25/9/2016 10:39 AM
2016/0034712/9

هيئة الأشغال العامة
Public Works Authority

مذكرة داخلية . Memorandum

قطر تستحق الأفضل
Qatar Deserves The Best

From:	**قسم المختبرات**	**من:**
To:	**شؤون الدعم الفني**	**الى:**
Subject:	**قائمة أشغال للاختبارات المعتمدة لدى المختبرات المحايدة رقم (2016/9)**	**الموضوع:**
Date:	**2016/09/25**	**التاريخ:**

Dear All ,,,

With reference to memorandum No. 28 - 2016 and regular assessment carried out by the Quality and Safety Dept. inspection team, you will find attached the updated list of approved tests, which used in Public Works Authority (Ashghal) projects. The basic amendments can be summarized as follows:

1. **New tests were added for Advanced construction technologies services after accreditation of ISO 17025 in these parameters.**

The list of approved tests can be downloaded from Ashghal website: www.ashghal.gov.qa.

For further information, please contact Quality and Safety Dept. through:

Tel: 44950200 - Fax: 44951200

تحية طيبة و بعد ،،،

بناءً على التعميم رقم 28 لسنة 2016 و على التقييم الدوري لفريق مراقبة المختبرات التابع لإدارة الجودة و السلامة، نرفق لسيادتكم تحديث قائمة الإختبارات المعتمدة في مشاريع هيئة الأشغال العامة .

أهم التحديثات التي تمت هي:

1. **إضافة بعض الاختبارات الجديدة لمختبر تكنولوجيا الإنشاءات المتطوره وذلك بعد حصوله على شهادة الإعتماد ل ISO17025 في هذه الإختبارات .**

يمكنكم الاطلاع و الحصول على نسخة من قائمة الإختبارات المعتمدة من خلال موقع الهيئة www.ashghal.gov.qa.

لمزيد من المعلومات يمكنكم الاتصال بإدارة الجودة والسلامة على :

ت: 44950200 - فاكس: 44951200

خالد محمد العمادي
مدير إدارة الجودة والسلامة

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Tel: 44950200 – Fax: 44951200 – e. mail: Quality&Safety@ashghal.gov.qa

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1. Soil Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
ASTM TESTS																			
1.1	Reducing Samples to Testing Size	ASTM C702	-	√	-	√	√	√	√	-	-	√	√	√*	-	-	-	-	-
1.2	Determination of Moisture Content	ASTM D2216	-	√	-	√	√	√	√	-	-	√	√	√	√	-	√	-	-
1.3	Particle Size Distribution	ASTM D6913	-	√	-	√	√	√	√	-	√	√	-	-	√	-	√	-	-
1.4	Materials Finer than No. 200 (0.075mm) Sieve	ASTM D1140	-	√	√	√	√	√	√	-	√	-	-	-	-	-	√	-	-
1.5	Liquid Limit, Plastic Limit and Plasticity Index of Soil	ASTM D4318	-	√	√	√	√	√	-	-	√	√	-	√	√	-	√	-	-
1.6	Lab Compaction Test using Modified Effort	ASTM D1557	-	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.7	Correction of Density and Water Content for Soils	ASTM D4718	-	√	√	√	-	√	-	-	-	√	-	-	-	-	-	-	-
1.8	Field Density (Sand Cone)	ASTM D1556	-	√	√	-	√	√	√	-	√	√	√	√	√	-	-	-	-
1.9	Field Density (Nuclear)	ASTM D6938	-	√	√	√	√	√	√	-	√	√	-	-	-	-	√	-	-
1.10	In Place Moisture Content (Calcium Carbide Tester)	ASTM D4944	-	√	-	√	-	√	-	-	-	√	-	√*	-	-	-	-	-

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Soil Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
1.11	Determination of California Bearing Ratio (CBR)	ASTM D1883	-	√	-	√	√	√	-	-	√	√	-	-	√	-	√	-	-
1.12	In Place California Bearing Ratio (CBR)	ASTM D4429	-	√	-	√	-	√	-	-	√	√	-	-	-	-	-	-	-
1.13	Sand Equivalent Value	ASTM D2419	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	-	-

Soil Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
BS and BS EN TESTS																			
1.14	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
1.15	Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3	√	√	-	√	√	√	√	√	√	√	√	√	√	-	√	√	-
1.16	Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5	√	√	√	√	√	√	√	-	√	√	√	√	√	√	√	√	-
1.17	Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-
1.18	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-
1.19	Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
1.20	Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
1.21	Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-
1.22	In-Situ Density Test (Sand Replacement Method - Small Pouring Cylinder)	BS 1377 Part 9: Sec. 2.1	-	√	√	√	√	√	√	-	√	√	-	-	√	-	-	√	-

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Soil Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
1.23	In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2	√	√	-	√	√	√	√	√	√	√	√	√*	√	√	√	√	-
1.24	In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5	√	√	√	√	√	√	√	√	√	-	-	-	-	-	√	-	-
1.25	Determination of Organic Matter Content	BS 1377 Part 3: Sec. 3	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.26	Determination of Water Soluble Chloride Content	BS 1377 Part 3: Sec. 7.2	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.27	Determination of Acid Soluble Chloride Content	BS 1377 Part 3: Sec. 7.3/5.5	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.28	Determination of Water Soluble Sulphate Content	BS 1377 Part 3: Sec. 5.3/5.5	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.29	Determination of Acid Soluble Sulphate Content	BS 1377 Part 3: Sec. 5.2	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
1.30	Sand Equivalent Value	BS EN 933 Part 8	√	√	-	√	-	√	√	-	√	-	-	-	√	-	-	-	-
1.31	Method of Test for Cement Stabilized Materials	BS 1924 Part 2	-	√	-	√	-	√	-	-	√	-	√*	-	-	-	-	-	-

Notes: - It is the responsibility of the Engineer and Consultant to ensure the materials testing laboratory proposed by the Contractor is totally independent and has no relationship, inclusive of formal, financial, family or legal, or other with the Contractor or the Contractors Sub-contractors.

- (√*) means conditional approval

ملاحظات: - انها مسؤولية مهندس المشروع والاستشاري التأكد من عدم وجود صله بين المختبر المقترح والمقاول أو المقاول من الباطن بأي شكل كان سواء قانوني، مالي، عائلي أو خلافه.

- (√*) تعني اعتماد مشروط ولفتره محدوده.

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2. Aggregate Tests

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
ASTM / AASHTO TESTS																			
2.1	Sampling of Aggregates	ASTM D75	-	√	-	√	√	√	√	-	√	√	-	√*	√	-	√	-	-
2.2	Reducing Samples to Testing Size	ASTM C702	-	√	-	√	√	√	√	-	√	√	√	√*	-	-	√	-	-
2.3	Particle Size Distribution	ASTM C136	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
2.4	Material Finer than 0.075 mm	ASTM C117	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	-
2.5	Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128	√	√	√	√	√	√	√	-	√	√	√	√	√	√	√	√	-
2.6	Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127	√	√	√	√	√	√	√	-	√	√	√	√	√	√	√	√	-
2.7	Clay Lumps and Friable Particles	ASTM C142	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	√	-
2.8	Lightweight Particles	ASTM C123	√	√	-	√	√	√	√	-	√	√	√	√	√	-	√	-	-
2.9	Organic Impurities for Fine Aggregates	ASTM C40	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
2.10	Flat and Elongated Particles	ASTM D4791	√	√	√	√	√	√	√	-	√	√	√	-	√	-	-	-	-
2.11	Los Angeles Abrasion	ASTM C131	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	-

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Aggregate Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
2.12	Los Angeles Abrasion	ASTM C535	√	√	√	√	√	√	√	√	√	-	√	√	√	√	√	-	-
2.13	Magnesium Sulphate Soundness	ASTM C88	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	√	-
2.14	Percentage of Fractured Particles	ASTM D5821	-	√	-	√	√	√	√	-	√	√	-	√	-	-	-	-	-
2.15	Sieve Analysis of Mineral Filler	ASTM D546	-	√	-	√	-	√	-	-	√	√	-	-	-	-	-	-	-
2.16	Uncompacted Void Content of Fine Aggregate	AASHTO T304	-	√	-	√	-	√	-	-	√	√	-	√	-	-	-	-	-

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Aggregate Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
BS and BS EN TESTS																			
2.17	Sampling of Aggregates (From Heaps)	BS 812 Part 102	√	√	√	√	√	√	-	√	√	-	-	-	√	-	√	-	-
2.18	Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6	√	√	√	√	√	√	√	-	√	-	√	√	√	√	√	-	-
2.19	Determination of Particle Density and Water Absorption	BS EN 1097 Part 6	√	√	-	√	√	√	√	-	√	√	√	-	√	-	-	-	-
2.20	Particle Density and Water Absorption (All larger than 10mm aggregate)	BS 812 Part 2–5.3	√	√	-	√	√	√	-	-	√	√	√	-	-	√	-	-	√
2.21	Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4	√	√	-	√	√	√	√	√	-	√	√	-	-	-	√	-	√
2.22	Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5	√	√	-	√	√	√	√	√	-	√	√	-	-	-	-	-	√
2.23	Particle Size Distribution	BS EN 933 Part 1	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√
2.24	Particle Size Distribution (Wet)	BS 812 Part 103.1-7.2	√	√	√	√	√	√	√	√	√	-	√	-	√	√	√	√	-
2.25	Particle Size Distribution (Dry)	BS 812 Part 103.1-7.3	√	√	√	√	√	√	√	√	√	-	√	-	√	√	√	√	-
2.26	Material Finer than 0.075 mm	BS EN 933 Part 1	√	√	√	√	√	√	√	-	√	-	√	√	-	-	√	-	-
2.27	Material Finer than 0.063 mm	BS EN 933 Part 1	√	√	√	√	√	√	√	√	√	-	√	√	√	-	√	-	-
2.28	Determination of Shell Content	BS EN 933 Part 7	√	√	-	√	√	√	-	√	√	√	√	-	√	-	-	-	-

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Aggregate Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
2.29	Flakiness Index	BS EN 933 Part 3	√	√	√	√	√	√	-	√	√	√	√	√	√	-	√	-	-
2.30	Flakiness Index	BS 812 Part 105.1	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√	√	√
2.31	Elongation (Shape) Index	BS EN 933 Part 4	√	√	√	√	√	√	-	√	√	√	√	-	√	-	√	-	-
2.32	Elongation Index	BS 812 Part 105.2	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√	√	√
2.33	Determination of Aggregate Crushing Value	BS 812 Part 110	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	-	-
2.34	Determination of Ten Percent Value	BS 812 Part 111	√	√	√	√	√	√	√	√	√	√	√	-	√	-	√	-	-
2.35	Determination of Aggregate Impact Value	BS 812 Part 112	√	√	√	√	√	√	√	√	√	√	√	-	-	√	-	-	√
2.36	Determination of Acid Soluble Chloride Content	BS EN 1744 Part 5	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	√	-
2.37	Determination of Water Soluble Chloride Content	BS 812 Part 117	√	√	√	√	√	√	√	-	√	√	-	√	√	-	√	-	-
2.38	Determination of Chloride Content (Acid Extract)	BS 812 Part 117-App. C	√	√	-	√	-	√	-	-	√	√	-	√	√	-	√	-	-
2.39	Determination of Sulphate Content	BS 812 Part 118	√	√	√	√	-	√	√	-	√	√	-	√	√	-	√	-	-
2.40	Determination of Acid Soluble Sulphate Content	BS EN 1744 Part 1: Sec 12	√	√	√	√	√	√	√	-	-	√	√	-	√	-	√	√	-

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3. Concrete Tests

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
ASTM TESTS																			
3.1	Making and Curing of Concrete Tests Specimen	ASTM C31	-	√	√	√	-	√	-	-	√	-	-	-	√	-	√	-	-
3.2	Sampling of Fresh Concrete	ASTM C172	-	√	√	√	√	√	√	-	√	√	-	-	√	-	√	-	-
3.3	Test for Temperature of Fresh Concrete	ASTM C1064	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	√	-
3.4	Slump Test	ASTM C143	-	√	√	√	√	√	-	-	√	√	-	√	√	-	√	-	-
3.5	Compressive Strength of Concrete Cylindrical Specimens	ASTM C39	-	√	√	√	-	√	√	-	√	√	√	-	-	-	√	-	-
3.6	Capping of Cylindrical Concrete Specimen	ASTM C617	-	√	√	√	√	-	-	-	√	-	√	-	√	-	-	-	-
3.7	Testing Concrete Cylinders Using Unbonded Caps	ASTM C1231	-	√	√	-	-	-	-	-	√	-	-	-	-	-	-	-	-
3.8	Obtaining and Testing of Drilled Cores and Sawed Beams	ASTM C42	-	√	√	√	√	√	√	-	-	√	-	-	√	-	-	-	-
3.9	Water Soluble Chloride in Concrete	ASTM C1218	-	√	-	√	-	-	-	-	√	√	-	-	√	-	-	-	-
3.10	Acid Soluble Chloride in Concrete	ASTM C1152	-	√	-	√	-	-	-	-	√	-	-	-	√	-	-	-	-
3.11	Resistance to Chloride Ion Penetration	ASTM C1202	√	√	√	√	√	√	-	-	√	√	√	√	-	-	√	-	-
3.12	Air Content Test for Fresh Concrete by Pressure Method	ASTM C231	-	√	√	√	√	√	-	-	√	√	√	-	√	-	√	-	-

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Concrete Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
3.13	Air Content Test for Fresh Concrete by Volumetric Method	ASTM C173	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.14	Density Determination for Fresh Concrete	ASTM C138	√	√	-	√	√	√	-	-	√	√	√	-	√	-	√	-	-
3.15	Sampling of Shotcrete	ASTM C1385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.16	Pullout Strength of Hardened Concrete	ASTM C900	-	√	-	-	√	√	-	-	√	-	-	√	-	-	-	-	-
3.17	Density Determination of Pervious Concrete	ASTM C1688	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.18	Infiltration Test for In place Pervious Concrete	ASTM C1701	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.19	Slump Flow Test for Self-Consolidated Concrete	ASTM C1611	-	√	√	√	√	√	-	-	-	-	-	-	-	-	-	-	-
3.20	Passing Ability for Self-Consolidating Concrete by J-Ring	ASTM C1621	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Concrete Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
BS and BS EN TESTS																			
3.21	Sampling of Fresh Concrete	BS EN 12350 Part 1	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	-	-
3.22	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	√	√
3.23	Slump Test	BS EN 12350 Part 2	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	√	-
3.24	Flow Table Test	BS EN 12350 Part 5	√	√	√	√	√	√	-	-	√	√	-	-	-	-	√	-	-
3.25	Shape and Dimensions of Specimen	BS EN 12390 Part 1	√	√	√	√	√	√	√	-	√	√	√	√*	√	-	√	√	√
3.26	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3.27	Density of Hardened Concrete	BS EN 12390 Part 7	√	√	√	√	√	√	√	√	√	√	√	-	√	√	√	-	-
3.28	Obtaining and Testing of Drilled Cores	BS EN 12504 Part 1	√	√	√	√	√	√	-	√	√	√	√	-	√	-	√	-	-
3.29	Water Penetration Test	BS EN 12390 Part 8	√	√	√	√	√	√	-	-	√	√	√	-	-	√	√	-	-
3.30	Water Absorption Test	BS 1881 Part 122	√	√	√	√	√	√	-	-	√	√	√	√	√	-	√	-	-
3.31	Initial Surface Absorption (ISAT)	BS 1881 Part 208	√	√	√	√	√	√	-	-	√	√	√	-	√	-	√	-	-

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No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
3.32	Chloride Penetration Test	NT Build 492	√	√	√	√	√	√	-	-	√	√	-	-	-	-	√	-	-
3.33	Acid Soluble Chloride in Concrete	BS 1881 Part 124 Sec. 10.2	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	-	-
3.34	Acid Soluble Sulphate in Concrete	BS 1881 Part 124 Sec. 10.3	√	√	√	√	√	√	√	-	-	√	√	-	√	-	√	-	-
3.35	V-Funnel Test for Self-Compacting Concrete	BS EN 12350 Part 9	√	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
3.36	L-Box Test for Self-Compacting Concrete	BS EN 12350 Part 10	√	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-

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ملاحظات: - انها مسؤولية مهندس المشروع والاستشاري التأكد من عدم وجود صله بين المختبر المقترح والمقاول أو المقاول من الباطن بأي شكل كان سواء قانوني، مالي، عائلي أو خلافه.

