

# REGISTRATION CERTIFICATE

## شهادة تسجيل مختبر خاص

وفقاً للائحة الصادرة بقرار وزير البلدية والبيئة رقم (356) لسنة 2017م  
According to the Ministerial Decree No. (356)/2017

No: **RL019 -19**

Date of Issue: 31/10/2023 تاريخ اصدار الشهادة:  
Date of Expiry : 30/10/2024 الصلاحية حتى:  
Lab Name: مختبرات البراحة الفنية  
Al Baraha Technical Laboratories اسم المختبر:  
Address: منطقة ٥٧، شارع ٥٥٨، مبنى ٤٧، المنطقة  
الصناعية، ص.ب: ٤٠٥٧٢،  
الدوحة - قطر العنوان:  
Zone 57, Street 558, Building 47,  
Industrial Area, P.O.Box:40572,  
Doha-Qatar  
CR No: 90127 رقم السجل التجاري :  
Activity: Testing (Material) النشاط:  
Scope of Registration: Attached Scope of 4881.01 مرفق مجال الاعتماد  
accreditation No: 4881.02 شهادة رقم: مجال التسجيل:

### Notes:

1. QS has no any responsibility for poor performance by this lab during the validity period.
2. This certificate will remain valid for the period specified, subject to compliance with the Technical Regulations.
3. This certificate is invalid without the attached scope of accreditation
3. It is important to apply two months before expiry date of validity for renewal of this conformity certificate.
4. The required fee for this certificate has been stated according to the decision No. (112)/2019

Recommended by:   
Head of CC Section

Authorized by:   
Director of Quality & Conformity Dept

Approved by:   
PRESEDENT, QGOS



REGISTRATION CERTIFICATE



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AL BARAHA TECHNICAL LABORATORIES  
 Zone 57, Street No.558, Building No. 47  
 Salwa Industrial Area Doha, Qatar 40572  
 Tareq Hani Abdallah Phone: +00974 55743879

CONSTRUCTION MATERIALS TESTING

Valid To: December 31, 2024

Certificate Number: 4881.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory for:

Test Method:	Test Description:
<b>Aggregates:</b>	
ASTM C29/C29M	Bulk Density and Voids in Aggregates
ASTM C88/C88M	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C117	Materials Finer than 75- $\mu$ m (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	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 C702/702M	Reducing Samples of Aggregate to Testing Size
ASTM D75/D75M <sup>1</sup>	Sampling Aggregates
ASTM D2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D4791	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D5821	Fractured Particles in Coarse Aggregate
BS 812 Part 2 Clause 5.4	Testing aggregates Part 2: Methods for determination of Density (Particle density and water absorption)
BS 812 Part 102 <sup>1</sup>	Testing aggregate Part 102: methods for Sampling
BS 812 Part 103 Section 103.1	Testing aggregates Part 103: Method for determination of particle size distribution. Sieve tests

