CERTIFICATE OF ACCREDITATION

This is to attest

ARAB COMPANY FOR LABORATORIES AND SOIL (ACES NEOM)

NEOM SITE LAB
TABUK, 21382, SAUDI ARABIA

Calibration Laboratory CL-297

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.

Expiry Date January 1, 2026
Effective Date December 23, 2024

IAS ACCREDITED

International Accreditation Service
Issued under the authority of IAS management

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SCOPE OF ACCREDITATION

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ARAB COMPANY FOR LABORATORIES AND SOIL (ACES NEOM)

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Accredited to ISO/IEC 17025:2017 *Effective Date December 23, 2024*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Dimensional			
Calipers (Dial, Digital and Vernier)	0 mm to 150 mm 150 mm to 300 mm	7.4 µm 8.4 µm	Using Gauge Blocks Set by direct Method based on ACESTBK/CAL-WI-001 (ASME B89.1.14)
External / Outside Micrometer	0 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	0.87 µm 0.86 µm 0.86 µm 1.7 µm	Using Gauge Blocks Set by direct method based on ACESTBK/CAL-WI-002 (ASME B89.1.13)
Ultrasonic Thickness Gauge	1 mm to 100 mm	0.87 µm	Using Gauge Blocks Set by direct method based on ACESTBK/CAL-WI-003 (Manufacturer's Specification)
Coating Thickness Gauge	50 µm to 2000 µm	2.0 µm	Using Test foil Set by direct method based on ACESTBK/CAL-WI-004 (ASTM D7091)
Fine Sieves	0.01 mm to 1 mm	3.7 µm	Using Microscope Inspection Sieve Set by direct method based on ACESTBK/CAL-WI-005 (ASTM E11)
Coarse Sieves	1 mm to 200 mm	19 µm	Using Digital Vernier by direct method based on ACESTBK/CAL-WI-005 (ASTM E11)
Standard Test Foils	Up to 2 mm	1.7 µm	Digital Micrometer by direct method based on

