CERTIFICATE OF ACCREDITATION

This is to attest that

FUGRO SUHAIMI CO LTD

BUILDING NUMBER 2931 AL YASMIN DISTRICT 7389
TABUK, 47738, SAUDI ARABIA

Calibration Laboratory CL-292

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 July 18, 2024

Expiration Date August 1, 2025

President

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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FUGRO SUHAIMI CO LTD

www.fugro-suhaimi.com

Contact Name smijith vs **Contact Phone** +966-554264474

Accredited to ISO/IEC 17025:2017 *Effective Date July 18, 2024*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Vernier, Digital, Dial Calipers	1 mm to 600 mm	6.4 µm	Caliper Checker & Slip Gauge FSL CP A01
Micrometers (Inside, Outside & Depth)	1 mm to 25 mm 25 mm to 300 mm 300 mm to 500 mm	2.7 µm 6.4 µm 6.8 µm	Slip Gauge Set FSL CP A02
Dial & Digital, Indicators	0 mm to 50 mm	6.3 µm	Dial indicator calibrator FSL CP A05
Measuring Tape/Steel Rule	0 mm to 1000 mm	0.32 mm	Scale & tape calibrator FSL CP A03
Digital Coating Thickness Gauge	25 µm to 2600 µm	0.83 µm	Thickness foils set FSL CP A04
Dial Thickness Gauge	25 µm to 1 mm 1 mm to 100 mm	0.86 µm 5.8 µm	Gauge block set & foils set FSL CP A04
Marshall & Soil Compactor Hammer Fall Height[5]	455 mm to 460 mm	0.81 mm	ASTM D6926 / D698 / D1557
Marshall & Soil Compactor Hammer Diameter[5]	50 mm to 100 mm	0.02 mm	ASTM D6926 / D698 / D1557
Conical Cone &Tamping Rod, Dimensions[5]	20 mm to 95 mm	0.02 mm	ASTM C128
Flakiness Gauge[5]	5 mm to 80 mm	0.01 mm	BS 812 105.1
Elongation Gauge[5]	5 mm to 80 mm	0.01 mm	BS 812 105.2
LA Abrasion Machine[5] Inside Diameter Inside Length Average Dia of Charge	500 mm to 720 mm	0.86 mm	ASTM C131 / C535
LA Abrasion Machine[5] Charge Diameter	45 mm to 50 mm	0.01 mm	ASTM C131 / C535
CBR Mold & Spacer[5] Dimensions	50 mm to 200 mm	0.01 mm	ASTM D1883

** 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)
Cylinder Mold[5]	295 mm to 305 mm	0.02 mm	ASTM C470
Marshall Mold[5]	85 mm to 105 mm	0.02 mm	ASTM D6926
Mortar Cube Mold[5]	45 mm to 55 mm	0.04 mm	ASTM C109
Proctor Mold Dimensions[5]	100 mm to 160 mm	0.01 mm	ASTM D698/D1557
Sample Slitter[5]	5 mm to 100 mm	0.01 mm	ASTM C702
Sand Equivalent Tester Horizontal Throw[5], Sand reading indicator length from foot[5].	200 mm to 260 mm	0.2 mm	BS 812:112
Aggregate Impact Value Apparatus Dimensions Cylindrical Metal Cup[5], Metal Hammer[5], Cylindrical Measure[5], Tamping Rod[5]	5 mm to 110 mm 300 mm to 600 mm	0.2 mm 0.81 mm	BS 812:112
Slump Cone and Tamping Rod Dimension[5]	90 mm to 305 mm	0.08 mm	ASTM C143
Test Sieves Course Fine	 125 mm to 2 mm 1.7 mm to 0.075 mm	 0.02 mm 5.1 µm	ASTM E11
Liquid Limit Device[5]	8 mm to 12 mm	0.03 mm	ASTM D4318
Unit Weight Mold Wall & Bottom Thickness[5]	1 mm to 10 mm	0.01 mm	ASTM C29
Penetrometer, Needle Diameter of Needle &Travel[5]	1 mm to 100 mm	0.01 mm	ASTM D5
Vicat Apparatus Dimension[5]	1 mm to 100 mm	0.07 mm	ASTM C191 / C187
Flow Table Mold & Table Dimension[5]	10 mm to 260 mm	0.01 mm	ASTM C230
Mechanical			
Marshall & Soil Compactor Hammer Weight	4 kg to 5 kg	0.09 g	ASTM D6926 / D698 / D1557
Conical Cone &Tamping Rod, Weight	32 g to 355 g	0.08 g	ASTM C128
LA Abrasion Machine, Average Mass of Charge	100 g to 5500 g	0.10 g	ASTM C131 / C535
Sand Equivalent Tester Foot Assembly Weight	995 g to 1005 g	0.09 g	ASTM D2419
Aggregate Impact Value Apparatus, Hammer Weight	13.5 kg to 14 kg	0.09 g	BS 812: 112
Liquid Limit Device Cup Weight	185 g to 215 g	0.08 g	ASTM D4318