(A2LA Cert. No. 0037.01) 06/20/2023

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Test Method:	Test Description:
BS 812 Part 105 Section 105.1	Testing aggregates Part 105: Methods for determination of particle shape. Flakiness index
BS 812 Part 105 Section 105.2	Testing aggregates Part 105: Methods for determination of particle shape. Elongation index of coarse aggregate
BS 812 Part 109	Testing aggregates Part 109: Methods for determination of moisture content (drying oven)
BS 812 Part 110	Testing aggregates Part 110: Methods for determination of aggregate crushing value(ACV)
BS 812 Part 111	Testing aggregates Part 111: Methods for Determination of Ten Per Cent Fines Value(TFV)
BS 812 Part 112	Aggregate impact value
BS EN 196 Part 3	Methods of testing cement Part 3: Determination of setting times and soundness
BS EN 196 Part 7 <sup>1</sup>	Methods of testing cement Part 7: Methods of taking and preparing samples of cement
BS EN 933 Part 1	Tests for geometrical properties of aggregates Part 1: Determination of particle size distribution. Sieving method
BS EN 933 Part 3	Tests for geometrical properties of aggregates Part 3: Determination of particle shape. Flakiness index
BS EN 933 Part 4	Tests for geometrical properties of aggregates Part 4: Determination of particle shape. Shape index (Elongation Index)
BS EN 933-7	Shell Content Percentage of Shells in Coarse Aggregates
BS EN 1097-2	Methods for the determination of resistance to fragmentation
BS EN 1097-6	Determination of particle density and water absorption
<b>Asphalt:</b>	
ASTM D5	Penetration of Bituminous Materials
ASTM D36	Softening Point of Bitumen (Ring-and-Ball Apparatus)
ASTM D140/D140M <sup>1</sup>	Sampling Asphalt Materials
ASTM D546	Sieve Analysis of Mineral Filler
ASTM D979/D979M <sup>1</sup>	Sampling Bituminous Paving Mixtures
ASTM D1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
ASTM D2041/D2041M	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2726/D2726M	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D2950	Nuclear Density of Asphalt
ASTM D2995	Estimating Application Rate and Residual Application Rate of Bituminous Distributors
ASTM D3203/D3203M	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D3549/D3549M	Thickness or Height of Compacted Asphalt Mixture Specimens
ASTM D5361/D5361M <sup>1</sup>	Sampling Compacted Bituminous Mixtures for Laboratory Testing
ASTM D5444	Mechanical Size Analysis of Extracted Aggregate





Test Method:	Test Description:
ASTM D6752/D6752M	Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Vacuum Sealing
ASTM D6857	Maximum Specific Gravity and Density of Asphalt Mixtures using Automatic Vacuum Sealing Method
ASTM D6926	Preparation of Asphalt Mixture Specimens Using Marshall Apparatus
ASTM D6927	Marshall Stability and Flow of Asphalt Mixtures
ASTM D6951/D6951M <sup>1</sup>	Use of the Dynamic Cone Penetrometer in Shallow Pavement Applications
ASTM D7227	Rapid Drying of Compacted Asphalt Specimens Using Vacuum Drying Apparatus
AASHTO R 47	Reducing Sample of HMA to Test Size
BS 1377 Part 9 Section 4 <sup>1</sup>	Methods of test for soils for civil engineering purposes Part 9: In-situ tests In-situ vertical deformation and strength tests
BS EN 1427	Bitumen and bituminous binders. Determination of the softening point. Ring and Ball method
<b>Asphalt Mixtures:</b>	
ASTM D70	Density of Semi-Solid Bituminous Materials (Pycnometer Method)
ASTM D2172	Quantitative Extraction of Asphalt Binder from Asphalt Mixtures
ASTM D2726, Clause 10.2	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures (Determination of Bulk Density)
BS 598 Part 104, Section 4	Sampling and examination of bituminous mixtures for roads and other paved areas. Methods of test for the determination of density and compaction (Density and thickness of asphalt cores)
BS 598 Part 107	Sampling and examination of bituminous mixtures for roads and other paved areas. Method of test for the determination of the composition of design surface course rolled asphalt (Marshall stability and flow)
BS EN 1426; BS 2000-49	Bitumen and bituminous binders. Determination of needle penetration
BS EN 12697-1	Bituminous mixtures. Test methods for hot mix asphalt. Soluble binder content
BS EN 12697-5, Clause 9.3	Bituminous mixtures. Test methods for hot mix asphalt. Determination of the maximum density
BS EN 12697-6, Clauses 9.2 & 9.3	Bituminous mixtures. Test methods for hot mix asphalt. Determination of bulk density of bituminous specimens
BS EN 12697-13	Bituminous mixtures. Test methods for hot mix asphalt. Temperature measurement
BS EN 12697-27 <sup>1</sup>	Bituminous mixtures. Test methods for hot mix asphalt. Sampling
BS EN 12697-29	Bituminous mixtures. Test methods for hot mix asphalt. Determination of the dimensions of a bituminous specimen
BS EN 12697-30	Bituminous mixtures. Test methods for hot mix asphalt. Specimen preparation by impact compactor
BS EN 12697-34	Bituminous mixtures. Test methods for hot mix asphalt. Marshall Test (Marshall stability and flow)
BS EN 12697-36	Bituminous mixtures. Test methods for hot mix asphalt. Determination of the thickness of a bituminous pavement

