

CERTIFICATE OF ACCREDITATION

This is to attest that

FUGRO-SUHAIMI CO. LTD. - YANBU

LOT # 012, BLOCK #03 SHAREH NAHAWAND, HAII AL-MEHAN, MADINAT YANBU AL- SINAIYAH YANBU, 31720, SAUDI ARABIA

Testing Laboratory TL-1299

has met the requirements of AC89, IAS Accreditation Criteria for Testing 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 February 1, 2026

Effective Date January 8, 2025



International Accreditation Service Issued under the authority of IAS management

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Accredited to ISO/IEC 17025:2017

Effective Date January 8, 2025

| Water Analysis | |
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| ASTM C 1602/C1602M | Standard Specification for Mixing Water used in the Production of Hydraulic Cement Concrete |
| ASTM C 1603-16 | Standard Test Method for Measurement of Solids in water |
| SM 9222 B/D | Total coliform, fecal coliform by membrane filtration in water |
| SM 3120 B | Standard Methods for the Examination of Water and Wastewater Inclusion- Aluminum by Inductively Coupled Plasma (ICP) Method Antimony by Inductively Coupled Plasma (ICP) Method Barium by Inductively Coupled Plasma (ICP) Method Boron by Inductively Coupled Plasma (ICP) Method Boron by Inductively Coupled Plasma (ICP) Method Beryllium by Inductively Coupled Plasma (ICP) Method Cadmium by Inductively Coupled Plasma (ICP) Method Calcium by Inductively Coupled Plasma (ICP) Method Calcium by Inductively Coupled Plasma (ICP) Method Cobalt by Inductively Coupled Plasma (ICP) Method Cobalt by Inductively Coupled Plasma (ICP) Method Iron by Inductively Coupled Plasma (ICP) Method Lead by Inductively Coupled Plasma (ICP) Method Lead by Inductively Coupled Plasma (ICP) Method Magnesium by Inductively Coupled Plasma (ICP) Method Nagnesium by Inductively Coupled Plasma (ICP) Method Manganese by Inductively Coupled Plasma (ICP) Method Molybdenum by Inductively Coupled Plasma (ICP) Method Nickel by Inductively Coupled Plasma (ICP) Method Selenium by Inductively Coupled Plasma (ICP) Method Silver by Inductively Coupled Plasma (ICP) Method Thallium by Inductively Coupled Plasma (ICP) Method Vanadium by Inductively Coupled Plasma (ICP) Method |
| ASTM D1067 | Standard Test Method for Acidity or Alkalinity of Water |



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| ASTM D1293 | Standard Test Method for pH of Water |
|---------------------------|---|
| ASTM D511 | Standard Test Methods for Calcium and Magnesium in Water |
| ASTM D512 | Standard Test Methods for Chloride Ion in Water |
| ASTM D516 | Standard Test Methods for Sulfate Ion in Water |
| ASTM D888 | Dissolved Oxygen in Water |
| SM 2130 B | Turbidity Determination in Water |
| SM 2320 B | Total Alkalinity Determination by Titration Method |
| SM 2320 B | Bicarbonate Determination by Titration Method |
| SM 2320 B | Carbonate Determination by Titration Method |
| SM 2510 B | Electrical Conductivity |
| SM 2540 C | Total Dissolved Solids (TDS) in water |
| SM 2540 D | Total Suspended Solids (TSS) in water |
| SM 2550 | Temperature Determination |
| SM 3500 Fe B | Iron Determination by Spectrophotometric Method |
| SM 3500 K B | Potassium by Flame Emission Photometric Method |
| SM 3500 Mn B | Manganese (Mn) Determination by Spectrophotometric Method |
| SM 3500 Na B | Sodium by Flame Emission Photometric Method |
| SM 3500 Zn B | Zinc (Zn) Determination by Spectrophotometric Method |
| SM 4500 B B | Boron (B) Determination in Water by Spectrophotometric Method |
| SM 5310 C HACH | Total Organic Carbon (TOC) |
| SM 4500 CI B | Chlorine (Residual) Determination by Titration Method |
| SM 4500 F D | Fluoride Determination by Spectrophotometric Method |
| SM 4500 NH3 B&C | Ammonia Nitrogen Determination by Spectrophotometric Method |
| SM 4500 NO2 D | Nitrite Nitrogen Determination by Spectrophotometric Method |
| SM 4500 NO3 D | Nitrate Nitrogen Determination by Spectrophotometric Method |
| SM 4500 O H | Oxygen (Dissolved) Determination |
| SM 4500 S ²⁻ D | Sulphide Determination by Spectrophotometric Method |
| SM 4500 SiO2 C | Silica Determination by Spectrophotometric Method |