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4. Masonry Blocks and Paving Units Tests

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai& M.	BATLABS	ERI	Bynunah
4.1	Compressive Strength of Clay Masonry Blocks	BS EN 771 Part 1	√	√	√	-	√	√	-	-	-	-	-	-	-	-	-	-	-
4.2	Water Absorption for Clay Masonry Blocks	BS EN 771 Part 1	√	√	√	-	√	√	-	-	-	-	-	-	√	-	-	-	-
4.3	Compressive Strength of Concrete Masonry Blocks	BS 6073 Part 1	-	√	-	√	√	√	-	-	√	√	-	-	√	√	√	-	-
4.4	Compressive Strength of Concrete Masonry Blocks	BS EN 772 Part 1	-	√	√	-	√	√	-	√	√	√	-	-	√	-	-	-	-
4.5	Water Absorption for Masonry Blocks	EN 771 Part 3	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
4.6	Measurement of Dimensions of Kerbs	BS EN 1340 Annex C	√	√	√	-	√	√	-	-	√	√	-	-	√	-	-	-	-
4.7	Water Absorption for Kerbs	BS EN 1340 Annex E	√	√	√	√	√	√	√	-	√	√	-	-	√	-	-	-	-
4.8	Transverse Strength of Kerbs	BS EN 1340 Annex F	-	√	√	-	√	√	√	-	√	√	-	-	√	-	-	-	-
4.9	Water Absorption for Paving Blocks	BS EN 1338 Annex E	-	√	√	√	√	√	√	-	√	√	-	√	√	-	-	-	-
4.10	Tensile Strength of Paving Blocks	BS EN 1338 Annex F	-	-	√	-	√	√	-	-	√	√	-	-	-	-	-	-	-
4.11	Transverse Strength of Concrete Paving Flags/Slabs	BS EN 1339 Appendix F	-	√	√	-	√	√	-	-	√	-	-	-	√	-	-	-	-

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Masonry Blocks and Paving Units Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai& M.	BATLABS	ERI	Bynunah
4.12	Water Absorption for Concrete Paving Flags/Slabs	BS EN 1339 Appendix E	-	√	√	-	√	√	-	-	√	-	-	-	√	-	-	-	-
4.13	Measurement of Dimensions of Paving Blocks	BS 6717 Annex B	√	√	-	√	√	√	-	-	√	-	-	√	√	√	-	-	-
4.14	Tensile Strength of Paving Blocks	BS 6717 Annex E	-	√	-	√	√	√	√	√	√	√	-	√	√	-	√	-	-
4.15	Water Absorption for Interlocks	ASTM C140	√	√	-	-	√	√	-	-	√	√	-	-	√	√	√	-	-
4.16	Compressive Strength and water Absorption of Terrazzo Tiles (Internal Use)	BS EN 13748 Part 1-Sec.5.5/5.8	-	√	√	-	-	-	-	-	-	√	-	-	-	-	-	-	-

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5. Cementitious Materials Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
5.1	Taking and Preparing Samples of Cement	BS EN 196 Part 7	-	√	√	√	√	√	-	-	√	-	-	-	-	-	√	-	-
5.2	Method of Sampling of Cement	ASTM C183	-	√	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-
5.3	Determination of Strength of Cement	BS EN 196 Part 1	-	√	√	√	√	√	-	-	√	√	-	-	-	-	-	-	-
5.4	Compressive Strength of Cement Mortars	ASTM C349	-	√	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-
5.5	Calcium Oxide Content	BS EN 196 Part 2–Cl. 13.14	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
5.6	Magnesium Oxide Content	BS EN 196 Part 2–Cl. 13.15	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
5.7	Aluminum Oxide Content	BS EN 196 Part 2–Cl. 13.11	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
5.8	Ferric Oxide Content	BS EN 196 Part 2–Cl. 13.10	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
5.9	Loss on Ignition	BS EN 196 Part 2–Cl. 7	√	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
5.10	Impure Silica Content	BS EN 196 Part 2–Cl. 13.2&3	-	√	√	-	-	-	-	-	√	-	-	-	-	-	-	-	-
5.11	Pure Silica Content	BS EN 196 Part 2–Cl. 13.6	-	√	-	√	√	-	-	-	√	-	-	-	-	-	-	-	-

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Cementitious Materials Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai &	BATLABS	ERI	Bynunah
5.12	Total Silica Content	BS EN 196 Part 2–Cl. 13.9	-	√	-	√	-	-	-	-	√	-	-	-	-	-	-	-	-
5.13	Alkalies Content	BS EN 196 Part 2–Cl. 17	-	√*	-	√	√	-	-	-	√	-	-	-	-	-	-	-	-
5.14	Determination of Setting Times of Cement	BS EN 196 Part 3	-	√	√	√	√	√	-	-	√	√	-	-	-	-	√	-	-
5.15	Determination of Soundness of Cement	BS EN 196 Part 3	-	√	-	√	√	√	-	-	√	√	-	-	-	-	√	-	-
5.16	Setting Time by Vicat Needle	ASTM C191	-	√	√	√	-	√	-	-	√	√	-	-	-	-	√	-	-
5.17	Normal Consistency of Cement	ASTM C187	-	√	√	√	-	√	-	-	√	√	-	-	-	-	√	-	-
5.18	Pozzolanicity Test of Pozzolanic Cement	BS EN 196 Part 5	√*	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
5.19	Chloride Content	BS EN 196 Part 21–Cl. 4	√	√	√	√	√	-	-	-	√	-	-	-	-	-	-	-	-
5.20	Carbon Dioxide Content	BS EN 196 Part 21	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
5.21	Fineness Test of Cement	BS EN 196 Part 6	-	√	√	√	√	√	-	-	√	√	-	-	-	-	√	-	-
5.22	Compressive strength for Ground Granulated Blast Furnace Slag	ASTM C989	-	√	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-

Cementitious Materials Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M.	BATLABS	ERI	Bynunah
5.23	Pozzolanic Activity Test	ASTM C1240	-	-	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-
5.24	Characterization of Fly Ash for Potential Uses	ASTM D5759	-	√	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
5.25	Chemical Analysis of Fly Ash	ASTM C311	-	-	√	√	-	-	-	-	√	√	-	-	-	-	-	-	-
5.26	Length Change of Cement Mortars	ASTM C1012	-	√	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-

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6. Road and Pavement Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
ASTM / AASHTO TESTS – BINDERS																			
6.1	Sampling of Binders	ASTM D140	-	√	-	-	√	-	-	-	√	√	-	√*	√	-	-	-	-
6.2	Distillation of Cutback Asphalt	ASTM D402	-	√	-	-	√	-	-	-	-	√	-	-	-	-	-	-	-
6.3	Application Rate of Bituminous Distributors	ASTM D2995	-	√	√	√	√	√	-	-	√	-	-	-	-	-	-	-	-
6.4	Determination of Density of Bitumen	ASTM D70	√	√	-	-	√	√	√	-	√	√	-	-	√	-	√	-	-
6.5	Penetration of Bituminous Materials	ASTM D5	√	√	√	-	√	√	√	-	√	√	√	√	√	-	-	-	-
6.6	Determination of Softening Point (Ring and Ball Method)	ASTM D36	√	√	-	-	√	√	√	-	√	√	-	√	√	-	-	-	-
6.7	Flash Point, Cleveland Open Cup	ASTM D92	-	√	-	-	√	√	-	-	-	√	-	√	√	-	-	-	-
6.8	Ductility of Bituminous Materials	ASTM D113	-	√	-	-	√	√	-	-	-	√	-	√	-	-	-	-	-
6.9	Solubility in Trichloroethylene	ASTM D2042	√	√	-	-	-	√	-	-	-	√	-	-	-	-	-	-	-
6.10	Loss on Heating	ASTM D6	-	√	-	-	√	√	-	-	-	√	-	-	-	-	-	-	-
6.11	Determination of Viscosity of Asphalt	ASTM D2171	-	-	-	-	-	-	-	-	-	√	-	-	√	-	-	-	-
6.12	Viscosity Determination using Rotational Viscometer (RV)	ASTM D4402 AASHTO T316	√	√	√	-	√	√	-	-	-	√	√	√	-	-	-	-	-
6.13	Flexural Creep Stiffness using the Bending Beam Rheometer (BBR)	ASTM D6648 AASHTO T313	√	√	√	-	√	-	-	-	-	√	√	√	-	-	-	-	-

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Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
6.14	Determining the Rheological Properties using Dynamic Shear Rheometer (DSR)	ASTM D7175 AASHTO T315	√	√	√	-	√	-	-	-	-	√	√	√	-	-	-	-	-
6.15	Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)	ASTM D6521 AASHTO R28	√	√	-	-	√	-	-	-	-	√	√	√	-	-	-	-	-
6.16	Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)	ASTM D2872 AASHTO T240	√	√	√	-	√	-	-	-	-	√	√	√	-	-	-	-	-
6.17	Multiple Creep and Recovery (MSCR) using Dynamic Shear Rheometer (DSR)	ASTM D7405 AASHTO TP70	√	√	-	-	√	-	-	-	-	√	√	√	-	-	-	-	-
6.18	Flash and Fire Points by Cleveland Open Cup	ASTM D92	√	√	-	-	-	√	-	-	-	√	√	√	-	-	-	-	-
6.19	Water in Petroleum Products and Bituminous Materials by Distillation	ASTM D95	√	√	-	-	√	-	-	-	-	√	-	-	-	-	-	-	-
6.20	Separation Tendency of Polymers	ASTM D7173	-	√	-	-	-	-	-	-	-	√	√	-	-	-	-	-	-
6.21	Solubility of Binders in Toluene	ASTM D5546 AASHTO T44	-	√	-	-	-	-	-	-	-	√	√	-	-	-	-	-	-
6.22	Direct Tension Test	ASTM D6723 AASHTO T314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
ASTM / AASHTO TESTS – ASPHALT MIXTURES																			
6.23	Sampling of Bituminous Mixtures	ASTM D979	-	√	-	√	√	√	√	-	√	√	√	√*	√	-	√	-	-
6.24	Sampling Compacted Bituminous Mixtures for Laboratory Testing	ASTM D5361	-	√	-	√	√	-	√	-	√	√	-	-	√	-	√	-	-
6.25	Preparation of Specimens Using Marshall Apparatus	ASTM D6926	-	√	√	√	√	√	-	-	√	√	√	-	√	-	√	-	-
6.26	Bulk Specific Gravity and Density	ASTM D2726	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	√	-
6.27	Bulk Specific Gravity and Density Using Coated Samples	ASTM D1188	-	√	-	√	-	-	-	-	√	√	-	-	-	-	-	-	-
6.28	Maximum Specific Gravity and Density	ASTM D2041	√	√	√	√	√	√	√	-	√	√	-	√	√	-	√	√	-
6.29	Maximum Specific Gravity and Density Using Vacuum Sealing	ASTM D6857	-	-	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-
6.30	Thickness of Asphalt Specimen	ASTM D3549	√	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
6.31	Marshall Stability and Flow of Bituminous Mixtures	ASTM D6927	-	√	√	√	√	√	√	-	√	√	√	√	√	-	√	-	-
6.32	Resistance to Plastic Flow Using Marshall Apparatus (6 in. Specimen)	ASTM D5581	-	√*	-	-	√	-	-	-	√	√	-	-	-	-	-	-	-
6.33	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	ASTM D2172	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	-
6.34	Asphalt Content of Hot-Mix Asphalt by Ignition Method	ASTM D6307	-	√	-	-	-	√	-	-	-	-	√	√	-	-	-	-	-
6.35	Mechanical Size Analysis of Extracted Aggregate	ASTM D5444	-	√	√*	√	√	√	-	-	-	√	√	√	√	-	√	-	-

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Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
6.36	Density of Bituminous Concrete in Place by Nuclear Methods	ASTM D2950	-	√	-	√	-	√	-	-	√	√	-	-	-	-	-	-	-
6.37	Sample Preparation and Density of Specimens Using Gyratory Compactor	AASHTO T 312	-	√	-	-	-	√	-	-	-	√	√	-	-	-	-	-	-
6.38	Preparation of Performance Test Specimens Using Gyratory Compactor	AASHTO PP60	-	√	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-
6.39	Developing Dynamic Modulus Master Curves Using AMPT	AASHTO PP61	-	-	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-
6.40	Dynamic Modulus and Flow Number for Hot Mix Asphalt (HMA)	AASHTO TP79	-	-	-	-	-	-	-	-	-	-	√	√	-	-	-	-	-
6.41	Indirect Tensile (IDT) Strength of Bituminous Mixtures	ASTM D6931	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
6.42	Fatigue Life of Asphalt Subjected to Repeated Flexural Bending	AASHTO T321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.43	Surface Frictional Properties Using the British Pendulum Tester	ASTM E303	-	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-
6.44	Skid Resistance of Paved Surfaces Using a Full-Scale Tire	ASTM E274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.45	Accelerated Polishing of Aggregates Using the British Wheel	ASTM D3319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.46	Computing IRI of Roads from Longitudinal Profile Measurements	ASTM E1926	-	√	√	-	-	-	-	-	-	√	√	-	-	-	-	-	-
6.47	Resistance of Compacted Asphalt to Moisture-Induced Damage	AASHTO T283	-	√	-	-	√	-	-	-	-	√	√	-	-	-	-	-	-

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Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory															
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BS and BS EN TESTS																			
6.48	Sampling of Asphalt	BS EN 12697 Part 27	√	√	√	√	√	√	√	√	√	√	√	-	√	-	√	-	-
6.49	Preparation of Samples for Testing	BS EN 12697 Part 28	√	√	√	√	√	√	-	-	√	√	√	-	√	-	√	-	-
6.50	Specimen Preparation by Impact Compactor	BS EN 12697 Part 30	√	√	√	√	√	√	-	√	√	√	√	-	√	-	√	√	-
6.51	Soluble Binder Content	BS EN 12697 Part 1	-	√	-	√	√	√	√	-	√	√	√	√	√	-	√	√	-
6.52	Particle Size Distribution	BS EN 12697 Part 2	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	-
6.53	Determination of Maximum Density	BS EN 12697 Part 5	√	√	√	√	√	√	-	-	√	√	-	-	-	-	√	-	-
6.54	Determination of Bulk Density	BS EN 12697 Part 6	√	√	√	√	√	√	√	√	√	√	√	√	√	-	√	√	-
6.55	Determination of Void Characteristics	BS EN 12697 Part 8	√	√	√	√	√	√	-	√	√	√	√	-	-	-	√	-	-
6.56	Determination of Reference Density	BS EN 12697 Part 9	-	√	-	√	-	-	-	-	√	-	-	-	-	-	-	-	-
6.57	Temperature Measurement	BS EN 12697 Part 13	√	√	√	√	√	√	√	-	√	√	√	-	√	-	√	-	-
6.58	Determination of Dimensions of Specimen	BS EN 12697 Part 29	√	√	√	√	√	√	√	√	√	√	√	-	√	-	√	-	-
6.59	Marshal Test	BS EN 12697 Part 34	√	√	√	√	√	√	√	√	√	√	√	-	√	-	√	√	-
6.60	Laboratory Mixing	BS EN 12697 Part 35	-	√	-	√	√	-	-	-	-	√	-	-	-	-	-	-	-

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Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
6.61	Determination of Thickness of Specimen	BS EN 12697 Part 36	√	√	√	√	√	√	-	√	√	√	√	√	√	-	√	√	-
6.62	Binder Content by Ignition	BS EN 12697 Part 39	√	√	√	√	-	-		-	-	√	√	√	-	-	-	-	-
6.63	Determination of Needle Penetration	BS EN 1426	-	√	-	-	√	√	√	√	√	-	-	√	√	-	√	-	-
6.64	Determination of Softening Point (Ring and Ball Method)	BS EN 1427	-	√	-	-	√	√	-	-	√	√	-	-	√	-	-	-	-
6.65	Determination of the indirect tensile strength of bituminous specimens	BS EN 12697 Part 23	-	√	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-
Pavement Markings Tests																			
6.66	Binder Content of Thermoplastic Material	BS 3262 Part 1–Ap. C	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.67	Softening Point (Ring and Ball Method) of Thermoplastic Material	BS 2000-58	√*	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
6.68	Glass Bead Content of Thermoplastic Material	BS 3262 Part 1–Ap. D	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.69	Glass Bead Content of Thermoplastic Material	AASHTO T250	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.70	Determination of Density of Thermoplastic Material	BS 3262 Part 3–Ap. C	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.71	Flash Point (Open) of Thermoplastic Material	BS 2000-35	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.72	Flow Resistance of Thermoplastic Material	BS 3262 Part 1–Ap. H	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
6.73	Combined Gradation of Material	BS 3262 Part 1–Ap. D	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Road and Pavement Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
6.74	Particle Size Distribution of Glass Beads	BS 6088 Appendix B	√*	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
6.75	Measurement of Retro-reflectivity of pavement marking materials	BS EN 1436 Annex A&B	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
7.76	Measurement of Retro-reflectivity of pavement marking materials	ASTM E1710	-	√	-	-	-	-	-	-	-	-	-	-	-	-	√	-	-
7.77	Measurement of Skid Resistance	BS 3262 Part 1–Ap. J	√*	√	-	-	-	-	-	-	-	√	-	-	-	-	√	-	-
7.78	Determination of Heat Stability	BS 3262 Part 1–Ap. G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.79	Determination of Luminance Factor	BS 3262 Part 1–Ap. F	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.80	Dry Film Thickness	BS 3262 Part 3–Ap. B	-	√	-	-	-	-	-	-	-	√	-	-	-	-	√	-	-
7.81	Wet Film Thickness by Notch Gauge	BS EN 13197 Annex C	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
7.82	Wet Film Thickness by Notch Gauge	ASTM D4414	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: - **It is the responsibility of the Engineer and Consultant to ensure the materials testing laboratory proposed by the Contractor is totally independent and has no relationship, inclusive of formal, financial, family or legal, or other with the Contractor or the Contractors Sub-contractors.**

- **(√*) means conditional approval**

ملاحظات: - انها مسؤولية مهندس المشروع والاستشاري التأكد من عدم وجود صله بين المختبر المقترح والمقاول أو المقاول من الباطن بأي شكل كان سواء قانوني، مالي، عائلي أو خلافه.

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Approved Labs for Asphalt Mix Preparation and Verification

No.	Item	Laboratory			
		ACES	Fugro	Tech Lab	QGEC
Marshall Mixtures					
1	Asphalt Mix Design	√	√	-	-
2	Asphalt Mix Verification*	√	√	√	√

*Mix design verification shall be carried out by a lab different than the one that prepared the mix.

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7. Steel Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai &M.	BATLABS	ERI	Bynunah
7.1	Tensile Strength Test	BS EN 10002 Part 1	-	√	-	√	√	√	-	-	√	√	-	√*	-	-	-	-	-
7.2	Tensile Strength Test	ASTM A370	√	√	√	-	√	√	-	-	√	-	√	√*	-	-	-	-	-
7.3	Bend Test	BS 4449 Sec. 7.2.5	√	√	√	√	√	√	-	-	√	√	-	√*	-	-	-	-	-
7.4	Rebend Test	BS 4449 Sec. 7.2.5	√	√	√	√	√	√	-	-	√	√	√	√*	-	-	-	-	-
7.5	Izod Impact Test of Metals	BS 131 Part 1	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
7.6	Notched Bar Impact Test of Metals	ASTM E23	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
7.7	Charpy Impact Method	BS EN 10045	-	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-

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8. Geotechnical Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
Laboratory Tests																			
8.1	Description of Soil and Rock	BS 5930 Section 6	-	√	√	√	√	√	-	-	√	-	√	√*	-	√	-	-	-
8.2	Undrained Triaxial Test without Pore Water Pressure Measurement	BS 1377 Part 7-Sec. 8	-	-	-	√	-	-	-	-	√	-	-	-	-	-	-	-	-
8.3	Point Load Index Determination	ASTM D5731	-	√	√	√	√	√	-	-	√	√	√	√	-	-	-	√	-
8.4	Preparing Rock Core Specimens to Dimensional and Shape Tolerances	ASTM D4543	-	√	√	√	-	√	-	-	√	-	√	-	-	√	-	-	-
8.5	Compressive Strength of Rock Core Specimen	ASTM D7012	-	√	√	√	√	√	-	-	√	√	√	√	-	√	-	-	-
8.6	Determination of One Dimensional Consolidation Properties of Soils	BS 1377 Part 5-Sec. 3	-	√	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-
8.7	Determination of One Dimensional Consolidation Properties of Soils	ASTM D2435	-	√	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
8.8	Direct Shear on Soil (Small Box)	BS 1377 Part 7-Sec. 4	-	√	√	√	√	√	-	-	√	√	√	√	-	√	-	-	-
8.9	Direct Shear on Soil (Large Box)	BS 1377 Part 7-Sec. 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.10	Direct Shear on Rock	ASTM D5607	-	√	-	-	-	-	-	-	√	-	-	√	-	-	-	-	-

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Geotechnical Tests (Cont.)