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Test Method:	Test Description:
BS EN 12697 Part 28	Bituminous mixtures. Test methods for hot mix asphalt. Part 28: Preparation of samples for determining binder content, water content and grading
BS EN 12697 Part 2	Bituminous mixtures. Test method for hot mix asphalt Part 2: Determination of particle size distribution
BS EN 12697 Part 8	Bituminous mixtures. Test methods for hot mix asphalt Part 8: Determination of void characteristics of bituminous specimens
SOP/OPN/22 <sup>1</sup>	Surface Irregularities in Concrete & Bituminous Road Surfaces By Travelling Beam Device
<b>Cement:</b>	
ASTM C109/C109M	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens)
ASTM C183/C183M <sup>1</sup>	Sampling and the Amount of Testing of Hydraulic Cement
ASTM C187	Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
ASTM C191	Time of Setting of Hydraulic Cement by Vicat Needle
BS EN 196 Part 3 +A1:2005	Methods of testing cement Part 3: Determination of setting times and soundness
BS EN 196 Part 6, Section 4.0	Methods of testing cement Part 6: Determination of fineness
<b>Concrete:</b>	
ASTM C31/C31M <sup>1</sup>	Making and Curing Concrete Test Specimens in the Field
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C42/C42M	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C138/ C138M	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C140/C140M <sup>1</sup>	Sampling and Testing Concrete Masonry Units and Related Units
ASTM C143/C143M <sup>1</sup>	Slump of Hydraulic-Cement Concrete
ASTM C172 <sup>1</sup>	Sampling of Freshly Mixed Concrete
ASTM C231/ C231M <sup>1</sup>	Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C496/C496M	Splitting Tensile Strength of Cylindrical Concrete Specimens
ASTM C617/C617M	Capping Cylindrical Concrete Specimens
ASTM C642	Density, Absorption, and Voids in Hardened Concrete
ASTM C805/C805M <sup>1</sup>	Rebound Number of Hardened Concrete
ASTM C1064 <sup>1</sup>	Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C1202	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration Rapid chloride permeability test (RCPT)
ASTM D4541 <sup>1</sup>	Pull-Off Strength of Coatings Using Portable Adhesion Testers
ASTM D7234 <sup>1</sup>	Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers
ASTM E488 <sup>1</sup>	Strength of Anchors in Concrete Elements