** 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.*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
			ACESTBK/CAL-WI-006 (Direct Method)
Feeler Gauge	Up to 2 mm	1.4 µm	Digital Micrometer by direct method based on ACESTBK/CAL-WI-007 (BS 957)
Dial Gauge	0 mm to 25 mm 25 mm to 50 mm	1.4 µm 1.6 µm	Dial Gauge Calibration Tester Gauge Blocks Set by direct method based on ACESTBK/CAL-WI-008 (BS 907)
Los Angeles Abrasion Machine	Wall Thickness: Minimum 12 mm Inside Diameter: 705 mm to 715 mm Inside Length: 505 mm to 515 mm Steel Shelf Width: 88 mm to 92 mm Distance from Shelf Width: Minimum 1270 mm Charge/ Steel Spheres Diameter: 46 mm to 48 mm Charge/ steel sphere mass: 390 g to 445 g Rotational Speed: 30 rpm to 33 rpm	0.043 mm 0.74 mm 0.99 mm 0.054 mm 0.79 mm 0.018 mm 0.14 g 4 rpm	Using Digital Vernier, Measuring Tape, Digital Balance, Tachometer by Direct method based on ACESTBK/CAL-WI-009- ASTM C131/C535
Molds & Cones (Cube, Cylindrical, CBR, Marshall, Slump, Conical, Proctor, Unit Weight Mold)	Diameter: Up to 300 mm Height / Length: Up to 600 mm	24 µm 0.42 mm	Using Digital Vernier Caliper, measuring tape by direct method based on ACESTBK/CAL-WI-010 (ASTM C109, C470, D1883, D6926, C143, C128, D698/D1557, C29)
Flakiness and Elongation Gauge	4 mm to 79 mm	19 µm	Using Digital Caliper by direct method based on ACESTBK/CAL-WI-011 (BS 812)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Compactor or Rammer (Marshall / CBR / Proctor)	Fall Height: 455.7 mm to 458.7 mm Guide Rod Diameter: Min 15.875 mm Face Diameter: 100.08 mm to 100.58 mm Food Thickness: 11.43 mm to 13.97 mm Weight: 4.53 kg to 4.55 kg	0.72 mm 10 µm 10 µm 10 µm 1.5 g	Using Digital Balance, Digital Vernier Caliper, Measuring Tape by Direct method based on ACESTBK/CAL-WI-012 - ASTM D5581 /D698 / D1557
Penetrometer	Dimension: Up to 50 mm Mass: Up to 100 g	24 µm 0.90 g	Using Digital Balance, Digital Vernier Caliper by direct method based on ACESTBK/CAL-WI-013 (ASTM D5/D5M-20)
Mechanical			
Force machines In compression mode (Class I, II, & III)	Up to 100 kN 100 kN to 3000 kN	0.35 % 0.83 %	Using Load Cell 3000 kN and 100 kN With Indicator by direct method based on ACESTBK/CAL-WI-014 (BS EN ISO 7500-1)
Pressure Gauge	-0.9 bar to 1bar 0 bar to 60 bar 60 bar to 700 bar	0.009 bar 0.083 bar 1.5 bar	Using Pressure Calibrator by direct method based on ACESTBK/CAL-WI-015 (BS EN 837-1)
Weighing Balances	1 g to 200 g 200 g to 500 g 500 g to 2000 g 2000 g to 6000 g 6.0 kg to 10.0 kg 10 kg to 20 kg 20 kg to 30 kg 30 kg to 60 kg 60 kg to 100 kg 100 kg to 500 kg	18 mg 21 mg 30 mg 50 mg 80 mg 200 mg 0.94 g 5.5 g 20 g 51 g	Using Standard Class E2, F1, M1 by direct method based on ACESTBK/CAL-WI-016 (OIML R76)
Batch Plant (on site only)	Up to 500 kg 500 kg to 1000 kg 1000 kg to 2000 kg 2000 kg to 3000 kg 3000 kg to 4000 kg 4000 kg to 5000 kg	1.0 kg 1.1 kg 1.4 kg 1.7 kg 2.3 kg 5.8 kg	Using Standard Class M1 by direct method based on ACESTBK/CAL-WI-017 (NIST Handbook -44)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Air Entrainment Meter	Discrete Value Volume of Air Content – 5 %	0.28 %	Using Digital balance by direct method based on ACESTBK/CAL-WI-018 (ASTM C231/C231M)
Viscometer	Up to 4800 cP	21 cP	Standard Viscosity Oil and Digital Thermometer by direct method based on ACESTBK/CAL-WI-019 (ASTM D4402)
Mass (Weights) Class M1, M2	500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.08 g 0.08 g 0.08 g 0.08 g 0.12 g 0.19 g	Using Digital Balance and Standard Test Weights by direct method based on ACESTBK/CAL-WI-020 (OIML R111-1)
Volume (Pipettes, Cylinders, Beakers, Flask)	10 µL to 100 µL 100 µL to 1000 µL 1 mL to 10 mL 10 mL to 100 mL 100 mL to 2000 mL	0, 72 µL 7,6 µL 0.06 mL 0.64 mL 3.4 mL	Using Digital Balance, Digital Thermometer, Barometer by Gravimetric Method based on ACESTBK/CAL-WI-021 (ASTM E542)
Pycnometer	1 mL to 1000 mL	0.31 mL	Using Digital Balance by Direct method based on ACESTBK/CAL-WI-022 (ASTM D854)
Nuclear Density Gauges	Moisture Value: 386.1 kg/m^3 to 492.5 kg/m^3 Wet Density: 1064.6 kg/m^3 to 2526.5 kg/m^3	0.63 kg/m^3 8.3 kg/m^3	Using Validator by Direct Method based on ACESTBK/CAL-WI-030 (ASTM D7759-21)
Thermal			
Temperature Indicator with & without sensor/ Dial Type Thermometer/ Liquid in Glass Thermometer	-25 °C to 100 °C 100 °C to 300 °C 300 °C to 650 °C	0.23 °C 0.72 °C 1.2 °C	Using Data Acquisition Unit & Platinum Resistance Thermometers by Comparison Method based on ACESTBK/CAL-WI-023 (ASTM E220, ASTM E77, ASTM E230, BS EN 13190)
Freezer, Chiller, Water Bath, Incubator, Oven, Autoclave, Furnace	-20 °C to 20 °C 20 °C to 100 °C 100 °C to 600 °C 600 °C to 1200 °C	0.28 °C 0.73 °C 2.8 °C 2.3 °C	Using Data Acquisition Unit Thermocouple Probe by direct method based on ACESTBK/CAL-WI-024 (Manufacturer's Specification)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT USED (OPTIONAL)
Time and Frequency			
Rotational Speed (Contact) Measure	60 rpm to 3600 rpm	10 rpm	Using Digital Tachometer by direct method based on ACESTBK/CAL-WI-025 (Comparison Method)
Rotational Speed (Non-contact) Measure	60 rpm to 14000 rpm	59 rpm	Using Digital Tachometer by direct method based on ACESTBK/CAL-WI-025 (Comparison Method)
Stopwatch / Timer	1 s to 30 min 30 min to 60 min 1 h to 5 h 5 h to 9 h	0.8 s 1.2 s 50 s 70 s	Using Digital Stopwatch by direct method based on ACESTBK/CAL-WI-026 (NIST Special Publication 960)
Chemical/Gas			
pH Meter	Discrete values 4.00 pH 7.00 pH 10.00 pH	 0.14 pH 0.14 pH 0.16 pH	Standard buffer Solution 4 pH, 7.00 pH,10.00 pH by Direct Method based ACESTBK/CAL-WI-027 (Manufacturer's Specification)
TDS Meter	Discrete values 1000 ppm	7.9 part of 10^{-6}	Standard TDS Solution 1000ppm by direct method based ACESTBK/CAL-WI-028 (Manufacturer's specification)
Conductivity Meter	Discrete values 1413 µS/cm	2.4 µS/cm	Standard Conductivity Solution by direct method based on ACESTBK/CAL-WI-029 (Manufacturer's Specification)

[1]The 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.

[2]When 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.

Note
ppm = parts per million