No.	Test	Standard	Laboratory															
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
8.11	One Dimensional Swell of Cohesive Soils	ASTM D4546	-	√	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-
8.12	Constant Head Permeability Test	BS 1377 Part 5-Sec. 5	-	-	√	-	-	√	-	-	√	√	-	-	-	-	-	-	-
8.13	Vane Shear Test	BS 1377 Part 7-Sec. 3	-	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
Field Tests																			
8.14	Soil Sampling	BS 5930 Cl. 22	-	√	√	√	√	√	-	-	-	-	√	√*	-	√	-	-	-
8.15	Ground Water Sampling	BS 5930 Cl. 23	-	√	√	√	√	√	-	-	√	-	√	√*	-	√	-	-	-
8.16	Ground Water Level Measurement	BS 5930 Cl. 23, 27, 47	-	√	√	√	-	√	-	-	√	-	√	√*	-	√	-	-	-
8.17	Falling Head Permeability Test	BS 5930 Cl. 25	-	√	√	√	√	√	-	-	√	-	√	√*	-	-	-	-	-
8.18	Packer Test	BS 5930 Cl. 25	-	√	√	√	√	√	-	-	√	-	√	√*	-	-	-	-	-
8.19	Standard Penetration Test (SPT)	BS 1377 Part 9-Sec. 3.3	-	√	√	√	-	√	-	-	√	√	√	√*	-	√	-	-	-

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Geotechnical Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah
8.20	Electrical Resistivity Test	ASTM G57	-	√	√	√	√	√	-	-	-	√	√	√*	-	-	-	-	-
8.21	Plate Load Test	BS 1377 Part 9-Sec. 4.1	√	√	√	√	√	√	√	-	-	√	√	√	-	-	-	√	-
8.22	California Bearing Ratio (CBR) Test	BS 1377 Part 9-Sec. 4.3	√	√	√	√	√	√	-	-	-	-	√	√	-	-	√	√	-
8.23	Dynamic Cone Penetrometer for Shallow Pavements	ASTM D6951	√	√	√	-	-	-	-	-	√	-	-	-	-	-	√	-	-

Notes:

- **Other tests related to geotechnical field can be found in soil and aggregate tests sections.**
- **This list is for geotechnical related tests. General requirements for geotechnical soil investigation firms should follow the Ministry of Environment conformity criteria.**
- **It is the responsibility of the Engineer and Consultant to ensure the Materials Testing Laboratory proposed by the Contractor is totally independent and has no relationship, inclusive of formal, financial, family or legal, or other with the Contractor or the Contractors Sub-contractors.**
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9. Environmental Tests

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al HAl& M	ERI	Bynunah	Ashghal	GeoChem
9.1	pH	APHA/AWWA 4500-H+B 22nd Edition 2012	√	√	√	√	-	√	-	-	-	√	-	√	-	-	-	-	-	√	√
9.2	Electrical Conductivity	APHA/AWWA 2510-B 22nd Edition 2012	√	√	√	√	-	√	-	-	-	√	-	√	-	-	-	-	-	√	√
9.3	Turbidity	APHA/AWWA 2130 B 22nd Edition 2012	√	√	√	√	-	√	-	-	√	-	-	√	-	-	-	-	-	√	-
9.4	Total Solids	APHA/AWWA 2540-B 22nd Edition 2012	√	√	√	√	-	√	-	-	-	√	-	-	-	-	-	-	-	√	-
9.5	Total Suspended Solids (TSS)	APHA/AWWA 2540-D 22nd Edition 2012	√	√	√	√	-	√	-	-	√	-	-	√	-	-	-	-	-	√	-
9.6	Total Volatile Suspended Solids (TVSS)	APHA/AWWA 2540-D 22nd Edition 2012	-	√	√	-	-	√	-	-	-	√	-	-	-	-	-	-	-	√	-
9.7	Total Dissolved Solids (TDS)	APHA/AWWA 2540-C 22nd Edition 2012	√	√	√	√	-	√	-	-	-	√	-	√	-	-	-	-	-	√	√
9.8	Total Volatile Dissolved Solids (TVDS)	APHA/AWWA 2540-C 22nd Edition 2012	-	√	√	-	-	√	-	-	-	√	-	-	-	-	-	-	-	√	-
9.9	Settleable Solids	APHA/AWWA 2540-F 22nd Edition 2012	-	-	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	-
9.10	Sludge Weight	APHA, SM,2710 D, 22nd Edition 2012	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.11	Sludge Volume	APHA, SM,2710 D, 22nd Edition 2012	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-

Environmental Tests (Cont.)

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al HAI& M	ERI	Bynunah	Ashghal	GeoChem
9.12	Sludge Volume Index	APHA, SM,2710 D, 22nd Edition 2012	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.13	Biochemical Oxygen Demand (BOD)	APHA/AWWA 22nd Edition 2012.Test-5210B & 4500-OC	√	√	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	√
9.14	Chemical Oxygen Demand (COD)	APHA/AWWA 22nd Edition 2012 Test-5220 D	√	√	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	√
9.15	Total Kjeldahl Nitrogen	APHA/AWWA 4500 N 22nd Edition 2012	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.16	Total Organic Nitrogen	APHA/AWWA 4500 N org- 22nd Edition	-	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.17	Ammonia Nitrogen	APHA/AWWA 22nd Edition 2012 Test-4500 NH3 B&C	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.18	Nitrate Nitrogen	APHA/AWWA 22nd Edition 2012 Test-4500-NO3D	-	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.19	Nitrite Nitrogen	APHA/AWWA 22nd Edition 2012 Test-4500-NO2B	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.20	Oil & grease	APHA/AWWA 5520 D 22nd Edition 2012	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	√
9.21	Total Chlorine	APHA/AWWA 4500-Cl G, 22nd Edition 2012	√	√	√	√	-	-	-	-	√	-	-	-	-	-	-	-	-	√	-
9.22	Residual Chlorine	APHA/AWWA 4500-Cl I, 22nd Edition 2012	√	√	-	-	-	-	-	-	√	-	-	-	-	-	-	-	-	√	-

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Environmental Tests (Cont.)

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al HAI& M	ERI	Bynunah	Ashghal	GeoChem
9.23	Chloride	APHA/AWWA 4500-Cl B, 22nd Edition	√	√	√	√	-	√	-	-	-	√	-	√	-	-	-	-	-	√	√
9.24	Chloride	APHA 4110-B, 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.25	Phosphorous (total)	APHA/AWWA 4500-P D&C 22nd Edition 2012	√	√	-	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	-
9.26	Phenol Concentrations	APHA/AWWA 5530 B&C 22nd Edition 2012	-	√*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.27	Cyanide	APHA/AWWA 4500-CN C&E 22nd Edition 2012	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.28	Sulphate	APHA/AWWA 4500-SO4, 22nd Edition 2012	√	√	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-	√	√
9.29	Sulphate	APHA 4110-B, 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.30	Sulphide	APHA/AWWA 4500--S2 E or F, 22nd Edition 2012	√	√	√	-	-	-	-	-	√	-	-	-	-	-	-	-	-	√	-
9.31	Fluoride	APHA/AWWA 4500F, 22nd Edition 2012	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.32	Iron	APHA 3120-B 22nd Edition 2012	-	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.33	Total Hardness	APHA/AWWA 2340-C, 22nd Edition 2012	√	√	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	-

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9.34	Magnesium Concentration by calculation	APHA/AWWA 3500-Mg B- 22nd Edition 2012	-	√	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	√
9.35	Magnesium	APHA 3120-B 22nd Edition 2012	-	√	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	√
9.36	Calcium	APHA/AWWA 3500-Ca B, 22nd Edition 2012	√	√	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	√	√
9.37	Calcium	APHA 3120-B, 22ndEdition 2012	-	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.38	Sodium	APHA 3120-B, 22nd Edition 2012	-	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.39	Potassium	APHA 3120-B, 22nd Edition 2012	-	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.40	Bromide	APHA 4110-B, 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.41	Bromate		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.42	Total Alkalinity	APHA/AWWA 2320B, 22nd Edition 2012	√	√	√	√	-	√	-	-	√	-	-	-	-	-	-	-	-	√	-
9.43	Phenolphthalein Alkalinity	APHA/AWWA 2320-B, 22nd Edition 2012	√	√	√	√	-	√	-	-	√	√	-	-	-	-	-	-	-	√	-
9.44	Bicarbonate	APHA 2320-B, 22nd Edition 2012	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.45	Carbonate	APHA 2320-B, 22nd Edition 2012	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√

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No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al HAI& M	ERI	Bynunah	Ashghal	GeoChem
9.46	Residual Pesticides	EPA 608	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.47	Organic Hydrocarbon	APHA/AWWA/ 6200 volatile Organic Compounds	√	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.48	Total Organic Carbon (TOC)	APHA/AWWA 5310-B or C, 22nd Edition 2012	√*	-	√*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.49	Total Silicates	APHA/AWWA/ 4500- SilO2-C, 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.50	Silicon, Aluminum	APHA/AWWA/ 3111 D , Direct Nitrous Oxide – Acetylene flame method (AAS)	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.51	Heavy Metals Concentrations	APHA/ SM/ 3120 B Heavy Metal Analysis by ICP APHA/ SM/ 3110 B Heavy Metal	√	√	√	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-

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No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al HAI& M	ERI	Bynunah	Ashghal	GeoChem
9.52	Total Coliforms	APHA/AWWA 9222B & 9222D, 22nd Edition 2012	-	√	-	√	-	-	-	-	√	-	-	-	-	-	-	-	-	√	√
9.53	Fecal Coliform	APHA/AWWA-9222D, 22nd Edition 2012	-	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	√	√
9.54	E-Coli	APHA/AWWA-9223B & G, 22nd Edition2012	-	√	√	-	-	-	-	-	√	-	-	-	-	-	-	-	-	√	√
9.55	Nematodes (Helminths) Eggs	WHO, Lab manual of Parasitological and Bacteriological Techniques, 1996	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.56	Microscopic Examination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√	-
9.57	Pseudomonas Aeruginosa	APHA 9213-E 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.58	Fecal Streptococcus	APHA 9230-C 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.59	Legionella	APHA 9260-J 22nd Edition 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
9.60	Viruses	RT – PCR Methodology	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√*

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10. Non Destructive Tests

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al Hai &M.	ERI	Bynunah	Ashghal
10.1	Falling Weight Deflectometer	ASTM D4694	-	√	√	-	-	-	-	-	-	-	√	-	-	-	-	-	-	-
10.2	Road Profilometer (IRI)	ASTM E950	-	√	√	-	-	-	-	-	√	√	√	-	-	-	-	-	-	√
10.3	Pavement Quality Indicator	ASTM D7113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
10.4	Rebound Hammer Test for Concrete	ASTM C805	-	√	√	-	-	√	-	-	√	-	√	√	√	√	-	-	-	√
10.5	Concrete Cover Determination	BS 1881 Part 204	-	√	√	-	√	√	-	-	-	√	√	-	-	-	-	-	-	-
10.6	Ultrasonic Pulse Velocity	BS EN 12504 Part 4	-	√	√	-	√	√	-	-	√	√	√	-	-	√	-	-	-	-
10.7	Crack Width Gauge	Gauge Manual	-	√	√	-	√	-	-	-	-	-	-	-	-	-	-	-	-	-
10.8	Crack Measurement Microscope	Microscope Manual	-	√	√	-	√	√	-	-	-	-	-	-	-	-	-	-	-	-
10.9	Pile Integrity (Pulse Echo Test)	ASTM D5882	-	√	√	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-
10.10	Pile Integrity (Cross Hole Test)	ASTM D6760	-	√	√	-	-	√	-	-	√	-	-	-	-	-	-	-	-	-

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Non Destructive Tests (Cont.)

No.	Test	Standard	Laboratory																
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	BATLABS	JEL	Al Hai &M.	ERI	Bynunah	Ashghal
10.11	Pile Dynamic Test	ASTM D4945	-	√	√	-	-	√	-	-	√	-	-	-	-	-	-	-	-	-
10.12	Caliper Logging of Borehole	ASTM D6167	-	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-
10.13	Coating Pull-Off Test	ASTM D4541	-	√	√	-	-	√	-	-	√	-	-	-	-	-	-	-	-	-
10.14	Coating Thickness Measurement	ASTM D7091 / D6132	√*	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-
10.15	Holiday Detection of Coating	ASTM D4787 / D5162	-	√	-	-	-	√*	-	-	-	-	-	-	-	-	-	-	-	-
10.16	Magnetic Particle Inspection	ASTM E709 / ASME - Sec. V	√*	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-
10.17	Dye Penetration Test	ASTM E165 / ASME - Sec. V	√*	√	-	-	-	√	-	-	-	-	-	-	-	-	-	-	-	-

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11. Fire Resistance Tests

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	DTL	Fugro	QGEC	JEL	Al Hai&M	BATLABS	ERI	Bynunah	TBWIC
11.1	Surface Burning Characteristics	ASTM E84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.2	Fire Resistance Tests for Doors, Shutters and Openable Windows	BS EN 1634 Part 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.3	Fire Resistance Tests for Non-Loadbearing Elements – Walls and Partitions	BS EN 1364 Part 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.4	Fire resistance Tests for Non-Loadbearing Elements - Curtain Walling	BS EN 1364 Part 3 & 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.5	Fire resistance Tests for Glazing	BS 476 Part 22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.6	Fire Tests of Penetration Fire Stops	ASTM E814	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.7	Hose Stream Application – Integrity of Building Elements after Fire Exposure	ASTM E2226	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
11.8	Fire classification of construction products and building elements	BS EN 13501 Part 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√

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12. Leakage Testing of Buildings

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	Fugro	DTL	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah	TBWIC
12.1	Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences	ASTM E283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.2	Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Static Air Pressure Difference	ASTM E330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.3	Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference	ASTM E331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.4	Air Permeability of Doors and Windows	BS EN 1026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.5	Water tightness of Doors and Windows	BS EN 1027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.6	Doors and Windows Resistance to Wind Loads	BS EN 12211	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.7	Air Permeability of Curtain Walling	BS EN 12153	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.8	Water Tightness of Curtain Walling under Static Pressure	BS EN 12155	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√

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Leakage Testing of Buildings (Cont.)

No.	Test	Standard	Local Labs																	Abroad Labs
			Exova	ACES	ACTS	Gulf Lab	Tech Lab	QIL	Pioneer	Teyseer	QEL	Fugro	DTL	QGEC	JEL	Al Hai & M	BATLABS	ERI	Bynunah	TBWIC
12.9	Resistance to Wind Load of Curtain Walling	BS EN 12179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.10	Air Permeability of Buildings	BS EN 13829	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.11	Water Penetration using Dynamic Pressure for Windows, Curtain Walls and Doors	AAMA 501.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√
12.12	Water leakage field check for Storefronts, Curtain Walls and Sloped Glazing Systems	AAMA 501.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	√

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13. Calibration Labs

Laboratory			TISSCO		BDH		Al Bader		LABTECH	
No	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
01	**Mass**	Weighing scales	1 mg to 30 kg 10 lb. to 660 lb.	295 mg 0.3 lb.	0 to200 g Up to 1 kg Up to 6 kg Up to 30 kg Up to 150kg Up to 2000kg	0.001g 0.01g 0.025g 0.12g 13g 0.16 kg			0 to 220g /0.0001 g 221to1000 g /0.001 g 0 to 5000 g /0.01 g 0 to 10000g /0.1g 0 to 30 kg 0 to 500 kg 0 to 1500 kg	0.00009 g 0.0017 g 0.01 g 0.06 g 0.0011kg 0.01 kg 0.09 kg
		OIML Masses	1 mg to 500 mg 1g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 10 kg	2 µg 3 µg 4 µg 5 µg 8 µg 10 µg 23 µg 36 µg 44µg 3 mg	1mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1kg 2 kg	0.005mg 0.005mg 0.005mg 0.005mg 0.007mg 0.007mg 0.010mg 0.011 mg 0.03 mg 0.03 mg 0.03 mg 0.03 mg 0.05 mg 0.05 mg 0.08 mg 0.55 mg 0.55 mg 1.5 mg 2.0 mg 5.1 mg				

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laboratory			TISSCO		BDH		Al Bader		LABTECH	
NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
01	Mass	OIML Masses			5 kg 10 kg 20 kg	15 mg 103 mg 112 mg				
02	Pressure	Pneumatic pressure gauge	Up to 1 bar Up to 100 bar	0.065% 0.024%	0 to 25 bar	0.13 bar			0 to 10000 psi /1psi	0.41%
		Vacuumed gauge	- 1 bar	0.065%	0.9 bar to 0 bar	0.013 bar				
		Hydraulic pressure gauge	Up to 100 bar 100 to 1000 bar Up to 900 bar 900 to 1800 bar 1800 to 2750bar	0.066% 0.07% 0.026% 0.038% 0.044%	0 bar to 700bar	0.86 bar			0 to 10000 psi /1psi	0.41%
03	Force	Compression machines	(200 to 5000) kN	1.3 %	100N to 250 kN 100N to 3000 kN 200 kN to 2000kN	0.3 % 0.3 % N/A			0 to 100 kN /0.01kN 0 to 3000 kN /0.01 kN	0.12 % 0.07 %
		Proving rings	Up to 200 kN	0.29 %	100 N to 50 kN	1.0 %			0 to 50 kN /0.01 kN	0.25 %
		Tension load cell	Up to 200 kN	0.29 %						
		Tension machines	200 kN to 1700 kN	1.3 %						
		Stability	Up to 2000 kN	0.42%	Alignment of upper machine platen	N/A				

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laboratory			TISSCO		BDH		Al Bader		LABTECH	
NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
02	Force	Torque	0 to 2 nm 1 to25 nm 8 to 150 nm 30 to 1500nm	0.92 % 0.71 % 0.68% 0.73 %						
03	Force	Hardness Rockwell hardness machines			20 HRC to 70 HRC 20 HRB to 100 HRB 70 HR15N to 91HR15N 42HR30N to 80 HR30N 73 HR15T to 93 HR15T 43 HR30T to 82 HR30T	1.3 HRC 1.3 HRB 1.3 HR15N 1.3 HR30N 1.5 HR15T 1.5 HR30T				
		Hardness Vickers hardness machines			Vickers scale HV5 50 to 1000HV Vickers scale HV10 50 to 1000HV Vickers scale HV30 50 to 1000HV	 2.2 % 1.9 % 1.8 %				
		Hardness Brinell hardness machines			Brinell scale 5/750 200 to 400 HBW Brinell scale 10/3000 200 to 400 HBW Brinell scale 2.5/187.5 200 to 400 HBW	 2.5 % 2.0 % 2.7 %				
04	Thermal	Glass thermometer	- 196°C to 420°C	0.42 °C	- 30°C to 100°C 100°C to 250°C	0.3°C 0.5°C				