Test Method:	Test Description:
BS 1881, Parts 111, 114, and 116 <sup>1</sup>	Testing concrete. Part 111: Method of normal curing of test specimens (20°C method)Part 114: Testing concrete Methods for determination of density of hardened concrete Part 116: Method for determination of compressive strength of concrete cubes
BS 1881 Part 122	Testing concrete Part 122: Method for determination of water absorption
BS 1881 Part 208	Testing concrete Part 208: Recommendations for the determination of the initial surface absorption of concrete
BS 8204-1: 2003	Screed test
BS 6717: 2001- Annex B	Annex B: Measurement of the dimensions of a single paving block
BS 6717: 2001- Annex E	Precast, unreinforced concrete paving blocks — Requirements and test methods Annex E: Method for measuring tensile splitting strength
BS EN 196-1	Determination of cement strength
BS EN 1367-4	Determination of drying shrinkage
BS EN 772-11/BS EN 771-3	Determination of Coefficient of Water Absorption due to Capillary Action of Masonry Units (And other related materials)
BS EN 1338 Annex E	Determination of Total Water Absorption of Paving Blocks
BS EN 1339 Annex E	Determination of Total Water Absorption of Paving Flags
BS EN 1340 Annex C	Measurement of Dimensions for Concrete Kerb Units
BS EN 1340 Annex E	Determination of Total Absorption of Concrete Kerb Units
BS EN 12350 Part 1 <sup>1</sup>	Testing fresh concrete. Part 1: Sampling
BS EN 12350 Part 2 <sup>1</sup>	Testing fresh concrete Part 2: Slump test
BS EN 12350 Part 5 <sup>1</sup>	Testing fresh concrete Part 5: Flow table test
BS EN 12350 Part 6 <sup>1</sup>	Testing fresh concrete Part 6: Density
BS EN 12350 Part 7 <sup>1</sup>	Testing fresh concrete Part 7: Air content. Pressure methods
BS EN 12390, Parts 1, 3, and 7	Testing hardened concrete Part 1: Shape, dimensions and other requirements for specimens and molds Part 3: Compressive strength of test specimensPart 7: Density of hardened concrete
BS EN 12390 Part 2 <sup>1</sup>	Testing hardened concrete Part 2: Making and curing specimens for strength tests
BS EN 12504 Part 1 <sup>1</sup>	Testing concrete in structures Part 1: Cored specimen– taking, examining and testing in compression
BS EN 12390 Part 8	Testing hardened concrete. Part 8: Depth of penetration of water under pressure
BS EN 13286-41	Determination of the Compressive Strength of Hydraulically Bound Mixtures
BS EN 13286-51	Method for the manufacture of test specimens of hydraulic bound mixtures using vibrating hammer compaction
BS EN 13748 Part 1 5.5/5.8	Water Absorption of Terrazzo Tiles
DIN 1048 Part 5	Testing Concrete; Testing of Hardened Concrete (specimens prepared in mold) Part 5: Water Permeability Test of Hardened Concrete
RILEM TC14 CPC 11.3	Absorption of Water by Concrete by Immersion Under Vacuum
NT Build 492-11	Chloride ion migration

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Test Method:	Test Description:
BS 6073 Appendix A	Precast concrete masonry units, measurement of dimension
BS 6073 Appendix B	Precast concrete masonry units, determination of compressive strength
BS 6717 Part 1 Ann. A & B	Precast concrete paving blocks Part 1: Determination of compressive strength
ASTM C1621	Passing Ability of Self-Consolidating Concrete by J-Ring 1
ASTM C1252	Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)
BS EN 12350:9	Determining the V-funnel flow time for self-compacting concrete
BS EN 12350:10	Determining the passing ability ratio for self-compacting concrete using the L box test
ASTM C403	Time of Setting of Concrete Mixtures by Penetration Resistance
<b>Geosynthetic:</b>	
ASTM D570	Water Absorption of Plastics
ASTM D1004	Tear Resistance (Graves Tear) of Plastic Film and Sheeting
ASTM D 3767 (Procedures B & C)	Rubber - Measurement of Dimensions
ASTM D3787	Bursting Strength of Textiles -Constant rate of Transverse (CRT) Ball Burst Test
ASTM D5034	Breaking Strength and Elongation of Textile Fabrics (Grab Test).
ASTM D5035	Breaking Force and Elongation of Textile Fabrics (Strip Test).
ASTM D5199	Measuring the Nominal Thickness of Geosynthetics
ASTM E96/E96	Gravimetric determination of Water Vapor Transmission
ASTM E154/E154M	Water vapor Retarders used in contact with earth under concrete slabs on walls, or as ground cover
BS EN ISO 527 Part 3	Determination of Tensile Properties: Test conditions for films and sheets
BS EN ISO 5084	Determination Of Thickness of Textiles and Textile products
BS EN ISO 10319	Geosynthetics-wide width tensile test (Tensile strength and Elongation at Rupture)
BS EN ISO 11058	Water Permeability Charecteristics to the plane, without load
BS EN ISO 12236	Geosynthetics -static puncture test (CBR Test)
BS EN ISO 12956	Determination of Characteristics of Opening Size
BS EN ISO 13433	Dynamic Perforation Test (Cone Drop Test)
BS EN 1849-1	Flexible sheets for water proofing -Determination of thickness and mass per unit area of Bitumen sheets for roof water proofing
BS EN 1849-2	Flexible sheets for water proofing-Determination of thickness and mass per unit area -Plastic and Rubber sheets for waterproofing
BS EN 12127	Textile -Fabrics-Determination Of Mass Per Unit Area using small Samples
<b>Road Markings:</b>	
ASTM D711	No-Pick-Up Time of Traffic Paint
ASTM D 6132 <sup>1</sup>	Nondestructive Measurement of Dry a film Thickness of Applied Organic Coatings Using Ultrasonic Coating Thickness Gauge