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| SM 4500 SO4 ²⁻ E | Sulphate Determination by Spectrophotometric Method |
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| SM 5210 B | Biological Oxygen Demand (BOD5) |
| SM 5220 D | Chemical Oxygen Demand (COD) |
| SM 5520 B | Oil & Grease Determination |
| SM 5530 C | Phenol Concentration Determination by Spectrophotometric Method |
| SM 4500 H ⁺ B | pH value Determination in Water |
| ASTM D5907 | Filterable Matter (Total Dissloved Solids) and Non-Filterable Matter |
| SM 4500 CN ⁻ C&E | Cyanide Determination in Water |
| SM 4500 P D&C | Total Phosphorous Determination in Water |
| SM 4500 N (HACH) | Total Nitrogen Determination in Water |
| Aggregates | |
| ASTM C29/C29M | Bulk Density (Unit Weight) and Voids in Aggregate |
| ASTM C70 | Surface Moisture in Fine Aggregate |
| ASTM C88 | Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| ASTM C117 | Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing |
| ASTM C123/C123M | Lightweight Particles in Aggregate |
| ASTM C127 | Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate |
| ASTM C128 | Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate |
| ASTM C131/C131M | Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C136/C136M | Sieve Analysis of Fine and Coarse Aggregates |
| ASTM C142/C142M | Clay Lumps and Friable Particles in Aggregates |
| ASTM C535 | Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C566 | Total Evaporable Moisture Content of Aggregate by Drying |
| ASTM C 1260 | Potential Alkali Reactivity of Aggregates |
| ASTM C1293 | Determination of Length Change of Concrete Due to Alkali-Silica Reaction |
| ASTM D75/D75M | Practice for Sampling Aggregates |
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| ASTM D2419 | Sand Equivalent Value of Soils and Fine Aggregate |
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| ASTM D4253 | Maximum Index Density and Unit Weight of Soils Using a Vibratory Table |
| ASTM D4254 | Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density |
| ASTM D4791 | Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate |
| BS 812, Part 105.1 | Determination of Particle Shape Flakiness Index |
| BS 812, Part 105.2 | Determination of Particle Shape Elongation Index of Coarse Aggregate |
| BS 812, Part 110 & 111 | Aggregate Crushing Value and Ten Percent Fines Value |
| BS 812, Part 112 | Aggregate Impact Value |
| BS EN 1367-4 | Drying Shrinkage of Aggregates |
| ASTM C289 | Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method) |
| ASTM C471M Sec 7, 8, 10, 11, 12, 13 only | Standard Test Methods for Chemical Analysis of Gypsum and Gypsum Products |
| BS 812, Part 118, Sec 6 only | Determination of Sulphate Content in Aggregate |
| BS 812, Part 117, Appendix C only | Determination of Water-Soluble Chloride Salts in Aggregate |
| ASTM C25, Sec 8, 10, 11, 12, 13, 15, 18, 19, & 31 only | Standard Test Method for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime |
| Bituminous | |
| ASTM D5/D5M | Penetration of Bituminous Materials |
| ASTM D36/D36M | Softening Point of Bitumen |
| ASTM D95 | Water in Petroleum Products and Bituminous Materials by Distillation |
| ASTM D113 | Ductility of Bituminous Materials |
| ASTM D402 | Distillation of Cutback Asphalt (Bituminous) Products |
| ASTM D546 | Sieve Analysis of Mineral Filler for Bituminous Paving Mixtures |
| ASTM D979 /D979M | Sampling Bituminous Paving Mixtures |
| ASTM D2041/D2041M | Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures |