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NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
04	Thermal	Prop thermometer, switch gauge, transmitter	- 196°C to 420°C	0.42 °C	-30°C to 100°C 30°C to 90°C >100°C to 250°C >90°C to 300°C >250°C to 500°C >300°C to 600°C >600°C to 900°C >900°C to 1200°C	0.22 °C 0.9 °C 0.35 °C 1.2 °C 1.5 °C 3.0 °C 3.0 °C 5.0 °C			0 to 250°C /0.01 ° c	0.11°c
		Controllers,	-200°C to 0°C 0°C to 100°C 100°C to 400°C 400°C to 630°C 630°C to 800°C	0.05 °C 0.07 °C 0.1 °C 0.12 °C 0.23 °C	-20°C to 500°C 500°C to 1200°C	0.5 °C 1.5 °C			-30 to 1600°C /0.01°C -200 to 850°C /0.01°C	0.02°C 0.1°C
		Temperature blocks							-40 to 400°C /0.1°C Up to 1000°C /0.1°C	0.13°C 1.20°C
		Thermocouple Indicators Type K	-200°C to -100°C -100°C to 120°C 120°C to 1000°C 1000°C to 1372°C	0.33 °C 0.18 °C 0.26 °C 0.04 °C	-200°C to -25°C -25°C to 1372°C	0.7°C to 0.35 °C 0.35°C to 0.8 °C			-200 to 1700°C /0.01° C	0.1° C
		Thermocouple Indicators Type J	-210°C to -100°C -100°C to 670°C 670°C to 1200°C	0.27 °C 0.17 °C 0.23 °C	200°C to 30°C -30°C to 1200°C	0.7 °C to 0.35 °C 0.35°C to 0.8 °C			-200 to 1700°C /0.01° C	0.1° C

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NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
04	Thermal	Thermocouple Indicators Type T	-250°C to -150°C -150°C to 0°C 0°C to 400°C	0.36 °C 0.24 °C 0.16 °C	-200°C to 0°C 0°C to 400°C	1.3°C to 0. 5 °C 0.5°C to 3.0 °C			-200 to 1700°C /0.01° C	0.1° C
		Thermocouple Indicators Type R			0°C to 400°C 400°C to 1700°C	1.1°C to 0. 7 °C 0.7°C to 0. 8 °C			-200 to 1700°C /0.01° C	0.1° C
		Thermocouple Indicators Type S	0°C to 250°C 250°C to 1400°C 1400°C to1767°C	0.47 °C 0.37 °C 0.46 °C	0°C to 1700°C	1.0 °C			-200 to 1700°C /0.01° C	0.1° C
		Thermocouple Indicators Type N			-200°C to -25°C 25°C to 1300°C	0.8°C to 0.45 °C 0.45°C to 0.55 °C			-200 to 1700°C /0.01° C	0.1° C
		Thermocouple Indicators Type E	-250°C to -100°C -100°C to 650°C 650°C to 1000°C	0.5 °C 0.16 °C 0.21 °C					-200 to 1700°C /0.01° C	0.1° C
		Ovens freezers Fridge incubators	- 196°C to 420°C	0.42 °C	-30°C to 300°C	0.7 °C			30 to 250°C 0 to 20°C /0.1°C 0 TO 90 °C	0.70 ° C 0.70 °C 0.70°C
		Liquid baths	- 196°C to 420°C	0.42 °C	-30°C to 300°C	0.7 °C			5 to 95 °C /0.1°C	0.32°C
		Muffle furnaces	100°C to 1200°C	1.5 °C	300°C to 900°C 900°C to 1200°C	0.5 °C 7 °C			300 to 1000°C	1.20°C
		Humidity equipment	11 % RH 33 % RH 76 % RH 97 % RH	1.6 % RH 1.7 % RH 1.5 % RH 2.0 % RH						

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laboratory			TISSCO		BDH		Al Bader		LABTECH	
NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
05	Volume	Pipette, micropipette			Up to 2 µl Up to 20 µl Up to 200 µl Up to 1000 µl Up to 5000 µl	0.1 µl 0.2 µl 0.7 µl 0.92 µl 2 µl				
06	Dimensional	Calipers	0.5 mm to 300 mm 300 mm to 900 mm	(8+0.6 L)µm (16+0.6 L)µm					0 to 150mm /0.01mm	0.007 mm
		Micrometers	Up to 25.4 mm 25.4 mm to 300 mm 300 mm to 900 mm	(0.75+0.6 L)µm (3.1+0.6 L)µm (14+0.6 L)µm					0 to 25 mm /0.001 mm	0.007 mm
		Height gages-length Dial Digital Vernier	 Up to 1000 mm Up to 1000 mm Up to 1000 mm	 21 µm 19 µm 35µm					 0 to 100 mm /0.001 mm	 0.0002 mm
		Gage blocks-length	Up to 100 mm	(2.1+0.6 L)µm						
		Cylindrical gage -plugs and pins	Up to 25.4 mm 25.4 mm to 50.8 mm 50.8 mm to 76.2 mm 76.2 mm to 101.6 mm 0.02 in to 2 in	(0.33+0.34 L)µm (0.42+0.34 L)µm (0.59+0.34 L)µm (0.77+0.34 L)µm 0.003 in					0.5to 300mm	0.0012 mm

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NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
06	Dimensional	Thread plug gages Pitch diameter Major diameter	Up to 25.4 mm 25.4 mm to 150 mm Up to 25.4 mm 25.4 mm to 150mm	 2.1 µm (2.1+2.5 D)µm 1.2 µm (1.2+2.5 D)µm						
		Ring gauges-cylindrical &tapered Bore gauge	Up to 25.4 mm 25.4 mm to 110 mm	0.75 µm (0.75+1.5 L)µm					0 to 200 mm	0.0002 mm
		Length indicators	Up to 25.4 mm 25.4 mm to 50.8 mm 50.8 mm to 200 mm	0.87 µm 2.2 µm 17 µm						
		Length standard Metal tape measure	Up to 100 mm 100 mm to 200mm	0.59 µm (0.58+0.6 L)µm					0 to 5000 mm /0.5 mm 0 to 50000 mm /0.5 mm	0.12 mm 0.12 mm
		Coating thickness	Up to 1530 mm	4.7 µm						
		Surface plates flatness	(300×300)mm (1800×3700)mm	(0.89+0.6 L)µm						
		Thickness gauge Feeler gauge							0 to 100 mm /0.001 mm 0.03 to 1mm	0.0002 mm 0.0011 mm
07	Optical	Optical power measure (6 to 60)Db (10 to 110)dB (10 to 110)dB	 850 nm 1310 nm 1550 nm	 4.9 % 4.9 % 4.7 %						
		Optical wavelength measure	700 nm to 1650 nm	3.9 %						
		Fiber Optical wavelength measure	1510 nm to 1540 nm	1.5 parts in 10^6nm						

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laboratory			TISSCO		BDH		Al Bader		LABTECH	
NO	Calibration field	Calibration item	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability	Range	Calibration measurement capability
08	Electrical	DC voltage generate	0 mV to 220 mV 220 mV to 2.2 V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1100 V	11µV/V+0.6 µV 10µV/V+1.0 µV 11µV/V+3.5 µV 10µV/V+6.5 µV 11µV/V+80 µV 13µV/V+500 µV	330 mV 3.3 V 33 V 330 V 1000 V	60 µV 0.6 mV 6 mV 60 mV 0.6 V			100 mV 1V 10 V 100V 1000 V	0.0024 mV 0.0000036V 0.00006V 0.0008V 0.0017 V
		DC voltage measure	0 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V 1 kV to 70 kV	13µV/V+3.0 µV 17µV/V+0.3 µV 13µV/V+0.5 µV 15µV/V+30 µV 27µV/V+100 µV 0.1 %					100 mV 1V 10 V 100V 1000 V	0.0024 mV 0.0000036V 0.00006V 0.0008V 0.0017 V
		Resistance measure	0 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 10 MΩ 10 MΩ to 100 MΩ 100 MΩ to 1 GΩ	19 parts in 10^6Ω+0.06 mΩ 15 parts in 10^6Ω+0.6 mΩ 13 parts in 10^6Ω+0.6 mΩ 18 parts in 10^6Ω+2.4 Ω 59 parts in 10^6Ω+120 Ω 0.058 %+1.2 kΩ 1.8 %+10 kΩ	2 Ω 11 Ω 20 Ω 120 Ω 300 Ω 1 kΩ 12 kΩ 120 kΩ 330 kΩ 3 MΩ 33 MΩ 100 MΩ	9.0 mΩ 12 mΩ 12 mΩ 12 mΩ 15 mΩ 0.1 Ω 0.9 Ω 60 Ω 60 Ω 0.6 kΩ 7.0 kΩ 60 kΩ			0 Ω to 10 Ω 0 Ω to 100 Ω 0 Ω to 1000 Ω 0 Ω to 10 kΩ 0 Ω to 100 kΩ 0 Ω to 1000 kΩ 0 Ω to 10 MΩ 0 Ω to 100 MΩ 0 Ω to 1 GΩ	0.006 Ω 0.06 Ω 0.6 Ω 0.006 kΩ 0.06 kΩ 0.6 kΩ 0.006 MΩ 0.065 MΩ 0.0006 GΩ
09	Radiation	Nuclear density gauge - density					1772.7 kg/m³ 2225.0kg/m³ 2693.0 kg/m³	0.3 % 0.3 % 0.3 %		
		Nuclear density gauge - moisture					568kg/m³	1.33 %		

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Approved Site Laboratories

S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Liquid Limit (Casagrande method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Sand Replacement Method -Small Pouring Cylinder)	BS 1377 Part 9: Sec. 2.1
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	BS EN 933 Part 8/ ASTM D2419
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	1.Soil Tests	Particle Size Distribution	ASTM D6913
				Liquid Limit, Plastic Limit and Plasticity Index of Soil	ASTM D4318
				Materials Finer than No. 200 (0.075mm) Sieve	ASTM D1140
				Lab Compaction Test using Modified Effort	ASTM D1557
				Determination of Moisture Content	ASTM D2216
				Field Density (Nuclear)	ASTM D6938
				Determination of California Bearing Ratio (CBR)	ASTM D1883
				Correction of Density and Water Content for Soils	ASTM D4718
				Field Density (Sand Cone)	ASTM D1556
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Sampling of Aggregates	ASTM D75
				Reducing Samples to Testing Size	ASTM C702
				Particle Size Distribution	ASTM C136

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	2.Aggregate Tests	Material Finer than 0.075 mm	ASTM C117
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2
				Particle Density and Water Absorption (All larger than 10mm aggregate)	BS 812 Part 2–5.3
				Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4
				Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5
				Determination of Shell Content	BS EN 933 Part 7
				Material Finer than 0.075 mm	BS EN 933 Part 1
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Determination of Aggregate Crushing Value	BS 812 Part 110
				Determination of Ten Percent Value	BS 812 Part 111
				Determination of Aggregate Impact Value	BS 812 Part 112
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	2- Aggregate Tests	Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Clay Lumps and Friable Particles	ASTM C142
				Percentage of Fractured Particles	ASTM D5821
				Los Angeles Abrasion	ASTM C131
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Determination of Particle Density and Water Absorption	BS EN 1097 Part 6
				Flakiness Index	BS EN 933 Part 3/ BS 812 Part 105.1/ ASTM D4791
				Elongation (Shape) Index	BS EN 933 Part 4/ BS 812 Part 105.2/ ASTM D4791
				Magnesium Sulphate Soundness	ASTM C88

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	3. Concrete Tests	Making and Curing of Specimen for Strength Test	ASTM C31/ BS EN 12390 Part 2
				Density of Hardened Concrete	BS EN 12390 Part 7
				Slump Test	BS EN 12350 Part 2/ ASTM C143
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Obtaining and Testing of Drilled Cores	BS EN 12504 Part 1/ ASTM C42
				Capping of Cylindrical Concrete Specimen	ASTM C617
				Initial Surface Absorption (ISAT)	BS 1881 Part 208
				Water Penetration Test	BS EN 12390 Part 8/ BS 1881 Part 122
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3/ASTM C39

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Sampling of Bituminous Mixtures	ASTM D979
				Sampling Compacted Bituminous Mixtures for Laboratory Testing	ASTM D5361
				Preparation of Specimens Using Marshall Apparatus	ASTM D6926
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Determination of Maximum Density	BS EN 12697 Part 5
				Marshal Test	BS EN 12697 Part 34
				Soluble Binder Content	BS EN 12697 Part 1
				Bulk Specific Gravity and Density	ASTM D2726
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Application Rate of Bituminous Distributors	ASTM D2995

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	4. Asphalt Tests	Mechanical Size Analysis of Extracted Aggregate	ASTM D5444
				Marshall Stability and Flow of Bituminous Mixtures	ASTM D6927
				Bulk Specific Gravity and Density	ASTM D2726
				Determination of Density of Bitumen	ASTM D70
				Maximum Specific Gravity and Density	ASTM D2041
				Thickness of Asphalt Specimen	ASTM D3549
				Resistance to Plastic Flow Using Marshall Apparatus (6 in. Specimen)	ASTM D5581
				Bulk Specific Gravity and Density Using Coated Samples	ASTM D1188
				Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	ASTM D2172
				Binder Content by Ignition	BS EN 12697 Part 39
				Particle Size Distribution	BS EN 12697 Part 2

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	4. Asphalt Tests	Determination of Void Characteristics	BS EN 12697 Part 8
				Temperature Measurement	BS EN 12697 Part 13
				Determination of Dimensions of Specimen	BS EN 12697 Part 29
				Determination of Bulk Density	BS EN 12697 Part 6
			5.Masonry Tests	Compressive Strength of Clay Masonry Blocks	BS EN 771 Part 1
				Water Absorption for Clay Masonry Blocks	BS EN 771 Part 1
				Compressive Strength of Concrete Masonry Blocks	BS EN 772 Part 1
				Water Absorption for Masonry Blocks	EN 771 Part 3
				Measurement of Dimensions of Kerbs	BS EN 1340 Annex C
				Water Absorption for Kerbs	BS EN 1340 Annex E
				Transverse Strength of Kerbs	BS EN 1340 Annex F
				Water Absorption for Paving Blocks	BS EN 1338 Annex E

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S.NO	Laboratory	Project	Field	Test	Standard
1	ACES	Roads& infrastructure at Rawdat Abal Hareen MMUP PH2, PKG8	5.Masonry Tests	Transverse Strength of Concrete Paving Flags/Slabs	BS EN 1339 Appendix F
				Water Absorption for Concrete Paving Flags/Slabs	BS EN 1339 Appendix E
				Compressive Strength of Paving Blocks	BS 6717 Annex B
				Water Absorption for Interlocks	ASTM C140

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S.NO	Laboratory	Project	Field	Test	Standard
2	ACES	Lusail Express Way Package 01-P003	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	ASTM D2419
			2. Aggregate Tests	Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2

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S.NO	Laboratory	Project	Field	Test	Standard
2	ACES	Lusail Express Way Package 01-P003	2. Aggregate Tests	Material Finer than 0.075 mm	BS EN 933 Part 1 / ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Flakiness Index	BS EN 933 Part 3 / ASTM D4791
				Elongation Index	BS EN 933 Part 3 / ASTM D4791
			3. Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3

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S.NO	Laboratory	Project	Field	Test	Standard
2	ACES	Lusail Express Way Package 01-P003	4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Soluble Binder Content	BS EN 12697 Part 1
				Marshal Test	BS EN 12697 Part 34
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Bulk Density	BS EN 12697 Part 6
				Determination of Void Characteristics	BS EN 12697 Part 8
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Determination of Dimensions of Specimen	BS EN 12697 Part 29
				Maximum Specific Gravity and Density	ASTM D2041

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S.NO	Laboratory	Project	Field	Test	Standard
3	ACES	Dukhan Highway Central Contract	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	ASTM D2419
			2. Aggregate Tests	Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128

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S.NO	Laboratory	Project	Field	Test	Standard
3	ACES	Dukhan Highway Central Contract	2. Aggregate Tests	Material Finer than 0.075 mm	BS EN 933 Part 1 / ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Flakiness Index	BS EN 933 Part 3 / ASTM D4791
				Elongation Index	BS EN 933 Part 3 / ASTM D4791
				Clay Lumps and Friable Particles	ASTM C142
				Los Angeles Abrasion	ASTM C131 / ASTM C535
				Determination of Ten Percent Value	BS 812 Part 111
				Magnesium Sulphate Soundness	ASTM C88
			3. Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3

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S.NO	Laboratory	Project	Field	Test	Standard
3	ACES	Dukhan Highway Central Contract	4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Soluble Binder Content	BS EN 12697 Part 1
				Marshal Test	BS EN 12697 Part 34
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Bulk Density	BS EN 12697 Part 6
				Determination of Void Characteristics	BS EN 12697 Part 8
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Determination of Dimensions of Specimen	BS EN 12697 Part 29

S.NO	Laboratory	Project	Field	Test	Standard
4	ACES	Al Rayan Road Upgrade –Co-1 West Of New Rayan To East Bani Hajer	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Penetrometer)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	ASTM D2419
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Material Finer than 0.075 mm	BS EN 933 Part 1/ASTM C 117

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S.NO	Laboratory	Project	Field	Test	Standard
4	ACES	Al Rayan Road Upgrade –Co-1 West Of New Rayan To East Bani Hajer	2 .Aggregate Tests	Material Finer than 0.063 mm	BS EN 933 Part 1
				Flakiness Index	BS EN 933 Part 3/ ASTM D4791
				Elongation (Shape) Index	BS EN 933 Part 4/ ASTM D4791
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
			3. Concrete Tests	Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Density of Hardened Concrete	BS EN 12390 Part 7
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Slump Test	BS EN 12350 Part 2
				Test for Temperature of Fresh Concrete	ASTM C1064
				Water Absorption Test	BS 1881 Part 122
				Initial Surface Absorption (ISAT)	BS 1881 Part 208

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S.NO	Laboratory	Project	Field	Test	Standard
4	ACES	Al Rayan Road Upgrade –Co-1 West Of New Rayan To East Bani Hajer	4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Soluble Binder Content	BS EN 12697 Part 1
				Marshal Test	BS EN 12697 Part 34
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Maximum Specific Gravity and Density	ASTM D2041
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Void Characteristics	BS EN 12697 Part 8
				Temperature Measurement	BS EN 12697 Part 13
				Determination of Dimensions of Specimen	BS EN 12697 Part 29
				Determination of Bulk Density	BS EN 12697 Part 6

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S.NO	Laboratory	Project	Field	Test	Standard
5	ACES	Roads &Infrastructure In Doha Industrial Area-Package - 01	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419
				Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution	BS EN 933 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
5	ACES	Roads &Infrastructure In Doha Industrial Area-Package - 01	2.Aggregate Tests	Material Finer than 0.075 mm	ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
			3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Sampling of Fresh Concrete	ASTM C172
				Test for Temperature of Fresh Concrete	ASTM C1064
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Slump Test	BS EN 12350 Part 2
			4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Soluble Binder Content	BS EN 12697 Part 1
				Marshal Test	BS EN 12697 Part 34

