CERTIFICATE OF ACCREDITATION

This is to attest

ARAB COMPANY FOR LABORATORIES AND SOIL (ACES)

AL SAADAH STREET
AL-KHOBAR, EASTERN PROVINCE, 34632, SAUDI ARABIA

Calibration Laboratory CL-270

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.

Expiration Date November 1, 2026
Effective Date March 31, 2025

International Accreditation Service
Issued under the authority of IAS management

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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ARAB COMPANY FOR LABORATORIES AND SOIL (ACES)

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Accredited to ISO/IEC 17025:2017 *Effective Date March 31, 2025*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Calipers (Dial, Digital and Vernier) External and Internal Measurements	0 mm to 500 mm	0.01 mm	VDI/VDE/DGQ 2618 Part 9.1-2006
Dial Gauge	0 mm to 50 mm	0.01 mm	VDI/VDE/DGQ 2618 Part 11.1-2014
Fine Sieves	0.01 mm to 1 mm	3.6 μm	ACESKBR/CAL-WI-010
Coarse Sieves	2.00 mm to 200 mm	0.04 mm	ACESKBR/CAL-WI-010
Ultrasonic Thickness Gauge	2 mm to 100 mm	58 μm	ACESKBR/CAL-WI-014 / (ISO 463, ASTM D4417-B)
Molds & Cones (Cube, Cylindrical, CBR, Marshall, Slump, Conical, Proctor, Unit Weight Mold)	Diameter 1mm to 300 mm Height/Length 1 mm to 600 mm	0.11 mm 0.64 mm	ACESKBR/CAL-WI-022 / (ASTM C29, C109, C128, C143, C470, D698/D1557, D1883, D6926)
Flakiness and Elongation Gauge	4.0 mm to 79 mm	0.015 mm	ACESKBR/CAL-WI-023 / (BS 812)
Los Angeles Abrasion Machine	Inside Diameter up to 711 mm Inside Length up to 508 mm Average Diameter of Charge up to 47 mm Average Mass of Charge up to 450 g Revolution per Minute up to 33 rpm	0.64 mm 0.64 mm 0.64 mm 0.90 g 2.2 rpm	ACESKBR/CAL-WI-026 / (ASTM C131/C535)
Dial Thickness Gauge	0 mm to 25 mm	3.8 μm	ACESKBR/CAL-WI-015 / (Comparison Method)