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Test Method:	Test Description:
ASTM D7091 <sup>1</sup>	Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
ASTM E1710	Measurement of Retroreflective Pavement Marking Materials with CEN Prescribed Geometry Using a Portable Retroreflectometer
ASTM E2302	Measurement of the Luminance Coefficient under Diffuse Illumination of Pavement Marking Materials Using a Portable Reflectometer
BS 3262 Part 3	Hot-applied thermoplastic road marking materials Part 3: Specification for application of material to road surfaces Determination of Thickness of Road Marking Materials
BS EN 1436 +A1	Road marking materials. Road marking performance for road users Determination of Skid Resistance
<b>Soils:</b>	
ASTM D854	Specific Gravity of Soil Solids by Water Pycnometer
ASTM D1140	Amount of Material in Soils Finer than No. 200 (75- $\mu$ m) Sieve
ASTM D1556 <sup>1</sup>	Density and Unit Weight of Soil in Place by Sand-Cone Method
ASTM D1557	Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft <sup>3</sup> (2,700 kN-m/m <sup>3</sup> ))
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 D4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D4429 <sup>1</sup> (2009a)	CBR (California Bearing Ratio) of Soils in Place
ASTM D4718	Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
ASTM D6913	Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
ASTM D6938 <sup>1</sup>	In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
BS EN 933-8	Assessment of fines- sand equivalent
BS EN 933-9	Assessment of fines-methylene blue test
BS1377 Part 2 Clause 3	Methods of test for soils for civil engineering purposes Part 2: classification tests (Determination of moisture content)
BS 1377 Part 2 Clause 4.3	Methods of test for soils for civil engineering purposes Part 2: Classification tests (Determination of Liquid Limit (Cone Penetrometer))
BS 1377 Part 2 Section 4.5	Methods of test for soils for civil engineering purposes Part 2: Classification tests (Atterberg Casagrande Method)
BS 1377 Part 2 Clauses 5.3 & 5.4	Methods of test for soils for civil engineering purposes Part 2: Classification tests (Determination of Plastic Limit and Plasticity Index)
BS 1377 Part 2 Clauses 9.2 & 9.3	Methods of test for soils for civil engineering purposes Part 2: Classification tests (Determination of particle size distribution)
BS 1377 Part 4 Clauses 3.5 and 3.6	Methods of test for soils for civil engineering purposes Part 4: Compaction-related tests (Determination of dry density / moisture content relationship)