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S.NO	Laboratory	Project	Field	Test	Standard
5	ACES	Roads &Infrastructure In Doha Industrial Area-Package - 01	4.Asphalt Tests	Determination of Thickness of Specimen	BS EN 12697 Part 36
				Maximum Specific Gravity and Density	ASTM D2041
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Dimensions of Specimen	BS EN 12697 Part 29
				Determination of Bulk Density	BS EN 12697 Part 6
				Determination of Void Characteristics	BS EN 12697 Part 8

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S.NO	Laboratory	Project	Field	Test	Standard
6	ACES	Roads& infrastructure in Government Residential Division North of Al Wukair (DS131) (1A14/15 C057ST)	1. Soil Tests	Particle Size Distribution	ASTM D6913
				Materials Finer than No. 200 (0.075mm) Sieve	ASTM D1140
				Liquid Limit, Plastic Limit and Plasticity Index of Soil	ASTM D4318
				Lab Compaction Test using Modified Effort	ASTM D1557
				Field Density (Sand Cone)	ASTM D1556
				Determination of California Bearing Ratio (CBR)	ASTM D1883
				Sand Equivalent Value	ASTM D2419
				Field Density (Nuclear)	ASTM D6938
				Determination of Moisture Content	ASTM D2216
				Correction of Density and Water Content for Soils	ASTM D4718
			2.Concrete Tests	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2

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S.NO	Laboratory	Project	Field	Test	Standard
6	ACES	Roads& infrastructure in Government Residential Division North of Al Wukair (DS131) (1A14/15 C057ST)	3. Asphalt Tests	Bulk Specific Gravity and Density	ASTM D2726
				Maximum Specific Gravity and Density	ASTM D2041
				Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	ASTM D2172
				Mechanical Size Analysis of Extracted Aggregate	ASTM D5444
				Marshall Stability and Flow of Bituminous Mixtures	ASTM D6927
				Application Rate of Bituminous Distributors	ASTM D2995
				Sampling of Bituminous Mixtures	ASTM D979
				Sampling Compacted Bituminous Mixtures for Laboratory Testing	ASTM D5361
				Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Preparation of Specimens Using Marshall Apparatus	ASTM D6926
				Bulk Specific Gravity and Density Using Coated Samples	ASTM D1188
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Temperature Measurement	BS EN 12697 Part 13

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S.NO	Laboratory	Project	Field	Test	Standard
6	ACES	Roads& infrastructure in Government Residential Division North of Al Wukair (DS131) (1A14/15 C057ST)	3.Asphalt Tests	Marshal Test	BS EN 12697 Part 34
				Determination of Bulk Density	BS EN 12697 Part 6
				Determination of Void Characteristics	BS EN 12697 Part 8
				Soluble Binder Content	BS EN 12697 Part 1
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Maximum Density	BS EN 12697 Part 5
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Thickness of Asphalt Specimen	ASTM D3549
				Resistance to Plastic Flow Using Marshall Apparatus (6 in. Specimen)	ASTM D5581
			4.Aggregate Tests	Sampling of Aggregates	ASTM D75
				Reducing Samples to Testing Size	ASTM C702
				Material Finer than 0.075 mm	ASTM C117
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Particle Size Distribution	ASTM C136
				Flat and Elongated Particles	ASTM D4791
				Particle Size Distribution	BS EN 933 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
7	Tech-Lab	Construction and Upgrade of Rayyan Road Project (Code:007,C2)	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Sand Replacement Method - Small Pouring Cylinder)	BS 1377 Part 9: Sec. 2.1
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
				Sand Equivalent Value	ASTM D2419
				Determination of Plastic Limit, Liquid Limit and Plasticity Index	ASTM D4318

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S.NO	Laboratory	Project	Field	Test	Standard
7	Tech-Lab	Construction and Upgrade of Rayyan Road Project (Code:007,C2)	2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2
				Particle Size Distribution	BS EN 933 Part 1
				Particle Density and Water Absorption (All larger than 10mm aggregate)	BS 812 Part 2–5.3
				Determination of Particle Density and Water Absorption	BS EN 1097 Part 6
				Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4
				Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5
				Determination of Aggregate Crushing Value	BS 812 Part 110
				Determination of Ten Percent Value	BS 812 Part 111
				Clay Lumps and Friable Particles	ASTM C142
				Material Finer than 0.075 mm	ASTM C117
				Material Finer than 0.075 mm	ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Determination of Shell Content	BS EN 933 Part 7
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6

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S.NO	Laboratory	Project	Field	Test	Standard
7	Tech-Lab	Construction and Upgrade of Rayyan Road Project (Code:007,C2	2.Aggregate Tests	Percentage of Fractured Particles	ASTM D5821
				Magnesium Sulphate Soundness	ASTM C88
			3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Water Penetration Test	BS EN 12390 Part 8
				Resistance to Chloride Ion Penetration	ASTM C1202
				Water Absorption Test	BS 1881 Part 122

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S.NO	Laboratory	Project	Field	Test	Standard
8	Gulf Labs	Al Muntazah Street Extension (Package 13)	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
			2. Aggregate Tests	Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2

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S.NO	Laboratory	Project	Field	Test	Standard
8	Gulf Labs	Al Muntazah Street Extension (Package 13)	2. Aggregate Tests	Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5
				Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Los Angeles Abrasion	ASTM C131/ASTM C535
				Flakiness Index	BS 812 Part 105.1
				Elongation Index	BS 812 Part 105.2
			3. Concrete Tests	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2

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S.NO	Laboratory	Project	Field	Test	Standard
9	Gulf Labs	West Corridor P-010 (Package 1)	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
			2. Aggregate Tests	Material Finer than 0.075 mm	BS EN 933 Part 1 / ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Clay Lumps and Friable Particles	ASTM C142
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2

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S.NO	Laboratory	Project	Field	Test	Standard
9	Gulf Labs	West Corridor P-010 (Package 1)	2. Aggregate Tests	Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Los Angeles Abrasion	ASTM C131/ASTM C535
				Flakiness Index	BS 812 Part 105.1
				Elongation Index	BS 812 Part 105.2
			3. Concrete Tests	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Density of Hardened Concrete	BS EN 12390 Part 7
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Test for Temperature of Fresh Concrete	BS EN 12350 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
9	Gulf Labs	West Corridor P-010 (Package 1)	3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Air Content Test for Fresh Concrete by Pressure Method	BS EN 12350 Part 7
				Flow Table Test	BS EN 12350 Part 5
			4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Soluble Binder Content	BS EN 12697 Part 1
				Marshal Test	BS EN 12697 Part 34
				Determination of Thickness of Specimen	BS EN 12697 Part 36

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S.NO	Laboratory	Project	Field	Test	Standard
9	Gulf Labs	West Corridor P-010 (Package 1)	4. Asphalt Tests	Temperature Measurement	BS EN 12697 Part 13
				Determination of Maximum Density	BS EN 12697 Part 5
				Determination of Bulk Density	BS EN 12697 Part 6
				Determination of Dimensions of Specimen	BS EN 12697 Part 29
				Determination of Void Characteristics	BS EN 12697 Part 8

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S.NO	Laboratory	Project	Field	Test	Standard
10	Gulf Labs	Independent site laboratory for lane solid tadmur JV Wakrah west MMUP Ph2	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
			2. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
			3. Asphalt Tests	Quantitative Extraction of Bitumen	ASTM D2172
				Determination of Bulk Density	BS EN 12697 Part 6

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S.NO	Laboratory	Project	Field	Test	Standard
11	Gulf Labs	Independent site laboratory for New Doha port to orbital highway (P-023 Contract 1)	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
			2. Concrete Tests	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Density of Hardened Concrete	BS EN 12390 Part 7
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Slump Test	BS EN 12350 Part 2
			3.Asphalt Tests	Quantitative Extraction of Bitumen	ASTM D2172
				Soluble Binder Content	BS EN 12697 Part 1
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Bulk Density	BS EN 12697 Part 6

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S.NO	Laboratory	Project	Field	Test	Standard
11	Gulf Labs	Independent site laboratory for New Doha port to orbital highway (P-023 Contract 1)	3. Asphalt Tests	Determination of Thickness of Specimen	BS EN 12697 Part 36
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Marshal Test	BS EN 12697 Part 34
				Asphalt core drilling	BS EN 12697
			4. Aggregate Tests	Particle Size Distribution	BS EN 933 Part 1
				Material Finer than 0.075 mm	ASTM C117
				Clay Lumps and Friable Particles	ASTM C142
				Flakiness Index	BS EN 933 Part 3/ ASTM D4791/ BS 812 Part 105.1
				Elongation Index	BS 812 Part 105.2/ ASTM D4791/ BS EN 933 Part 4
				Determination of Shell Content	BS EN 933 Part 7

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S.NO	Laboratory	Project	Field	Test	Standard
12	Qatar Industrial Labs	Development of Al Ruwais Port – Phase 2	1. Concrete Tests	Making and Curing of Concrete Tests Specimen	ASTM C31
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Test for Temperature of Fresh Concrete	ASTM C1064
				Sampling of Fresh Concrete	BS EN 12350 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
13	Qatar Industrial Labs	Dukhan Road (East Contract)	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419 BS EN 933-8
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2

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S.NO	Laboratory	Project	Field	Test	Standard
13	Qatar Industrial Labs	Dukhan Road (East Contract)	2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Particle Size Distribution	ASTM C136
				Flakiness Index	BS EN 933-3
				Elongation Index	BS EN 933-3
				Material Finer than 0.075 mm	BS EN 933 Part 1 / ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Clay Lumps and Friable Particles	ASTM C142
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2

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13	Qatar Industrial Labs	Dukhan Road (East Contract)	2. Aggregate Tests	Determination of Aggregate Crushing Value	BS 812 Part 110
				Determination of Shell Content	BS EN 933 Part 7
				Particle Density and Water Absorption (All larger than 10mm aggregate)	BS 812 Part 2–5.3
				Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4
				Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5
				Particle Density and Water Absorption	BS EN 1097 Part 6
			3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2/ASTM C31
				Slump Test	BS EN 12350 Part 2
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3/ASTM C143
				Test for Temperature of Fresh Concrete	ASTM C1064

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13	Qatar Industrial Labs	Dukhan Road (East Contract)	3.Concrete Tests	Obtaining and Testing of Drilled Cores	BS EN 12504 Part 1
				Density of Hardened Concrete	BS EN 12390 Part 7
				Obtaining and Testing of Drilled Cores and Sawed Beams	ASTM C42
				Water Absorption Test	BS 1881 Part 122
				Sampling of Fresh Concrete	BS EN 12350 Part 1
			4. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Preparation of Samples for Testing	BS EN 12697 Part 28
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Marshal Test	BS EN 12697 Part 34
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Determination of Maximum Density	BS EN 12697 Part 5

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S.NO	Laboratory	Project	Field	Test	Standard
13	Qatar Industrial Labs	Dukhan Road (East Contract)	4. Asphalt Tests	Determination of Bulk Specific Gravity and Density	ASTM D2726
			5. Cement / Blocks	Method of Sampling of Cement	ASTM C183
				Compressive Strength of Clay Masonry Blocks	BS EN 771 Part 1 / BS 6073
				Water Absorption for Clay Masonry Blocks	BS EN 771 Part 1
				Water Absorption for Paving Blocks	BS EN 1338 Annex E
				Water Absorption for Interlocks	ASTM C140

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S.NO	Laboratory	Project	Field	Test	Standard
14	Qatar Industrial Labs	Roads and Infrastructure in Rawdat Abal Heeran MMUP, Ph2 Pkg 8	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2

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S.NO	Laboratory	Project	Field	Test	Standard
14	Qatar Industrial Labs	Roads and Infrastructure in Rawdat Abal Heeran MMUP, Ph2 Pkg 8	2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Particle Size Distribution	ASTM C136
				Flakiness Index	BS EN 933-3
				Elongation Index	BS EN 933-3
				Material Finer than 0.075 mm	BS EN 933 Part 1 / ASTM C117
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Clay Lumps and Friable Particles	ASTM C142
				Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2

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S.NO	Laboratory	Project	Field	Test	Standard
14	Qatar Industrial Labs	Roads and Infrastructure in Rawdat Abal Heeran MMUP, Ph2 Pkg 8	2.Aggregate Tests	Determination of Ten Percent Value	BS 812 Part 111
				Determination of Aggregate Crushing Value	BS 812 Part 110
				Determination of Shell Content	BS EN 933 Part 7
				Particle Density and Water Absorption (All larger than 10mm aggregate)	BS 812 Part 2–5.3
				Particle Density and Water Absorption (5-40mm aggregate)	BS 812 Part 2–5.4
				Particle Density and Water Absorption (10mm aggregate and smaller)	BS 812 Part 2–5.5
				Particle Density and Water Absorption	BS EN 1097 Part 6
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Los Angeles Abrasion	ASTM C131 / ASTM C535
				Magnesium Sulphate Soundness	ASTM C88
			3.Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
14	Qatar Industrial Labs	Roads and Infrastructure in Rawdat Abal Heeran MMUP, Ph2 Pkg 8	3.Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3/ASTM C143
				Density of Hardened Concrete	BS EN 12390 Part 7
				Water Absorption Test	BS 1881 Part 122
			4.Cement / Blocks	Compressive Strength of Paving Blocks	BS 6717
				Water Absorption for Paving Blocks	BS EN 1338 Annex E

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S.NO	Laboratory	Project	Field	Test	Standard
15	Qatar Industrial Labs	Dukhan Highway to Al Khor link road – P023 C4 Truck Route contract 4	1. Soil Tests	Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of Liquid Limit, Plastic Limit and Plasticity Index	ASTM D4318
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Material Finer than 0.075 mm	BS EN 933 Part 1
				Clay Lumps and Friable Particles	ASTM C142
				Flakiness Index	BS EN 933 Part 3 / ASTM D4791
				Elongation Index	BS EN 933 Part 3 / ASTM D4791
				Determination of Shell Content	BS EN 933 Part 7

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S.NO	Laboratory	Project	Field	Test	Standard
15	Qatar Industrial Labs	Dukhan Highway to Al Khor link road – P023 C4 Truck Route contract 4	3. Concrete Tests	Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Slump Test	BS EN 12350 Part 2
				Test for Temperature of Fresh Concrete	ASTM C1064
				Density of fresh Concrete	BS EN 12350 Part 6

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S.NO	Laboratory	Project	Field	Test	Standard
16	Qatar Industrial Labs	Al Wakarah by pass road (P015)	1. Soil Tests	Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419
				Method of Test for Cement Stabilized Materials	BS 1924 Part 2
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Material Finer than 0.075 mm	BS EN 933 Part 1 /ASTM C 117
				Clay Lumps and Friable Particles	ASTM C142
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128

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S.NO	Laboratory	Project	Field	Test	Standard
16	Qatar Industrial Labs	Al Wakarah by pass road (P015)	2.Aggregate Tests	Particle Size Distribution (Wet)	BS 812 Part 103.1-9.2
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6
				Particle Density and Water Absorption	BS EN 1097 Part 6
				Flakiness Index	BS 812 Part 105.1
				Elongation Index	BS 812 Part 105.2
			3. Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1
				Slump Test	BS EN 12350 Part 2
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Test for Temperature of Fresh Concrete	ASTM C1064
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Density of Hardened Concrete	BS EN 12390 Part 7

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S.NO	Laboratory	Project	Field	Test	Standard
16	Qatar Industrial Labs	Al Wakarah by pass road (P015)	4.Masonry block tests	Water absorption for paving blocks	BS EN 1338 – Annex E
			5. Asphalt Tests	Sampling of Asphalt	BS EN 12697 Part 27
				Specimen Preparation by Impact Compactor	BS EN 12697 Part 30
				Marshal Test	BS EN 12697 Part 34
				Soluble Binder Content	BS EN 12697 Part 1/ASTM D2172
				Determination of Thickness of Specimen	BS EN 12697 Part 36
				Determination of Maximum Density	BS EN 12697 Part 5/ ASTM D 2041
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Bulk Density	BS EN 12697 Part 6
				Application Rate of Bituminous Distributors	ASTM D2995
				Determination of Bulk Specific Gravity and Density	ASTM D2726

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S.NO	Laboratory	Project	Field	Test	Standard
17	Doha technical laboratories	P003-LUSAIL Expressway	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				In-Situ Density Test (Nuclear Gauge Method)	BS 1377 Part 9: Sec. 2.5
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Sampling of Aggregates	BS EN 932 Part 1

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S.NO	Laboratory	Project	Field	Test	Standard
17	Doha technical laboratories	P003-LUSAIL Expressway	3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Slump Test	ASTM C143
				Air Content Test for Fresh Concrete by Pressure Method	ASTM C231
				Density Determination for Fresh Concrete	ASTM C138
				Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3

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S.NO	Laboratory	Project	Field	Test	Standard
18	Doha technical laboratories	New Orbital Highway – Contract -4	1. Aggregate Tests	Sampling of Aggregates	ASTM D75
				Reducing Samples to Testing Size	ASTM C702
				Particle Size Distribution	ASTM C136
				Material Finer than 0.075 mm	ASTM C117
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Flat and Elongated Particles	ASTM D4791
			2. Soil Tests	Sand Equivalent Value	ASTM D2419
			3. Asphalt Tests	Sampling of Binders	ASTM D140
				Penetration of Bituminous Materials	ASTM D5
				Determination of Softening Point (Ring and Ball Method)	ASTM D36
				Sampling of Bituminous Mixtures	ASTM D979

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S.NO	Laboratory	Project	Field	Test	Standard
18	Doha technical laboratories	New Orbital Highway – Contract -4	3. Asphalt Tests	Sampling Compacted Bituminous Mixtures for Laboratory Testing	ASTM D5361
				Preparation of Specimens Using Marshall Apparatus	ASTM D6926
				Bulk Specific Gravity and Density	ASTM D2726
				Maximum Specific Gravity and Density	ASTM D2041
				Marshall Stability and Flow of Bituminous Mixtures	ASTM D6927
				Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	ASTM D2172
				Mechanical Size Analysis of Extracted Aggregate	ASTM D5444
				Thickness of Asphalt Specimen	ASTM D3549

S.NO	Laboratory	Project	Field	Test	Standard
19	Qatar Engineering Labs	Construction Of East Corridor P011-Package 02	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Liquid Limit (Cone penetrometer Method)	BS 1377 Part 2: Sec. 4.3
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Sand Equivalent Value	ASTM D2419
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Particle Size Distribution	BS EN 933 Part 1
				Material Finer than 0.075 mm	BS EN 933 Part 1
				Flat and Elongated Particles	ASTM D4791