** 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 (OPTIONAL)
Height Gauge (Dial, Digital, Vernier)	0 mm to 600 mm	6.9 µm	ACESKBR/CAL-WI-016 / (ISO 13225, BS 1643)
Snap Gauge (Limit, Adjustable)	5 mm to 150 mm	2.3 µm	ACESKBR/CAL-WI-017 / (Comparison Method)
External / Outside Micrometer	0 mm to 25 mm 25 mm to 100 mm 100 mm to 150 mm	0.60 µm 0.84 µm 0.82 µm	ACESKBR/CAL-WI-013 / (VDI/VDE/DGQ 2618 Section 10.3/10.1/6/10.7/10.5 ISO 3611, ASME B89.1.13-2013)
Lever Type Dial Gauge	0 mm to 1 mm	3.2 µm	ACESKBR/CAL-WI-018 / (ISO 9493)
Bore Gauge	For a spring contact movement of 1.5 mm	3.8 µm	ACESKBR/CAL-WI-019 / (Direct Method)
Coating Thickness Gauge	5 µm to 2000 µm	3.0 µm	ACESKBR/CAL-WI-020 / (ISO 2178)
Liquid Limit Device (Grooving Tool & Cup)	10 mm 215 g	0.06 mm 0.09 g	ACESKBR/CAL-WI-024 / (ASTM D4318)
(Marshall/CBR/Proctor) Compactor or Rammer	up to 458 mm up to 101 mm pp to 4.55 kg	0.02 mm 0.02 mm 0.11 g	ACESKBR/CAL-WI-025 / (ASTM D5581/D698/D1557)
Penetrometer	50 mm 100 g	0.06 mm 0.09 g	ACESKBR/CAL-WI-028 / (ASTM D5)
Feeler Gauge/Standard Test foil	0.05 mm to 1 mm	2.0 µm	ACESKBR/CAL-WI-021 / (BS 957)
Mechanical			
Force machines In compression mode (Class I, II, & III)	Up to 100 kN Up to 3000 kN	0.35 % 0.82 %	BS EN ISO 7500-1:2018
Pressure Gauges	-1 bar to 0 bar 0 bar to 40 bar 40 bar to 700 bar	0.23 bar 0.23 bar 1.4 bar	EURAMET CG-17
Non-automatic weighing balances	1 g to 100 g 100 g to 600 g 600 g to 2100 g 2100 g to 6100 g 6.1 kg to 11.1 kg 11.1 kg to 21 kg 21 kg to 30 kg 30 kg to 60 kg 60 kg to 150 kg 150 kg to 500 kg	6 mg 15 mg 20 mg 30 mg 100 mg 200 mg 1.5 g 3.2 g 6.0 g 7.6 g	ACESKBR/CAL-WI-001 / (Euramet CG-18)
Analytical Balance	1 mg to 500 mg 1 g to 220 g	0.021 mg 0.61 mg	ACESKBR/CAL/WI-001 (OIML-R76)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Batch Plant (on site only)	Up to 500 kg 500 kg to 1000 kg 1000 kg to 1500 kg 1500 kg to 2000 kg 2000 kg to 2500 kg 2500 kg to 3000 kg 3000 kg to 3500 kg 3500 kg to 4000 kg 4000 kg to 4500 kg 4500 kg to 5000 kg	1.0 kg 1.1 kg 1.1 kg 1.2 kg 1.4 kg 1.7 kg 2.0 kg 2.3 kg 2.6 kg 2.9 kg	Procedure: WI-008 based on NIST Handbook 44 Tolerance as per ASTM C94/C94M-22
Concrete Air Meter	5 %	0.11%	ACESKBR/CAL-WI-027 / (ASTM C231)
Anti-Vibration Table	0.01 m/s² to 20 m/s²	0.96 m/s²	ACESKBR/CAL-WI-031 / (In house method)
Schmidt/Rebound Hammer	60 RBN to 100 RBN	1.6 RBN	ACESKBR/CAL-WI-030 / (ASTM C805)
Nuclear Density Gauge	1120 kg/m^3 to 2723 kg/m^3	0.98 kg/m^3	ACESKBR/CAL-WI-040 / (ASTM D7759)
SPT Hammer Energy	60 % to 95 % Energy Transfer Ratio (ETR)	0.93% ETR	ACESKBR/CAL-WI-041 / (ASTM D4633)
Mass (Weights)	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.21 mg 0.21 mg 0.21 mg 0.21 mg 0.21 mg 0.21 mg 0.25 mg 0.30 mg 0.50 mg 1.0 mg 2.5 mg 5.0 mg 10 mg 200 mg	ACESKBR/CAL-WI-032 / (OIML R111)
Volume (Gravimetric Method) Pipettes/ Micropipettes, Burettes, Cylinders/ Beakers, Flasks, Glassware, Funnel	100 µL to 1000 µL 1 mL to 100 mL 100 mL to 1000 mL 1000 mL to 2000 mL	0.9 µL 21 µL 0.9 mL 5.9 mL	ACESKBR/CAL-WI-033 / (EURAMET CG-19)
Pycnometers	1 mL to 4000 mL	1.2 mL	ACESKBR/CAL-WI-034 / (ASTM C128, D854, D2041)
Electrical – DC/LF			
Welding Machine	1 A to 600 A 1 V to 100 V	1.5 % 0.62 V	ACESKBR/CAL-WI-035 / (BS EN 50504 & IEC 60974-14)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Thermal			
Temperature Resistance Thermometers with Direct Reading Devices & Data Loggers with External Sensors	-35 °C to 150 °C 40 °C to 650 °C	0.4 °C 0.5 °C	DKD R5-1:2019
Temperature Thermocouple Devices & Data Loggers with External Sensors	-25 °C to 150 °C 40 °C to 650 °C	0.8 °C 1 °C	DKD R5-1:2019
Temperature Controlled (Ovens, Freezer, Chiller, Cold Storage Room, Furnace, Refrigerator, Autoclave Temperature, Incubator)	-30°C to 200 °C 200 °C to 1100 °C	0.86 °C 1.2 °C	ACESKBR/CAL-WI-011
Glass Thermometer, Sensors (RTDs, Thermocouples)	-25 °C to 150 °C 150 °C to 650 °C	0.8 °C 1.1 °C	ACESKBR/CAL-WI-036 / (comparison Method)
Time and Frequency			
Rotational Speed (contact/non-contact) measure	10 rpm to 100 rpm 100 rpm to 9999 rpm	2.1 rpm 7.5 rpm	Tachometer/ ACESKBR/CAL-WI-012
Stop Watch / Timer	1 s to 5 h 5 h to 9 h	7.3 s 0.6 s	ACESKBR/CAL-WI-029 / (comparison Method)
Chemical			
pH Meter	pH 4.00 pH 7.00 pH 10.00	0.14 pH 0.14 pH 0.16 pH	Procedure: WI-007 Direct method using NIST Traceable buffer solution
TDS Meter	1000 ppm	0.23 %	Procedure: WI-007 Direct method using NIST Traceable conductivity solution
Multi Gas Detectors / Gas Analyzer Equipment H_2S CO O_2 CH_4 SO_2 NO_2 NO	 25 ppm 100 ppm 18 % 50% LEL 10 ppm 25 ppm 50 ppm	 5.0 % 5.1 % 2.0 % 2.2 % 5.0 % 5.0 % 5.0 %	ACESKBR/CAL-WI-038 / (BS EN 60079-29-1)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Conductivity Meter	1413 µS/cm 12.88 mS/cm	1.4 µS/cm 5.9 µS/cm	ACESKBR/CAL-WI-039 / (ASTM D1125)

[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