Test Method:	Test Description:
BS 1377 Part 4 Clause 7	Methods of test for soils for civil engineering purposes Part 4: Compaction-related tests (Determination of California bearing ratio)
BS 1377 Part 9 Clauses 2.1 & 2.2 <sup>1</sup>	Methods of test for soils for civil engineering purposes Part 9: In-situ tests (Sand replacement method suitable for fine, medium and coarse-grained soils (large and small pouring cylinder method)
BS 1377 Part 9 Clause 2.5 <sup>1</sup>	Methods for test for soils for civil engineering purposes Part 9: In-situ tests (Filed Density test by Nuclear Gauge FDT)
BS 1377 Part 9 Section 4.3 <sup>1</sup>	Methods of test for soils for civil engineering purposes Part 9: In-situ tests Determination of the in-situ California Bearing Ratio (CBR)
BS EN 13036-7	Irregularity Measurement of a Pavement Courses by Using a Straightedge
ASTM E1703/E1703M	Measuring Rut-Depth of Pavement Surfaces using a Straightedge
BS 1377 Part 9 Clauses 2.1 & 2.2 <sup>1</sup>	Methods of test for soils for civil engineering purposes Part 9: In-situ tests (Sand replacement method suitable for fine, medium and coarse-grained soils (large and small pouring cylinder method)
BS 1377 Part 9 Clause 2.5 <sup>1</sup>	Methods for test for soils for civil engineering purposes Part 9: In-situ tests (Filed Density test by Nuclear Gauge FDT)
BS 1377 Part 9 Section 4.3 <sup>1</sup>	Methods of test for soils for civil engineering purposes Part 9: In-situ tests Determination of the in-situ California Bearing Ratio (CBR)
BS EN 13036-7	Irregularity Measurement of a Pavement Courses by Using a Straightedge

#### SPECIFICATION

BS 1924-1	General requirements, sampling, sample preparation and test on materials before stabilization
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<sup>1</sup> This laboratory performs field testing activities for these tests.







SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AL BARAHA TECHNICAL LABORATORIES  
Zone 57, Street No.558, Building No. 47  
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CHEMICAL

Valid To: December 31, 2024

Certificate Number: 4881.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory for:

Test Method:	Test Description:
<b>Aggregate:</b>	
ASTM C40/C40M	Organic Impurities in Fine Aggregates for Concrete
ASTM C494/C494M	Chemical Admixtures for Concrete
ASTM D891	Specific Gravity, Apparent, of Liquid Industrial Chemicals
BS 812 Part 117 Appendix C	Testing aggregates. Method for determination of acid-soluble chloride salts
BS 812 Part 118 Clause 6	Testing aggregates. Methods for determination of Sulfate content
BS EN 1744-1+A1 Clause 12	Tests for chemical properties of aggregates. Chemical analysis Determination of Acid Soluble Sulfate in Aggregates
BS EN 1744-5	Tests for chemical properties of aggregates. Determination of acid soluble chloride salts
<b>Cement:</b>	
BS EN 196 Part 2, Clause 4.4.1	Method of testing cement: Part 2: Chemical analysis of cement - Loss on ignition
BS EN 196 Part 2, Clause 4.4.3	Method of testing cement: Part 2: Chemical analysis of cement - Insoluble residue
BS EN 196 Part 2, Clause 4.5.5	Method of testing cement: Part 2: Chemical analysis of cement - Impure silica
BS EN 196 Part 2, Clause 4.5.6	Method of testing cement: Part 2: Chemical analysis of cement - Pure silica
BS EN 196 Part 2, Clause 4.5.14	Method of testing cement Part 2: Chemical analysis of cement - Calcium Oxide
BS EN 196 Part 2, Clause 4.5.11	Method of testing cement Part 2: Chemical analysis of cement - Aluminum Oxide
BS EN 196 Part 2, Clause 4.5.10	Method of testing cement Part 2: Chemical analysis of cement - Iron Oxide
BS EN 196 Part 2, Clause 4.5.15	Method of testing cement Part 2: Chemical analysis of cement - Magnesium oxide
BS 1881 Part 124, Clause 12.2	Testing concrete Part 124: Methods for analysis of hardened concrete (Determination of Sulphate content in hardened concrete)
BS 1881 Part 124, Clause 12.1	Testing concrete Part 124: Methods for analysis of hardened concrete (Determination of Chloride content in hardened concrete)