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S.NO	Laboratory	Project	Field	Test	Standard
19	Qatar Engineering Labs	Construction Of East Corridor P011-Package 02	3. Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
			4.Asphalt Tests	Sampling of Bituminous Mixtures	ASTM D979
				Maximum Specific Gravity and Density	ASTM D2041
				Quantitative Extraction of Bitumen from Bituminous Paving Mixtures	ASTM D2172
				Particle Size Distribution	BS EN 12697 Part 2
				Determination of Bulk Density	BS EN 12697 Part 6
				Bulk Specific Gravity and Density	ASTM D2726
				Thickness of Asphalt Specimen	ASTM D3549
				Marshal Test	BS EN 12697 Part 34
				Preparation of Specimens Using Marshall Apparatus	ASTM D6926
				Bulk Specific Gravity and Density	ASTM D2726

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S.NO	Laboratory	Project	Field	Test	Standard
20	Exova	New Orbital Highway -2 ,Junction 3A	1. Soil Tests	Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				Determination of Liquid Limit (Cone Penetrometer)	BS 1377 Part 2: Sec. 4.3
				Determination of Liquid Limit (Casagrande method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	ASTM D2419
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Field Density (Nuclear)	ASTM D6938/ BS 1377 Part 9: Sec. 2.5
			2. Aggregate Tests	Sampling of Aggregates (From Heaps)	BS 812 Part 102
				Determination of Moisture Content (Oven Drying)	BS 812 Part 109: Sec.6

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S.NO	Laboratory	Project	Field	Test	Standard
20	Exova	New Orbital Highway -2 ,Junction 3A	2.Aggregate Tests	Particle Size Distribution	BS EN 933 Part 1
				Particle Size Distribution	ASTM C136
				Material Finer than 0.075 mm	ASTM C117
				Material Finer than 0.075 mm	BS EN 933 Part 1
				Material Finer than 0.063 mm	BS EN 933 Part 1
				Determination of Specific Gravity and Water Absorption of Fine Aggregate	ASTM C128
				Determination of Specific Gravity and Water Absorption of Coarse Aggregate	ASTM C127
				Determination of Particle Density and Water Absorption	BS EN 1097 Part 6
				Clay Lumps and Friable Particles	ASTM C142
				Los Angeles Abrasion	ASTM C131
				Determination of Shell Content	BS EN 933 Part 7
				Flakiness Index	BS EN 933 Part 3
				Elongation Index	BS EN 933 Part 4

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S.NO	Laboratory	Project	Field	Test	Standard
20	Exova	New Orbital Highway -2 ,Junction 3A	2.Aggregate Tests	Determination of Aggregate Crushing Value	BS 812 Part 110
				Determination of Ten Percent Value	BS 812 Part 111
				Determination of Aggregate Impact Value	BS 812 Part 112
			3.Concrete Tests	Shape and Dimensions of Specimen	BS EN 12390 Part 1
				Density of Hardened Concrete	BS EN 12390 Part 7
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3
				Compressive Strength of Concrete Cylindrical Specimens	ASTM C39
				Sampling of Fresh Concrete	BS EN 12350 Part 1/ ASTM C172
				Slump Test	BS EN 12350 Part 2
				Slump Test	ASTM C143
				Test for Temperature of Fresh Concrete	ASTM C1064
				Water Absorption Test	BS 1881 Part 122
				Water Absorption Test	BS EN 12390 Part 8

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S.NO	Laboratory	Project	Field	Test	Standard
20	Exova	New Orbital Highway -2 ,Junction 3A	3.Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Making and Curing of Concrete Tests Specimen	ASTM C31
				Capping of Cylindrical Concrete Specimen	ASTM C617
				Resistance to Chloride Ion Penetration	ASTM C1202
				Air Content Test for Fresh Concrete by Pressure Method	ASTM C231

S.NO	Laboratory	Project	Field	Test	Standard
21	ACTS	Construction Of East Corridor P011-Package 02	1. Soil Tests	Particle Size Distribution (Wet Sieving Method)	BS 1377 Part 2: Sec. 9.2
				Particle Size Distribution (Dry Sieving Method)	BS 1377 Part 2: Sec. 9.3
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of Moisture Content (Oven Drying)	BS 1377 Part 2: Sec. 3.2
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
			2 .Steel Tests	Tensile Strength Test	ASTM A370
				Bend Test	BS 4449 Sec. 7.2.5
				Rebend Test	BS 4449 Sec. 7.2.5

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S.NO	Laboratory	Project	Field	Test	Standard
21	ACTS	Construction Of East Corridor P011-Package 02	3. Concrete Tests	Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2
				Sampling of Fresh Concrete	BS EN 12350 Part 1
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3

S.NO	Laboratory	Project	Field	Test	Standard
22	ACTS	Roads &infrastructures in Al Wakra west (DS016-P03)	1. Soil Tests	Sampling of Aggregates	ASTM D75
				Reducing Samples to Testing Size	ASTM C702
				Particle Size Distribution	BS EN 933 Part 1
				Determination of Liquid Limit (Casagrande Method)	BS 1377 Part 2: Sec. 4.5
				Determination of Plastic Limit and Plasticity Index	BS 1377 Part 2: Sec. 5
				Determination of California Bearing Ratio (CBR)	BS 1377 Part4: Sec. 7
				Dry Density/Moisture Content Relationship	BS 1377 Part 4 :Sec.3.5/3.6
				In-Situ Density Test (Sand Replacement Method – Large Pouring Cylinder)	BS 1377 Part 9: Sec. 2.2
				Sand Equivalent Value	BS EN 933 Part 8

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S.NO	Laboratory	Project	Field	Test	Standard
22	ACTS	Roads &infrastructures in Al Wakra west (DS016-P03)	3. Concrete Tests	Sampling of Fresh Concrete	BS EN 12350 Part 1
				Making and Curing of Specimen for Strength Test	BS EN 12390 Part 2
				Slump Test	BS EN 12350 Part 2/ASTM C143
				Test for Temperature of Fresh Concrete	ASTM C1064
				Compressive Strength of Concrete Specimens	BS EN 12390 Part 3

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Dubai Central Laboratory (DCL) Approved List

Materials Tests

Aggregate Tests

Test	Test Method
CHLORIDE CONTENT OF SAND & AGGREGATE (ACID SOLUBLE)	BS 812 : 1988 P117 " Appendix C "
SULPHATE CONTENT OF SAND & AGGREGATE (ACID SOLUBLE)	BS EN 1744-1:1998
SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE (WET)	BSEN 933-1 : 1997 AMD 15907 MARCH 2006
SPECIFIC GRAVITY & WATER ABSORPTION OF FINE AGGREGATE	ASTM C128 : 07a
FULLY CRUSHED FACES OF AGGREGATE	DMS - 7 : 2001(R-07)
PARTIALLY CRUSHED FACES OF AGGREGATE	DMS - 8 : 2001(R07)
TEN PERCENT FINES (DRY)	BS 812 : 1990 P111 T7.1 (AD-04:2002)
TEN PERCENT FINES (SOAKED)	BS 812 :P111 1990 (AD-04 : 2002)
ELONGATION INDEX OF AGGREGATE	BS 812 : 1990 P105 S105.2
AGGREGATE CRUSHING VALUE	BS 812 : 1990 P110 (AD-03:2002)
SOUNDNESS	ASTM C88 : 05
LOS ANGELES ABRASION (SMALL SIZE COARSE AGGREGATE)	ASTM C131 : 2006
LOS ANGELES ABRASION (LARGE SIZE COARSE AGGREGATE)	ASTM C535 : 2009
PARTICLE DENSITY / WATER ABSORPTION (COARSE AGGREGATE)	BS 812 : 1995 P2 T5.3, 5.4 AMD10379/r - 1999
LIQUID LIMIT	BS 1377 : Part 2:1990 : T4.5 AMD 9027 : 1996

Test	Test Method
PLASTIC LIMIT	BS 1377 : Part 2:1990 :T5.3 AMD 9027 : 1996
PLASTICITY INDEX	BS 1377: Part2: 1990: T5.4 AMD 9027 : 1996
SAMPLING OF AGGREGATE	ASTM D75 - 09
SAND EQUIVALENT OF SOILS & FINE AGGREGATE	ASTM D2419 : 2009
MATERIAL FINER THAN 75 MICRONS SIEVE BY WASHING	ASTM C117 : 2004
SIEVE ANALYSIS (DRY)	ASTM C136 : 2006
CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE	ASTM C142 : 1997 R 2004
FLAKINESS INDEX OF AGGREGATE	BS 812 : 1989 P105 S105.1
SHELL CONTENT OF COARSE AGGREGATE	BSEN 933-7 : 1998
SAMPLING OF AGGREGATE	ASTM D75 - 09
ORGANIC MATTER CONTENT	BS 1377 : P3 (1990)AMD 9028:(1996)
ORGANIC IMPURITIES IN FINE AGGREGATE	ASTM C40 (2004)
SIEVE ANALYSIS OF MINERAL FILLER	ASTM D546 : 05
PARTICLE DENSITY (FILLER)	BS 812 P2:1995 T5.7 AMD 10397:1999
COATING AND STRIPPING TEST	ASTM D1664 : 1980 (R1985)
SPECIFIC GRAVITY & WATER ABSORPTION OF COARSE AGGREGATE	ASTM C 127 : 07
CLAY, SILT AND DUST IN FINE & COARSE AGGREGATE	BSEN 933-1 : 1997 AMD 15907 MARCH 2006
PARTICLE DENSITY / WATER ABSORPTION (FINE AGGREGATE)	BS 812 : 1995 P2 T5.5
SAMPLING OF AGGREGATE	BS 812 : 1989 P102

Test	Test Method
SIEVE ANALYSIS (DRY)	BSEN 933-1 : CL.7.2 : 1997 AMD 15907 MARCH 2006
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
SIEVE ANALYSIS OF FINE AND COARSE AGGREGATE.(WET)	ASTM C 136 : CL.7.7.1 : 2006
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
BULK DENSITY & VOIDS IN AGGREGATE - RODDING	ASTM C 29 / C 29 M : 2009 CLAUSE 10
BULK DENSITY & VOIDS IN AGGREGATE - JIGGING	ASTM C 29/ C 29 M : 2009, CLAUSE 11
BULK DENSITY & VOIDS IN AGGREGATE - LOOSE	ASTM C 29/ C 29M :2009 CLAUSE 12
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
pH OF SOIL AND SOIL- AGG./LIGHTWEIGHT EXPANDABLE CLAY AGG.	AASHTO T 289-91

Bituminous Tests

Test	Test Method
PENETRATION OF BITUMINOUS MATERIALS	ASTM D5 - 06
SAYBOLT FUROL VISCOSITY OF PETROLEUM PRODUCTS	ASTM D88 : 2007
FLASH POINT	ASTM D92 - 05a(Reapproved 2010) cl. 11.2
KINEMATIC VISCOSITY OF ASPHALT	ASTM D2170 - 07
SPECIFIC GRAVITY & DENSITY OF SEMI - SOLID BITUMINOUS MATERIAL	ASTM D70 : 2009
SOFTENING POINT OF BITUMEN	ASTM D36 / D36 M - 09
SAYBOLT FUROL VISCOSITY OF EMULSIFIED ASPHALT	ASTM D7496-09 : cl. 7.1 PROC. B
VISCOSITY OF ASPHALT BY BROOKFIELD THERMOSEL APPARATUS	ASTM D 4402 - 06
RHEOLOGICAL PROPERTIES OF ASPHALT BY DYNAMIC SHEAR	AASHTO TP 5
WATER VAPOR TRANSMISSION OF INSULATION MATERIALS	ASTM E96-00
TENSILE PROPERTIES OF BITUMEN SHEET FOR ROOF WATER PROOFING	BS EN 12311 P1 : 2000
ACCELERATED AGING OF ASPHALT BINDER USING PAV	AASHTO PP1-93
EFFECT OF HEAT AND AIR ON A MOVING FILM OF ASPHALT (RTFO)	ASTM D 2872:04
TENSILE PROPERTIES OF THIN PLASTIC SHEETING	ASTM D882: 2001
TENSILE - TEAR STRENGTH OF MODIFIED BITUMINOUS SHEET MATERIAL	ASTM D5147:2002 CLAUSE 7
TENSILE PROPERTIES OF FLEXIBLE SHEETS FOR BTTU. WATER PROFING MEMBRANE	ASTM D4073 :1994 R98
LOW TEMPERATURE FLEXIBILITY OF MODIFIED BITUMINOUS SHEET MATERIAL	ASTM D5147:02a CLAUSE 11
COMPOUND STABILITY OF MODIFIED BITUMINOUS SHEET MATERIAL	ASTM D5147:02a CLAUSE 15

Test	Test Method
UNIFORMITY TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03, Section 5
RESIDUE BY EVAP,VOLATILE & VOLATILIZATION TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03. Section 8, 9 & 23
DRYING TIME TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03. Section 13
BRUSH APPLICATION BEHAVIOR TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03, Section 17
WET FLOW TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03. Section 19
WET FILM CONTINUITY TEST FOR EMULSIFIED BITUMEN	ASTM D 2939 - 03. Section 22
RESISTANCE TO FREEZING TEST ON EMULSIFIED BITUMEN	ASTM D 2939 - 03, SECTION 6
HEAT RESISTANCE TEST FOR EMULSIFIED BITUMENS	ASTM D 2939 - 03, SECTION 14
DIRECT FLAME TEST EMULSIFIED BITUMENS USED AS PROTECTIVE COATING	ASTM D 2939 - 03 SECTION 20
RESISTANCE TO VOLATILIZATION TEST ON EMULSIFIED BITUMEN	ASTM D 2939 -03 SECTION 23
VOLATILES BY EVAPORATION TEST ON EMULSIFIED BITUMEN	ASTM D 2939 - 03, SECTION 9
RESIDUE BY EVAPORATION TEST ON EMULSIFIED BITUMEN	ASTM D 2939 - 03, SECTION 8
RESISTANCE TO WATER TEST ON EMULSIFIED BITUMENS USED AS PROTECTIVE COATING	ASTM D 2939 - 03 SECTION 15
ASH CONTENT TEST EMULSIFIED BITUMENS USED AS PROTECTIVE COATING	ASTM 2939 - 03, SECTION 10
SOLUBILITY OF ASPHALT MATERIALS IN TRICHLOROETHYLENE	ASTM D 2042-09
DUCTILITY OF BITUMINOUS MATERIALS	ASTM D113-07
RESIDUE BY EVAPORATION OF EMULSIFIED ASPHALT (TACK COAT)	ASTM D 6934 - 08
SOLUBILITY OF BITUMINOUS MAT'L IN TRICHLOROETHYLENE(TACK COAT)	ASTM D 2042 - 09
FLASH POINT OF CUTBACK ASPHALT WITH TAG OPEN CUP APPARATUS	ASTM D3143-08

Test	Test Method
WATER IN PETROLEUM PTODUCTS AND BITUMINOUS MAT. BY DISTILLATION	ASTM D95-05 (R10)
DUCTILITY CUTBACK ASPHALTIC PRODUCTS RESIDUE (PRIME COAT)	ASTM D 113 -07
SOLUBILITY OF CUTBACK ASPHALTIC PRODUCTS RESIDUE(PRIME COAT)IN TRICHLOROETHYLENE	ASTM D 2042-09
PENETRATION TEST ON RESIDUE OF CUTBACK MATERIAL (PRIME COAT)	ASTM D5 -06
SOLUBILITY OF CUTBACK ASPHALTIC PROD. RESIDUE(TACK COAT)IN TRICHLOROETHYLENE	ASTM D 2042-09
DUCTILITY OF CUTBACK ASPHALTIC PRODUCTS RESIDUE (TACK COAT)	ASTM D 113-07
PENETRATION TEST ON RESIDUE OF CUTBACK MATERIAL (TACK COAT)	ASTM D 5 -06
DISTILLATION OF CUTBACK ASPHALTIC (BITUMINOUS) PRODUCTS	ASTM D 402-08
DISTILATION OF EMULSIFIED ASPHALT	ASTM D 6997 - 04
FLEX.OF HOT APPLIED SEALANTS&FILLERS FOR JOINTS&CRACKS	ASTM D 5329-09 CL.18
FLOW OF HOT APPLIED SEALANTS & FILLERS FOR JOINT & CRACKS	ASTM D 5329-09 CL.8
ASPH.COMP. OF HOT APPLIED SEALANTS,FILLERS FOR JOINTS&CRACKS	ASTM D 5329 - 09 CL.14
DUCTILITY OF SEALANTS,FILLERS FOR JOINTS & CRACKS	ASTM D 113 - 07
SOFTENING POINT OF SEALANTS,FILLERS FOR JOINTS & CRACKS	ASTM D36/D36M - 09
VISC. OF SEALANTS,FILLERS FOR JOINTS&CRACKS AT ELEVATED TEMP.	ASTM D 4402 - 06

Concrete Tests

Test	Test Method
SAMPLING HARDENED CONCRETE (CORING ON FLOORS)	BS 1881 : 1983 P120 AMD6109 - 1989
NORMAL CURING OF TEST SPECIMEN	BS 1881 : 1983 P111 AMD9387 - 1997
COMPRESSIVE STRENGTH OF CONCRETE CUBES	BS 1881 : 1983 P116 AMD6720 - 1991
WATER ABSORPTION OF HARDENED CONCRETE	BS 1881 : 1983 P122 AMD6108 - 1989
SULPHATE CONTENT INHARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)
CHLORIDE CONTENT IN HARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)
TYPE OF CEMENT	BS 1881 P124 : (1988) AD- 06 (2002)
ELECTRICAL INDICATION OF CONCRETE'S ABILITY TO RESIST CHLORIDE IO	ASTM C1202 : 2010
INITIAL SURFACE ABSORPTION OF CONCRETE	BS 1881 : P208 : 1996
DEPTH OF PENTRATION OF WATER FOR CONCRETE	BS EN 12390 - 8 :2009
TESTING HARDENED CONCRETE: PART 3 :C/S OF TEST SPECIMEN	BS EN 12390-3:2009
SAMPLING OF FRESH CONCRETE ON SITE	BS 1881 : 1983 P101 AMD6728 - 1991
SLUMP TEST OF FRESH CONCRETE	BSEN 12350 - 2 : 2009
MAKING TEST CUBES FROM FRESH CONCRETE	BS 1881 : 1983 P108 AMD6105 - 1989
MAKING TEST CYLINDERS FROM FRESH CONCRETE	BS 1881 : 1983 P110 AMD6103 - 1989