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| ASTM D2042 | Solubility of Asphalt Materials in Trichloroethylene |
|---|--|
| ASTM D2170 | Kinematic Viscosity of Asphalts (Bitumens) |
| ASTM D2172/D2172M | Quantitative Extraction of Bitumen From Bituminous Paving Mixtures |
| ASTM D2726 | Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures |
| ASTM D3143 | Flash Point of Cutback Asphalt with Tag Open-Cup Apparatus |
| ASTM D3549/D3549M | Thickness or Height of Compacted Bituminous Paving Mixture Specimens |
| ASTM D5361/D5361M | Sampling Compacted Bituminous Mixtures for Laboratory Testing |
| ASTMD5444 | Mechanical Size Analysis of Extracted Aggregate |
| ASTM D6307 | Asphalt Content of Hot-Mix Asphalt by Ignition Method |
| ASTM D6926 | Preparation of Bituminous Specimens Using Marshall Apparatus |
| ASTM D6927 | Marshall Stability and Flow of Bituminous Mixtures |
| ASTM D2489 | Standard Test Method for Estimating Degree of Particle Coating of Asphalt Mixtures |
| Cement & Pozzolona | |
| ASTM C185 | Air Content of Hydraulic Cement |
| ASTM C191 | Time of Setting of Hydraulic Cement by Vicat Needle |
| ASTM C204 | Fineness of Hydraulic Cement by Air-Permeability Apparatus |
| ASTM C430 | Fineness of Hydraulic Cement by the 45-µm (No. 325) Sieve |
| ASTM C 109 | Standard Test Method for Compressive Strength of Hydraulic Cement Mortars |
| ASTM C1240 (only Sec 12, 13, 14, 16, 19) | Standard Specification for Silica Fume Used in Cementitious Mixtures |
| Clay Pipes | |
| EN 295-3 (Section:7,13, 28) | Vitrified clay pipe systems for drains and sewers – Part 3: Test Methods |
| Concrete | |
| ASTM C31/C31M | Making and Curing Concrete Test Specimens in the Field |
| ASTM C39/C39M | Compressive Strength of Cylindrical Concrete Specimens |
| ASTM C42/C42M | Obtaining and Testing Drilled Cores and Sawed Beams of Concrete |
| ASTM C78/C78M | Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading) |



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| ASTM C138/C138M | Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete |
|------------------------|---|
| ASTM C143/C143M | Slump of Hydraulic-Cement Concrete |
| ASTM C157/C157M | Length Change of Hardened Hydraulic-Cement Mortar and Concrete |
| ASTM C172/C172M | Sampling Freshly Mixed Concrete |
| ASTM C192/C192M | Making and Curing Concrete Test Specimens in the Laboratory |
| ASTM C231/C231M | Air Content of Freshly Mixed Concrete by the Pressure Method |
| ASTM C293/C293M | Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading) |
| ASTM C403 | Time of Setting of Concrete Mixtures by Penetration Resistance |
| ASTM C495 | Compressive Strength of Lightweight Insulating Concrete |
| ASTM C496/C496M | Splitting Tensile Strength of Cylindrical Concrete Specimens |
| ASTM C511 | Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes |
| ASTM C617/C617M | Capping Cylindrical Concrete Specimens |
| ASTM C642 | Density, Absorption, and Voids in Hardened Concrete |
| ASTM C805/C805M | Rebound Number of Hardened Concrete |
| ASTM C1064/C1064M | Temperature of Freshly Mixed Hydraulic-Cement Concrete |
| ASTM C1202 | Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration |
| ASTM C1231/C1231M | Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinders |
| ASTM C1583 | Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method |
| BS EN 12390-8/DIN 1048 | Water Permeability Test |
| BS EN 12390-2 | Making and curing specimens for strength tests |
| BS EN 12390-3 | Compressive strength of test specimen |
| BS EN 12390-5 | Flexural strength of test specimens |
| BS EN 12390-6 | Tensile splitting strength of test specimens |
| BS EN 12390-7 | Density of hardened concrete |
| BS 1881-108 | Method for making test cubes from fresh concrete |
| BS 1881-116 | Method for determination of compressive strength of concrete cubes |
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| BS 1881-122 | Water Absorption of Hardened Concrete |
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| BS 1881:208 | Recommendation for the determination of the initial surface absorption of concrete |
| NT BUILD 492 (Nordtest) | Chloride Migration Coefficient of Hardened Concrete |
| ASTM C1084 Sec 8 only | Portland-Cement Content of Hardened Hydraulic-Cement Concrete |
| ASTM C114-18 Sec 7, 8, 9, 10, 14, 15, 16, 17, 18, 19 & 21 only | Chemical Analysis of Hydraulic Cement |
| ASTM C1218/1218M CC1218C1218/C1218M | Water-Soluble Chloride in Mortar and Concrete |
| ASTM C1240 Sec 10 only | Standard Specification for Silica Fume Used in Cementitious Mixtures |
| BS 1881 Part 124, Sections 10.2 & 10.3 | Analysis of Hardened Concrete (Acid Soluble Chloride and Sulfate) |
| EN 14488 Part 1 – Part 7 | Sampling and testing of Spray concrete |
| ASTM C873 | Standard Test Method for Compressive Strength of Concrete Cylinders Cast in Place in Cylindrical Molds |
| ASTM C1621 | Standard Test Method for Passing Ability of Self-Consolidating Concrete by J- Ring |
| AASTHO T336 | Coefficient of Thermal Expansion of Hydraulic Cement Concrete |
| NT BUILD 443 (Nordtest) | Accelerated Chloride Penetration |
| Gypsum Powder & Board | |
| ASTM C473 (Section 11 only) | Physical Testing of Gypsum Panel Products |
| ASTM C472 | Standard test methods for physical testing of Gypsum, Gypsum Plasters, and Gypsum Concrete |
| Masonry | |
| ASTM C140/C140M | Sampling and Testing Concrete Masonry Units and Related Units |
| ASTM C780 Annex A6 | Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry |
| NDT | |
| ASTM C597 | Pulse Velocity Through Concrete |
| ASTM D6132 | Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Coating Thickness Gage |