(A2LA Cert. No. 4881.02) Revised 07/18/2023

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<b>Test Method:</b>	<b>Test Description:</b>
BS EN 196 Part 2 4.4.2	Method of testing cement Part 2: Chemical analysis of cement - Sulphate
BS EN 196 Part 2 4.5.16	Method of testing cement Part 2: Chemical analysis of cement - Chloride
ASTM C1218	Water Soluble Chloride in mortar and concrete
ASTM C1152/C1152M	Acid Soluble Chloride in mortar and concrete
<b>Soil:</b>	
BS 1377 Part 3, Clause 7.9 5.2:1990	Methods of test for soils for civil engineering purposes. Chemical and electro-chemical tests (Determination of acid soluble sulfate content)
BS 1377 Part 3, Clause 9.3	Methods of test for soils for civil engineering purposes. Chemical and electro-chemical tests (Determination of acid soluble chloride content)
BS 1377 Part 3, Clause 12	Methods of test for soils for civil engineering purposes. Chemical and electro-chemical tests (pH value)
BS 1377 Part 3, Clause 4.0	Methods of test for soils for civil engineering purposes. Part 3: Chemical and electro-chemical tests: Determination of the organic matter content Clause 3
BS 1377 Part 3, Clause 8.3	Methods of test for soils for civil engineering purposes. Part 3: Chemical and electro-chemical tests Determination of Carbonate Content
BS 1377 Part 3, Clause 9.2	Methods of test for soils for civil engineering purposes. Part 3: Chemical and electro-chemical tests Determination of Water Soluble Chloride Content of Soil
BS 1377 Part 3, Clause 7.6 5.3/5.5:1990	Methods of test for soils for civil engineering purposes. Part 3: Chemical and electro-chemical tests (Determination of the sulphate content of soil and ground water) Determination of Water Soluble Sulphate Content of Soil
<b>Admixtures:</b>	
BS EN 480 Part 10 Clause 4	Admixtures for concrete, mortar and grout. Test methods. Reference concrete and reference mortar for testing Chloride Content of Admixture
<b>Water/Waste Water:</b>	
APHA 4500 H +B	pH
APHA 2510 B	Electrical Conductivity
APHA 2540 C	Total Dissolved Solids at 180 ° C.
APHA 2540 D	Water -Total Suspended Solids
APHA 2540 B	Water -Total Solids
APHA 2540 F	Determination of Settle able solids of water
APHA 5220 D	Chemical Oxygen Demand
APHA 2320 B	Alkalinity, Carbonate, Bicarbonate, Hydroxide Alkalinity
SOP/OPN/28	Sampling
APHA 2130 B	Turbidity





Test Method:	Test Description:
HACH Method 8038 (Adapted method of APHA 4500 NH <sub>3</sub> B & C)	Nitrogen-Ammonia
HACH Method 8039	Nitrogen-Nitrate
HACH Method 8021 (Adapted method of APHA 4500 Cl G)	Chlorine
APHA 4500 Cl -B	Chloride
HACH Method 8048 (Adapted method of APHA 4500 -P E)	Phosphorus
APHA 4500 SO <sub>4</sub> 2-C	Sulphate
HACH Method 8008 (Adapted method of APHA 3500-Fe B)	Iron
APHA 2340 C	Hardness
APHA 3500-Mg B	Magnesium
APHA 3500-Ca B	Calcium
HACH Method 8506 (Adapted method of APHA 3500-Cu C)	Copper
APHA 3120-B	Boron Barium Sodium Potassium Iron Aluminum Lead Cadmium Chromium Copper Nickel Lithium Zinc Manganese Silver Cobalt Magnesium Calcium Beryllium Antimony Silicon Molybdenum Selenium Thallium Titanium Vanadium Phosphorous Tin



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