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Penetrometer Needle Assembly Weight	50 g to 100 g	0.08 g	ASTM D5
Vicat Apparatus, Needle Assembly Weight	299 g to 301 g	0.08 g	ASTM C191 / C187
Flow Table, Weight of Table	4 kg to 4.1 kg	0.08 g	ASTM C230
Air Meter	0 % to 10 %	0.09 %	ASTM C231
Weighing Scales[5] Concrete Batch Plant Asphalt Batch Plant	(1 to 100) kg (100 to 500) kg (500 to 5000) kg	0.04 kg 0.07 kg 0.13 kg 1.3 kg*	Up to 500 kg standard, weights. *Use of substitution method (up to 5000 kg). CMC is increased by a multiple for each substitution FSL CP F01 & F02
Mass – Fixed Points	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1000 g 2000 g 5000 g 10000 g 20000 g	0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.02 mg 0.03 mg 0.04 mg 0.04 mg 0.04 mg 0.04 mg 0.05 mg 0.06 mg 0.07 mg 0.09 mg 0.12 mg 0.26 mg 0.38 mg 24 mg 29 mg 33 mg 0.09 g 0.18 g 0.38 g	Standard Weights Analytical Balance Mass Comparator FSL CP B01
Weighing Balances and Scales[5]	1 g to 220 g 500 g to 1000 g 1000 g to 5000 g 5 kg to 15 kg 15 kg to 20 kg 20 kg to 30 kg	0.25 mg 7.2 mg 7.6 mg 0.08 g 0.08 g 0.09 g	Standard Weight FSL CP B02
Unit Weight Mold Volume	2800 cm^3 9300 cm^3 14000 cm^3	0.10 cm^3 0.31 cm^3 0.32 cm^3	ASTM C29
CBR Mold Volume	Up to 3000 cm^3	0.38 cm^3	ASTM D 1883

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Proctor Mold Volume	Up to 3000 cm^3	0.31 cm^3	ASTM D698/D1557
Pycnometer	Up to 100 mL	0.09 mL	ASTM D854, ASTM C128
GMM Test Container	Up to 20000 cm^3	0.35 cm^3	ASTM D2041
Graduated Cylinder	20 mL 50 mL to 200 mL 500 mL 1000 mL 2000 mL	0.32 mL 0.6 mL 2.9 mL 5.8 mL 12 mL	ASTM E542
Burette	1 mL to 25 mL	0.14 mL	ASTM E542
Pipette	1 mL to 25 mL	0.14 mL	ASTM E542
Compression Machine[5]	50 kN to 3000 kN	0.16 kN	Load Cell with Indicator FSL CP C01
Load Measuring Device[5] Proving Ring[5] CBR/Marshall Machine[5]	1 kN to 50 kN	0.19 kN	Load Cell with Indicator FSL CP C03
Vacuum Gauge[5]	-0.90 bar to 0 bar	5.8 mbar	Wika standard vacuum gauge FSL CP E01
Thermal			
Melting Pot[5]	50 °C to 200 °C	0.74°C	ASTM C617
Thermometer[5]	-25 °C to 100 °C 100 °C to 400 °C 400 °C to 650 °C 650 °C to1100 °C	0.17°C 0.20 °C 0.33 °C 0.88 °C	Dry Block Calibrator FSL CP D01
Oven & Furnace[5]	0 °C to 400 °C 0 °C to 1200 °C	2.9 °C 5.2 °C	Digital Thermometer FSL CP D02
Temperature Bath[5]	60 °C	0.18 °C	Digital Thermometer FSL CP D04
Incubator[5]	10 °C to 100 °C	0.62 °C	Digital Thermometer FSL CP D02
Hot Plate[5]	50 °C to 100 °C 100 °C to 500 °C	0.67 °C 0.71 °C	Digital Thermometer FSL CP D04
Time and Frequency			
LA Abrasion Machine Rotation[5]	30 rpm to 35 rpm	0.14 rpm	ASTM C131 / C535
Sand Equivalent Teste Throw per minutes[5]	170 rpm to 200 rpm	0.23 rpm	ASTM D2419
Extraction Machine Rotation[5]	100 rpm to 1,000 rpm 1,000 rpm to 10,000 rpm 10,000 rpm to 90,000 rpm	0.1 rpm 3.6 rpm 22 rpm	ASTM D2172/D2172M

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Chemical/Gas			
pH – Measuring Equipment, Fixed Points At 25° C	4 pH 7 pH 10 pH	0.15 pH 0.15 pH 0.15 pH	pH buffer solutions FSL CP G15
Conductivity Measuring Equipment, Fixed Point at 25 °C	496 µmhos/cm 1413 µmhos/cm	5.0 µmhos/cm 2.0 µmhos/cm	Conductivity Reference solutions FSL CP G15

[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.

[3]Capability is suitable for the calibration of measuring devices in the stated ranges.

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

[5]Also available as site calibration. Note that actual measurement uncertainties achievable at a customer's site can normally be expected to be larger than the uncertainties listed on this Scope of Accreditation.