Test	Test Method
MIXING & SAMPLING FRESH CONCRETE IN LAB	BS 1881 : 1986 P125 AMD6107
BLEEDING OF CONCRETE	ASTM C 232 / C 232 M -09
AIR CONTENT OF FRESH CONCRETE - PRESSURE METHOD	BS EN 12350 -7 :2009
MAKING AND CURING SPECIMENS FOR STRENGTH TESTS	BS EN 12390 - 2 : 2002
SAMPLING FRESH CONCRETE	BS EN 12350 - 1 : 2002
SAMPLING HARDENED CONCRETE (CORING ON FLOORS)	BS 1881 : 1983 P120 AMD6109 - 1989
SAMPLING HARDENED CONCRETE (CORING ON WALLS, COLUMNS)	BS 1881 : 1983 P120 AMD6109 - 1989
NORMAL CURING OF TEST SPECIMEN	BS 1881 : 1983 P111 AMD9387 - 1997
SPLITTING TENSILE STRENGTH OF CYLINDRICAL CONCRETE	ASTM C496/ C 496 M - 04
DENSITY OF HARDENED CONCRETE	BS 1881 : 1983 P114 AMD6721 - 1991
COMPRESSIVE STRENGTH OF CONCRETE CORES	BSEN 12504-1:2009
WATER ABSORPTION OF HARDENED CONCRETE	BS 1881 : 1983 P122 AMD6108 - 1989
TRANSVERSE STRENGTH & WATER ABSORPTION FOR TERRAZO TILES	BS 4131 : 1973 Ap. A & B
SAMPLING PRECAST CONCRETE KERBS	BS 7263 : 1994 P1 C14
MEASUREMENT OF DIMENSIONS OF PRECAST CONCRETE KERBS	BS 7263 : 1994 P1 Anx. A.3
TRANSVERSE STRENGTH OF PRECAST CONCRETE KERBS	BS 7263 : 1994 P1 Anx. B.2.2
WATER ABSORPTION OF PRECAST CONCRETE KERBS	BS 7263 : 1994 P1 Anx. C.2.2
SULPHATE CONTENT INHARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)
CHLORIDE CONTENT IN HARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)

Test	Test Method
TYPE OF CEMENT	BS 1881 P124 : (1988) AD- 06
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
ELECTRICAL INDICATION OF CONCRETE'S ABILITY TO RESIST CHLORIDE IO	ASTM C1202 : 2010
FLEXURAL STRENGTH OF CONCRETE PRISMS	BS EN 12390 : PART 5 : 2000
WATER VAPOR TRANSMISSION OF INSULATION MATERIALS	ASTM E96-00
INITIAL SURFACE ABSORPTION OF CONCRETE	BS 1881 : P208 : 1996
DEPTH OF PENTRATION OF WATER FOR CONCRETE	BS EN 12390 - 8 :2009
THERMAL TRANSMISSION PROPERTIES BY HEAT FLOW METER (AAC BLOCK)	ASTM C-518 : 2010
MAKING SPECIMEN FOR THERMAL CONDUCTIVTY	
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
CONSISTENCY OF CEMENT	BS EN 196-3:2005 Clause 5
SETTING TIME OF CEMENT	BS EN 196 - 3 : 2005 Clause 6
SOUNDNESS OF CEMENT	BS EN 196 - 3 : 2005, Clause 7
CHLORIDE CONTENT OF CEMENT	BSEN 196 -P2 : 2005
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
MAKING TEST SPECIMENS - PRISMS	BS EN 196-1 : 2005
COMPRESSIVE STRENGTH OF CEMENT	BS EN 196-1 : 2005 CLAUSE 9.2
FLEXURAL STRENGTH OF CEMENT	BS EN 196-1 : 2005 CLAUSE 9.1
DETERMINATION OF FINENESS OF CEMENT	BS EN 196 - 6 : 1992
WATER REQUIREMENT OF FUEL ASH	BS 3892 PART1:1997 ANNEX E
DENSITY OF CEMENT	BS EN 196-6 NC:1992
MOISTURE CONTENT OF FUEL ASH	BS 3892 PART 1:1997 ANNEX C
STRENGTH FACTOR OF FUEL ASH	BS 3892 PART 1:1997 ANNEX F

Test	Test Method
ACTIVITY INDEX OF FLY ASH	BSEN 450 -1 : 2005
WATER REQUIRED FOR FLY ASH	BSEN - 450 -1 : 2005
ACCELERATED POZZILANIC STRENGTH ACTIVITY INDEX WITH OPC	ASTM C-1240:05 CLAUSE 16
BULK DENSITY OF SILICA FUME	ASTM C1240.05 CLAUSE 19
DENSITY OF SILICA FUMES	ASTM C 1240 .05 CLAUSE 12
FINESS OF CEMENT BY 45 um SIEVE	ASTM - C 430:96 (Re 2003)
MOISTURE CONTENT OF SILICA FUMES	ASTM C-311-2005
FINENESS BY WET SIEVING	BSEN 451-2 : 1995

Masonry Tests

Test	Test Method
COMPRESSIVE STRENGTH OF SOLID MASONRY BLOCKS	BS 6073 : 1981 P2 Ap. B AMD4508
COMPRESSIVE STRENGTH OF HOLLOW MASONRY BLOCKS	BS 6073 : 1981 P2 Ap. B AMD4508 : 1984
COMPRESSIVE STRENGTH OF FILLER BLOCKS	BS 6073 : 1981 P2 Ap. B AMD4508
DIMENSION OF SOLID MASONRY BLOCKS	BS 6073 : 1981 P1 Ap. A AMD4462
DIMENSION OF HOLLOW MASONARY BLOCKS	BS 6073 : 1981 P1 Ap. A AMD4462 - 1984
DIMENSION OF FILLER BLOCKS	BS 6073 : 1981 P1 Ap. A AMD4462 - 1984
DENSITY OF BLOCKS	BS 6073 : 1981 P2 Ap. C AMD4508 - 1984
CHLORIDE CONTENT OF CONCRETE BLOCKS	BS 1881 : 1988 P124
COMPRESSIVE STRENGTH OF PAVING BLOCKS - NON RECTANGULAR	BS 6717 : 1993 P1 Anx. A & B
COMPRESSIVE STRENGTH OF PAVING BLOCKS - RECTANGULAR	BS 6717 : 1993 P1 Anx. A & B
DIMENSION OF PAVING BLOCKS - NON RECTANGULAR	BS 6717 : 1993 P1 Anx. A
DIMENSION OF PAVING BLOCKS - RECTANGULAR	BS 6717 : 1993 P1 Anx. A
SAMPLING OF BLOCKS	WI-IC-01-02
WATER ABSORPTION OF PAVING BLOCKS	BS 1881 : 1983 P122 AMD6108 - 1989
WATER ABSORPTION OF PAVING BLOCKS	ASTM C140 - 09 a
SULPHATE CONTENT INHARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)
CHLORIDE CONTENT IN HARDENED CONCRETE	BS 1881 P124 : (1988) AD- 06 (2002)
WATER ABSORPTION	ASTM C272 : 2001 (Reapproved 2007)

Test	Test Method
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
MOISTURE CONTENT DETERMINATION	ASTM C 1616 - 07
WATER VAPOR TRANSMISSION OF INSULATION MATERIALS	ASTM E96-00
BEHAVIOR OF MATERIAL IN A VERTICAL TUBE FURNACE AT 750 C	ASTM E136 : 2009
COMPRESSIVE STRENGTH OF BRICK AND STRUCTURAL CLAY TILES	ASTM C 67-02a
WATER ABSORPTION OF BRICK AND STRUCTURAL CLAY TILES	ASTM C67-02A
DIMENSION OF MASONRY UNITS	BSEN 772-16 : 2000
COMPRESSIVE STRENGTH OF AUTOCLAVED AERATED CONCRETE	BSEN 679-1994
DRY DENSITY OF AUTOCLAVED AERATED CONCRETE	BSEN 678-1994
DRYING SHRINKAGE OF AUTOCLAVED AERATED CONCRETE	BSEN 680-1994
DETERMINATION OF GROSS DRY DENSITY OF MASONRY UNITS	BS EN 772 - 13 : 2000 CLAUSE 7.3
DETERMINATION OF COMPRESSIVE STRENGTH OF MASONRY UNIT	BS EN 772 - 1 : 2000 ; DMS-1 PART 1
DETERMINATION OF NET DRY DENSITY OF MASONRY UNITS	BS EN 772 - 13 : 2000 CLAUSE 7.2
THERMAL TRANSMISSION PROPERTIES BY HEAT FLOW METER (AAC BLOCK)	ASTM C-518 : 2010
COMPRESSIVE STRENGTH OF MASONRY PRISM	ASTM C 1314
COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNIT & RELATED UNIT	ASTM C140 - 09a & DMS-1: Part 4 : 2010

Test	Test Method
DIMENSION OF CONCRETE MASONRY UNITS & RELATED UNIT	ASTM C140 - 09a
MEASUREMENT OF ABRASION RESISTANCE (WIDE WHEEL TEST)	BS EN 1338:2003 (E)-ANNEX G, AMD 16470-2006
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
VERIFICATION OF VISUAL ASPECT FOR PAVING BLOCK	BS EN 1338:2003 ANNEX J/ DMS 1:PART 4 : 2011 ANNEX B

Rock Tests

Test	Test Method
SPECIFIC GRAVITY & WATER ABSORPTION OF FINE AGGREGATE	ASTM C128 : 07a
SOUNDNESS	ASTM C88 : 05
LOS ANGELES ABRASION (SMALL SIZE COARSE AGGREGATE)	ASTM C131 : 2006
LOS ANGELES ABRASION (LARGE SIZE COARSE AGGREGATE)	ASTM C535 : 2009
PARTICLE DENSITY / WATER ABSORPTION (COARSE AGGREGATE)	BS 812 : 1995 P2 T5.3, 5.4 AMD10379/r - 1999
SAMPLING HARDENED CONCRETE (CORING ON FLOORS)	BS 1881 : 1983 P120 AMD6109 - 1989
SPECIFIC GRAVITY & WATER ABSORPTION OF COARSE AGGREGATE	ASTM C 127 : 07
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
POINT LOAD STRENGTH INDEX OF ROCK	ASTM D5731 - 2002
UNCONFINED COMPRESSIVE STRENGTH OF COHESIVE SOIL USING LOAD FRAME METHOD	BS 1377 : PART7 : CL.7.2 : 1990

Soils Tests

Test	Test Method
INSITU CBR	BS 1377 :PART9: 1990: T 4.3AMD 8264: 1995
CONE PENETRATION TEST (PER METER)	DIN 4094 : P2 : 1980 & DIN 4094 : P1 : 1974
STANDARD PENETRATION TEST (PER METER)	BS 1377:Part9 : 1990:T 3.3 AMD 8264:1995
INSITU DENSITY (SMALL POURING CYLINDER)	BS 1377 :Part9: 1990:T 2.1 AMD 8264: 1995
INSITU DENSITY (LARGE POURING CYLINDER)	BS1377:P9:cl.2.2:Amd 8264:95(AD-09:2011)
SIEVE ANALYSIS (WET)	BS 1377 : Part 2 : 1990:T 9.2 : AMD9027:1996
SAMPLING OF SOIL FROM BOREHOLE (BY USING STANDARD PENETRATION EQUIPMENT (PER METER)	BS 5930 - 1999
CHLORIDE CONTENT OF SAND & AGGREGATE (ACID SOLUBLE)	BS 812 : 1988 P117 " Appendix C "
SULPHATE CONTENT OF SAND & AGGREGATE (ACID SOLUBLE)	BS EN 1744-1:1998
SPECIFIC GRAVITY & WATER ABSORPTION OF FINE AGGREGATE	ASTM C128 : 07a
FULLY CRUSHED FACES OF AGGREGATE	DMS - 7 : 2001(R-07)
PARTIALLY CRUSHED FACES OF AGGREGATE	DMS - 8 : 2001(R07)
TEN PERCENT FINES (DRY)	BS 812 : 1990 P111 T7.1 (AD-04:2002)
ELONGATION INDEX OF AGGREGATE	BS 812 : 1990 P105 S105.2
AGGREGATE CRUSHING VALUE	BS 812 : 1990 P110 (AD-03:2002)
SOUNDNESS	ASTM C88 : 05

Test	Test Method
LOS ANGELES ABRASION (SMALL SIZE COARSE AGGREGATE)	ASTM C131 : 2006
LOS ANGELES ABRASION (LARGE SIZE COARSE AGGREGATE)	ASTM C535 : 2009
LIQUID LIMIT	BS 1377 : Part 2:1990 : T4.5 AMD 9027 : 1996
PLASTIC LIMIT	BS 1377 : Part 2:1990 :T5.3 AMD 9027 : 1996
PLASTICITY INDEX	BS 1377: Part2: 1990: T5.4 AMD 9027 : 1996
SAND EQUIVALENT OF SOILS & FINE AGGREGATE	ASTM D2419 : 2009
FLAKINESS INDEX OF AGGREGATE	BS 812 : 1989 P105 S105.1
SAMPLING OF AGGREGATE	ASTM D75 - 09
CALIFORNIA BEARING RATIO (CBR)	BS 1377: Part4:1990: T.7 AMD 13925 : 2002
LINEAR SHRINKAGE	BS 1377 : Part2: 1990: T6.5 AMD 9027: 1996
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP (4" MOULD)	BS 1377 : Part4:1990 T.3.5 AMD 13925 : 2002
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP (6" MOULD)	BS 1377 : Part4:1990: T. 3.6 AMD 13925 : 2002
SIEVE ANALYSIS (WET)	BS 1377 : Part 2 : 1990:T 9.2 : AMD9027:1996
SIEVE ANALYSIS (DRY)	BS 1377:1990 P2 T9.3
ORGANIC MATTER CONTENT	BS 1377 : P3 (1990)AMD 9028:(1996)
ACID SOLUBLE SULPHATE OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)
ACID SOLUBLE CHLORIDE OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)
WATER SOLUBLE SULPHATE OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)
PH VALUE OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)

Test	Test Method
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP (VIBRATING HAMMER)	BS 1377 : Part4: 1990 : T.3.7 AMD 13925 : 2002
SPECIFIC GRAVITY & WATER ABSORPTION OF COARSE AGGREGATE	ASTM C 127 : 07
WATER SOLUBLE CHLORIDE OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)
CARBONATE CONTENT OF SOIL	BS 1377 : P3 (1990)AMD 9028:(1996)
ANALYSIS OF MATERIAL BY X-RAY FLUORSCENCE SPECTOMETRY	BS ISO 29581 - 2 : 2010
CEMENT CONTENT OF CEMENT STABILIZED MATERIALS	BS 1924 : PART 2 : CL 5.1 : 1990
UNCONFINED COMPRESSIVE STRENGTH OF COHESIVE SOIL USING LOAD FRAME METHOD	BS 1377 : PART7 : CL.7.2 : 1990
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
pH OF SOIL AND SOIL- AGG./LIGHTWEIGHT EXPANDABLE CLAY AGG.	AASHTO T 289-91

Water analysis

Test	Test Method
CHLORIDE CONTENT IN WATER	ASTM D512 - 10
pH VALUE OF WATER	ASTM D1293 : 2005
TOTAL DISSOLVED SOLIDS (TDS) OF WATER	BS 1377 : P3 (1990)AMD 9028:(1996)
SULPHATE CONTENT IN WATER	ASTM D516 - 07
CHLORIDE CONTENT OF GROUND WATER	BS 1377 : P3 (1990)AMD 9028:(1996)
SULPHATE CONTENT OF GROUND WATER	BS 1377 : P3 (1990)AMD 9028:(1996)
PH OF GROUND WATER	BS 1377 : P3 (1990)AMD 9028:(1996)

Other Fields (Ceramic Tiles Analysis)

Test	Test Method
IGNITABILITY TEST - SINGLE-FLAME SOURCE TEST	BS EN ISO 11925 - 2 : 2002
FIRE CLASSIFICATION OF CONSTRUCTION PRODUCTS	BS EN 13501 -1 :2007
WATER ABSORPTION PF CERAMIC TILES	BS EN ISO 10545-3 : 1997 CLAUSE 5.1.1
MODULUS OF RUPTURE AND BREAKING STRENGTH OF CERAMIC TILES	BS EN ISO 10545-4 : 1997
SURFACE SCRATCH HARDNESS ACCORDING TO MOHS SCALE	BS EN 15771 : 2010
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
SLIP RESISTANCE OF PEDESTRIAM SURFACES (PENDULUM METHOD)	BS 7976 - 2: 2002
LENGTH & WIDTH OF CERAMIC TILES	UAE S GSO ISO 10545-2 : 2007 CLAUSE 2
STRAIGHTNESS OF SIDES OF CERAMIC TILES	UAE S GSO ISO 10545-2 :2007 CLAUSE 4
SURFACE QUALITY OF CERAMIC TILES	UAE S GSO ISO 10545-2 : 2007 CLAUSE 7
THICKNESS OF CERAMIC TILES	UAE S GSO ISO 10545-2 : 2007 CLAUSE 3
SURFACE FLATNESS OF CERAMIC TILES	UAE S GSO ISO 10545-2 : 2007 CLAUSE 6
RECTANGULARITY OF CERAMIC TILES	UAE S GSO ISO 10545-2 : 2007 CLAUSE 5

Other Fields (Lubricating Oil Analysis)

Test	Test Method
KINEMATIC VISCOSITY & CALCULATION OF VISCOSITY INDEX	ASTM D445 - 06 & ASTM D2270 - 04
POUR POINT OF LUBRICATING OILS	ASTM D97 - 08
FLASH POINT OF LUBRICATING OILS BY CLEVELAND OPEN CUP	ASTM D92 - 05a(Reapproved 2010)
FOAMING CHARACTERISTICS OF LUBRICATING OILS	ASTM D892 - 06
SULFATED ASH FROM LUBRICATING OILS AND ADDITIVES	ASTM D874 - 07
FLASH POINT OF LUBRICATING OILS BY PENSKY-MARTENS	ASTM D93 - 07
SAMPLING OF LUBRICATING OILS	UAE STANDARD No. 125 : 1992
APPARENT VISCOSITY OF LUBRICATING OIL USING THE COLD - CRANKING SIMULATOR	ASTM D5293 (2008)
BASE NUMBER OF PETROLEUM PRODUCTS BY P.P.A.T.	ASTM D 2896-07a

Other Fields (Paint & Pigments Analysis)