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| | Active Standard(Latest Version) |
|---------------------------------------|--|
| ASTM C 876 | Standard Test Method for Corrosion Potentials of Uncoated Reinforcing Steel in Concrete |
| ASTM B117 | Standard Practice for Operating Salt Spray (Fog) Apparatus |
| Paint | |
| ASTM D4541 | Pull-Off Strength of Coatings Using Portable Adhesion Testers |
| ASTM D7234 | Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers |
| Rock | |
| BS EN 13383-2 (Section 8 only) | Particle Density & Water Absorption |
| BS EN 1097-2 Section 5 | Resistance to Fragmentation by the Los Angeles Test Method |
| ASTM D5519 | Standard Test Methods for Particle Size Analysis of Natural and Man-Made Riprap Materials |
| ASTM D5240 | Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium Sulfate or Magnesium Sulfate |
| Soils | |
| ASTM D854 | Specific Gravity of Soil Solids by Water Pycnometer |
| ASTM D698 | Laboratory Compaction Characteristics of Soil Using Standard Effort |
| ASTM D1140 | Amount of Material in Soils Finer than No. 200 (75- μ m) Sieve |
| ASTM D1196/D1196M; BS 1377, Part 9 | Nonrepetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements |
| ASTM D1556/D1556M | Density and Unit Weight of Soil in Place by Sand-Cone Method |
| ASTM D1557 | Laboratory Compaction Characteristics of Soil Using Modified Effort |
| ASTM D1883 | CBR (California Bearing Ratio) of Laboratory-Compacted Soils |
| ASTM D2216 | Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass |
| ASTM D2487 | Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| ASTM D2488 | Description and Identification of Soils (Visual-Manual Procedure) |
| ASTM D3282 | Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes |





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| ASTM D4318/D4318M | Liquid Limit, Plastic Limit, and Plasticity Index of Soils |
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| ASTM D4429 | CBR (California Bearing Ratio) of Soils in Place |
| ASTM D5334 | Determination of Thermal Conductivity of Soil and Soft Rock by Thermal Needle Probe Procedure |
| ASTM D6473 | Specific Gravity And Absorption of Rock For Erosion Control |
| ASTM D6913/D6913M | Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis |
| ASTM D6938 | In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) |
| ASTM D7012 (Method C) | Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures |
| ASTM D7698 | Standard Test Method for In-Place Estimation of Density and Water Content of Soil and Aggregate by Correlation with Complex Impedance Method |
| ASTM D7928 | Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis |
| ASTM D4972 | Standard Test Method for pH of Soils |
| AASHTO T290 | Determining Water-Soluble Sulfate Ion Content in Soil |
| AASHTO T291 | Determining Water-Soluble Chloride Ion Content in Soil |
| BS1377-3:1990 Sec 4,6,7,8,9,10,11,12 | Methods of Test for Soil for Civil Engineering |
| Steel | |
| ASTM A123 | Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products |
| ASTM A370 (Sections 7 to 15) | Definitions for Mechanical Testing of Steel Products |
| ASTM D6677 | Standard Test Method for Evaluating Adhesion by Knife |
| ASTM E376 | Measuring Coating Thickness by Magnetic-Field or Eddy-Current (Electromagnetic) Testing Methods |
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