – Measure ³	0 V to 80 V	0.84 V	SOP – Voltage
Time and Frequency			
Stopwatch	0 h to 100 h	0.25 s	SOP – TIM-DIV According to NIST SP 960-12

¹The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

²When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

³Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.