Test	Test Method
GRADING OF SOLID GLASS BEADS	BS 6088 : 1981 Ap B AMD5600 - 1987
HEAT STABILITY OF THERMOPLASTIC ROAD MARKING MATERIALS	BS 3262 : P 1 (1989) AMD - 8783 (1995)
SOFTENING POINT OF THERMOPLASTIC ROAD MARKING MATERIAL	BS 2000 : PART - 58 : 2007
LUMINANCE FACTOR OF THERMOPLASTIC ROAD MARKING MATERIAL	BS 3262 : P 1 (1989) AMD - 8783 (1995)
FLOW RESISTANCE TO THERMOPLASTIC ROAD MARKING MATERIALS	BS 3262 : P 1 (1989) AMD - 8783 (1995)
SKID RESISTANCE	BS 3262 : P 1 (1989) AMD - 8783 (1995)
RELATIVE DENSITY OF THERMOPLASTIC ROAD MARKING MATERIALS	BS 3262-3 : 1989 App.C Amd.8785 :1995 &10205 :1998
GRADING OF THERMOPLASTIC ROAD MARKING MATERIALS	BS 3262 : P 1 (1989) AMD - 8783 (1995)
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
LEAD IN PAINT BY ATOMIC EMISSION SPECTROMETRY -ICP-AES	ASTM E 1613:04
VOC CONTENT OF ADHESIVES/SEALANTS/VARIOUS MATERIALS	SCAQMD 304-91
VOC CONTENT OF ADHESIVES/SEALANTS/VARIOUS MATERIALS	SCAQMD 304-91
VOC CONTENT OF PAINTS & RELATED COATINGS BY DIFFERENCE METHOD	BS EN ISO 11890-1:2007
VOC CONTENT OF PAINTS & RELATED COATINGS BY DIFFERENCE METHOD	BS EN ISO 11890-1:2007
VOC CONTENTS OF PAINTS & RELATED COATINGS BY GCMS	BS EN ISO 11890-2:2006
VOC CONTENTS OF PAINTS & RELATED COATINGS BY GCMS	BS EN ISO 11890-2:2006

Other Fields (Pipes Analysis)

Test	Test Method
INITIAL SPECIFIC STIFFNESS AND RESISTANCE TO STRUCTURAL DAMAGE FOR GRP	BS 5480:1990 APPENDIX - H
INITIAL LONGITUDINAL UNIT TENSILE STRENGTH BY STRIP TEST FOR GRP	BS 5480:1990 APPENDIX-A
DETERMINATION OF RING STIFFNESS FOR THERMOPLASTIC PIPES	BS EN ISO 9969:1995
HEAT REVERSION OF POLYPROPYLENE PIPES	DIN 8078: 2008-09& BSEN ISO 2505-05
SURFACE FINISH OF POLYPROPYLENE PIPES	DIN 8078 : 2008-09
OVALITY OF POLYPROPYLENE PIPES	DIN 8078 : 2008-09
DIMENSION OF POLYPROPYLENE PIPES	DIN- 8078 :2008-09

Other Fields (Steel Analysis)

Test	Test Method
MASS OF ZINC COATING ON STEEL WIRE	BS EN 10244-1 & 2 (2001)
THICKNESS OF COATING OF GALVANIZED STEEL	BS EN ISO 1461 : 2009
TENSILE TEST OF HIGH TENSILE STEEL WIRE & STRAND	BS 5896 : 1980 (APPENDIX A5)
TENSILE TEST OF CARBON STEEL BARS	BS 4449 : 1997
REBEND FOR CARBON STEEL BARS	BS 4449 : 1997 TEST E.1.6
MASS OF ZINC COATING OF FERROUS MATERIALS (GRAVIMETRIC METHOD)	BS EN ISO 1460 : 1995
TENSILE TESTING OF METALIC MATERIALS	BSEN 10002-1
LONGITUDINAL TENSILE PROPERTIES OF FIBER REIFORCED POLYMER BAR	DMS-19 .2005
TENSILE OF STEEL STRAND - UNCOATED SEVEN WIRE	ASTM A416/A416M - 10 & ASTM A1061/A1061M-09
CHEMICAL ANALYSIS OF CARBON & LOW ALLOY STEEL BY OPTICAL EMISSION SPECTROMETRY	ASTM E 415 - 08
CHEMICAL ANALYSIS OF CARBON & LOW ALLOY STEEL BY OPTICAL EMISSION SPECTROMETRY	ASTM E415 : 2008
TENSILE TEST OF STEEL FOR THE RIENFORCEMENT OF CONCRETE	BS EN ISO 15630-1 : 2002
REBEND TEST OF STEEL FOR THE RIENFORCEMENT OF CONCRETE	BS EN ISO 15630-1 : 2002
TENSILE TEST FOR CARBON STEEL BAR FOR CONCRETE	ASTM A-370-08a Annex 9

Test	Test Method
BEND TEST FOR CARBON STEEL BAR FOR CONCRETE	ASTM A-370-08a Annex 9
MSMT.OF THE GEOMETRICAL CHAR.& RELATIVE RIB AREA OF STEEL BAR	BS EN ISO 15630-1 : 2002 C10 &11
MEASUREMENT OF PROJECTED RIB AREA OF DE FORMED STEEL BAR	BS 4449 :1997 : ANNEX C
TENSILE STRENGTH TEST OF STEEL COUPLER	DMS - 024 : 2010
RIB MEASUREMENT OF DEFORMED STEEL BAR	ASTM A 615/615M 09 CL. 8
TENSILE TEST OF METALLIC MATERIALS	ASTM A370 - 2010 CL. 5 TO 13
CHEMICAL ANALYSIS OF STAINLESS STEEL BY ATOMIC EMISSION	ASTM E 1086-08
CHEMICAL ANALYSIS OF STAINLESS STEEL BY ATOMIC EMISSION	ASTM E 1086-08

Other Fields (Green Building Analysis)

Test	Test Method
APPARENT DENSITY	BS EN 1602 : 1997
DIMENSION & DENSITY OF BLOCK & BOARD INSULATION	ASTM C 303 : 2007
MOISTURE CONTENT DETERMINATION	ASTM C 1616 - 07
NON-FIBROUS (SHOT) CONTENT DETERMINATION	ASTM C 1335 (04) - R09
BINDER CONTENT DETERMINATION	ASTM C 1139 - 08
DETERMINATION OF ORGANIC MATTER	BS 2972 SEC 16 : METHOD 1
WATER ABSORPTION (2H) THERMAL INSULTATION	ASTM C 209 : 07a
THERMAL TRANSMISSION PROPERTIES BY HEAT FLOW METER (THERMAL COND)	ASTM C518 : 2010
BULK DENSITY PREFORMED FLAT MATERIAL (INORGANIC INSULATION)	BS 2972 SEC. 3 : 1989
BULK DENSITY OF PREFORMED PIPE SECTION (INORGANIC INSULATION)	BS 2972 SEC. 3 : 1989
DENSITY & DIMENSION OF PREFORMED PIPE INSULATION	ASTM C302 : 1995, PROCEDURE - 1 (R-2007)
LONG TERM WATER ABSORPTION BY PARTIAL IMMERSION	BSEN 12087 : 1997 METHOD 1A
LONG TERM WATER ABSORPTION BY TOTAL IMMERSION	BSEN 12087 : 1997 METHOD 2A
SHORT TERM WATER ABSORPTION BY PARTIAL IMMERSION	BSEN 1609 : 1997 METHOD A
WATER ABSORPTION (CELLULAR GLASS INSULATION)	ASTM C240 : 2008
THICKNESS & DENSITY OF BLANKET & BATT INSULATION	ASTM C 167 : 1998 (R-2003)
THICKNESS OF THERMAL INSULATION	BS EN 823 : 95

Test	Test Method
WATER VAPOR TRANSMISSION OF INSULATION MATERIALS	ASTM E96-00
DIMENSION STABILITY UNDER CONSTANT NORMAL LAB CONDITIONS	BS EN 1603 : 1997 (AMD-9742:97)
MOISTURE CONTENT AS RECEIVED OF INORGANIC INSULATION	BS 2972 SEC. 11 : 1989
WATER ABSORPTION (TOTAL IMMERSION) OF INORGANIC INSULATION	BS 2972 SEC. 12 : 1989
WATER ABSORPTION	ASTM C272 : 2001 (Reapproved 2007)
COARSE SHOT CONTENT OF INORGANIC INSULATION	BS 2972 SEC. 14 : 1989
LENGTH AND WIDTH OF THERMAL INSULTATION	BS EN 822 : 95
COMPRESSIVE RESISTANCE OF THERMAL INSULATION	ASTM C165 : 2007 PROCEDURE A/B
COMPRESSIVE STRENGTH/COMPRESSIVE STRESS AT 10% DEFORMATION	BS EN 826 : 1996
DIMENSIONAL STABILITY UNDER SPECIFIED TEMPERATURE & HUMIDITY	BS EN : 1604 : 1997
BEHAVIOR OF MATERIAL IN A VERTICAL TUBE FURNACE AT 750 C	ASTM E136 : 2009
TENSILE STRENGTH PARALLEL TO FACES OF THERMAL INSULATION	BS EN - 1608 : 1997
BULK DENSITY OF GRANULAR LOOSE FILL INSULATION	ASTM C 520 : 2004 METHOD A
FLEXURAL STRENGTH OF INORGANIC INSULATION	BS 2972-89, SECTION 18
THERMAL AND HUMID AGING AT SPECIFIED CONDITION	ASTM D 2126 : 09
BENDING STRENGTH OR BENDING STRESS AT GIVEN DEFLECTION	BS EN 12089-97 METHOD B,

Test	Test Method
WATER VAPOR SORPTION OF UNFACED MINERAL FIBER INSULATION	ASTM C 1104/C-1104M - 00
WORKMANSHIP, FINISH & APPEARANCE OF RCPS THERMAL INSULATION	ASTM C 578 : 2011 CL .9
THERMAL TRANSMISSION PROPERTIES BY HEAT FLOW METER (AAC BLOCK)	ASTM C-518 : 2010
COMPRESSIVE STRENGTH OF RIGID CELLULAR PLASTICS	ASTM D 1621:00
APPARENT DENSITY OF RIGID CELLULAR PLASTICS	ASTM D 1622 : 03
SAMPLING OF CONSTRUCTION MATERIALS	DCLD - IC - 99
COMPRESSIVE STRENGTH OF POLYPROPYLENE FLUTED BOARDS	DMS 18:2004
FLEXURAL STRENGTH OF THERMAL INSULATION	ASTM C203:2005a METHOD 1
MAKING SPECIMEN FOR THERMAL CONDUCTIVTY	
DETERMINATION OF SQUARENESS OF THERMAL INSULATION	BSEN 824 : 1995
DETERMINATION OF FLATNESS OF THERMAL INSULATION	BSEN 825 :1995
MEASURING TRUNESS AND SQUARENESS OF INSULATION	ASTM C 550-10
ODOR EMISSION OF THE THERMAL INSULATION MATERIALS	ASTM C 1304 - 08
DETERMINATION OF BEHAVIOUR UNDER POINT LOAD(THRMAL INSULATION)	BSEN 12430 : 1998
BREAKING LOAD (TWO POINT) OF THERMAL INSULATION BEAM	
IGNITABILITY TEST - SINGLE-FLAME SOURCE TEST	BS EN ISO 11925 - 2 : 2002
FIRE CLASSIFICATION OF CONSTRUCTION PRODUCTS	BS EN 13501 -1 :2007

Test	Test Method
MINIMUM OXYGEN CONCENTRATION TO SUPPORT CANDLE LIKE COMBUSTION	ASTM D 2863-09
GRAB BREAKING LOAD & ELONGATION OF GEOTEXTILES	ASTM D 4632:08
LIGHT REFLECTANCE VALUE (LRV) OF A SURFACE	BS 8493 : 2008 + A1 : 2010
SOLAR REFLECTANCE INDEX (SRI) OF MATERIALS	ASTM E 1980:01
VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT BY GCMS (OUTSOURCE)	US EPA SW 846/8260 B
DETERMINATION OF THICKNESS OF ACP	DMS : 080 : 2012
DETERMINATION OF MASS PER UNIT AREA OF ACP	DMS-029 : 2012
DETERMINATION OF LENGTH AND WIDTH OF ACP	DMS-028 : 2012

Environmental Tests

Water & waste water analysis

Test	Test Method
Conductivity	APHA-2510 B
Turbidity	APHA-2130 B
pH	APHA-4500-H+
Total Suspended Solids (TSS)	APHA-2540 D
Total Dissolved Solids (TDS)	APHA-2540 C
Total Solids	APHA-2540 B
Oil & grease	APHA-5520 B
Total Alkalinity	APHA-2320 B
Acidity	APHA-2310 B
Total Hardness	APHA-2340
Phosphate-Phosphorous	MOOPM4rd ED. 3.2.8-A
Determination of Total Phosphorus	APHA -4500-P (B,D)
Free chlorine	APHA-4500-Cl- G
Determination of Color	APHA-2120 B
Determination of Carbonate & Bicarbonate by Titrimetry	AOAC 920.194

Test	Test Method
Determination of monochloroamine	APHA-4500-Cl- G
Chlorides	APHA-4500-CI- B
Fluorides	APHA-4500-F- C
Determination of Fluoride(F) by	Dionex Manual
Determination of Nitrate(NO3) by	Dionex Manual
Determination of Chloride (Cl)	Dionex Manual
Determination of Sulfate (SO4) by	Dionex Manual
Determination of Bromate (Bro3)	Dionex Manual
Determination of Bromide (Br) by Ion chromatography	Dionex Manual
Determination of Chlorite (ClO2)	Dionex Manual
Determination of Chlorate(ClO3)	Dionex Manual
Sulfate	APHA-4110B
Sulfide	APHA-4500 S^{2-} F
Chemical Oxygen Demands (COD)	APHA-5220 B
Biochemical Oxygen Demands (BOD)	APHA-5210 B

Test	Test Method
Total Nitrogen	T.RPARSONS 2.1,1984,APHA 4110 B
Total Kjeldahl Nitrogen	APHA-4500-NORG B,C
Ammonia Nitrogen	APHA-4500-NH3- B,C
Nitrate- Nitrogen	APHA-4110-B
Salinity	By meter
Oil & Grease	APHA-5520-B
Determination of Phytopigments	T.R. Parsons (4.1,4.2)
Determination of Anionic Surfactants as MBAS	APHA-5540-C
Determination of Petroleum Hydrocarbon	MOOP 4rd ED. –SECTION 6.6,6.9
Determination of Metals (Pb,Ni,Cr,Co, Fe,Mn,Ag)	APHA-3030E,3120
Determination of Metals (Cu,Cd,Zn)	APHA-3030E,3120
Determination of Silver (Ag) by	APHA-3120
Determination of Arsenic (As)	APHA-3120
Determination of Cadmium (Cd), Manganise (Mn)	APHA-3120

Test	Test Method
Determination of Lead (Pb)	APHA-3120
Determination of Calcium (Ca*), Magnesium (Mg*) , Iron (Fe)	APHA-3120
Determination of Metals (Zn* ,Ni* ,Cr *,Cu*,Mo,Na,Ba,K)	APHA-3120
Determination of Copper(Cu) , Cadmium(Cd),Zinc(Zn), Manganese (Mn), Nickel(Ni) & Chromium(Cr), Iron(Fe) & Cobalt(Co), Lead(Pb), Silver(Ag)	APHA-3030 E, 3111
Determination of Sodium(Na), Potassium(K), Magnesium(Mg) , Calcium(Ca)	APHA 3111
Determination of Selenium (Se)	APHA-3120,VGA Manual
Determination of Mercury (Hg)	APHA-3120,VGA Manual
Determination of Organochlorine Pesticides in water by GC-ECD-Solvent Extraction (Endrin,Dieldrin,Aldrin,p,p DDT, o,p DDT, ,Lindane,Trifluralin,Chlordane,Alachlor,Pendemethalin,Methoxychlor)	APHA-6630-B

Test	Test Method
2- Microbiological Test for water sample	
Determination & Enumeration of Coliforms & E-Coli	APHA-9223 B
Detection & Enumeration of Faecal Streptococci	BSI BS 6068 SECTION 4.4:1989
Enumeration of Aerobic Colony Count	APHA-9215 A & B
Cryptosporidium and Giardia	EPA-Method 1623
Detection & Enumeration Of Pseudomonas aeruginosa	BSI BS 6068 SECTION 4.7:1989
Intestinal Nematodes Eggs	WHO Geneva,1996
Determination & Enumeration of Legionella species	BSI BS 6068 SECTION 4.12:1998

Drinking Water analysis

Test	Test Method
Chemical Analyses	
Determination of pH	APHA-4500-H^+
Determination of Conductivity	APHA-2510 B
Determination of Turbidity	APHA-2130 B
Determination of Total Dissolved Solids	TDS/EC Meter
Determination of Total Hardness as CaCo3	APHA-2340
Determination of Nitrogen-Ammonia	APHA-4500-NH3- B, C (21th edition)
Determination of Fluoride(F)	Dionex manual
Determination of Nitrate(NO3)	Dionex manual
Determination of Nitrate(NO3)	Dionex manual
Determination of ASulfate (SO4)	Dionex manual
Determination of Bromate (Bro3)	Dionex manual
Determination of Bromide (Br)	Dionex manual
Determination of Chlorite (ClO2)	Dionex manual
Determination of Chlorate(ClO3)	Dionex manual

Test	Test Method
Determination of Silver (Ag) by ICP-OES	APHA 3120
Determination of Arsenic (As) by ICP-OES	
Determination of Cadmium (Cd), Manganise (Mn)	
Determination of Lead (Pb)	
Determination of Calcium (Ca), Magnesium (Mg) , Iron (Fe)	
Determination of Metals (Zn ,Ni ,Cr,Cu,Mo,Na,Ba,K)	
Determination of Colour	APHA -2120 B
Determination of Free Chlorine	APHA-4500 Cl -G
Determination of Monochoramine	APHA-4500 Cl -G
Determination of Trace elements (Sb,As,BA,Be,Cd,Cr,Pb,Mn,Hg,Mo,Ni,Se,Ag,Sn,U)	3125 APHA-21 st edition.2005
Determination of Selinium(Se)	APHA- 3120, VGA Manual
Determination of Mercury(Hg)	APHA- 3120, VGA Manual
Determination of Organochlorine Pesticides in Water By GC-ECD-Solvent Extraction	APHA 6630B
2- Microbiological Test for Drinking Water	
Detection and Enumeration of Coliforms & E.COLI (IDEXX)	APHA-9223 B
Detection and Enumeration of Pseudomonas aeruginosa	BSI BS 6068 section 4.7 :1989
Detection and Enumeration of Faecal Streptococci	BSI BS 6068 section 4.4 :1989
Detection and Enumeration of sulfite- reducing clostridia in drinking water	BS EN 26461 part 2 1993 *Water quality- detection*

Soil, Sludge & Sediment analysis

Test	Test Method
Chemical Analyses	
Determination of Moisture	Chemical Analysis of Polluted Siols. EPA-Publication.139-4.Melbpurne.Nov.1981
Determination of pH	EPA-SW-846-9045 C
Determination of Total Phosphorus	Chemical Analysis of ecological meterials-3,APHA-4500 P D
Determination of Total Heavy Metals*Copper(Cu),Cadmium (Cd),Lead(Pb),Nickel(Ni),Zinc (Zn),Chromium(Cr)*	EPA-139-13 Melbourne.1981,MOOPAM 4th edition &APHA-3111
Determination of Petroleum Hydrocarbons	MOOPAM 4th ED.-Section 6.7,6.9
Determination of Oil And Grease	APHA-5520 E
Determination of Sludge-Leachate Test	DM,EPSS TG-No-43
Determination of Electrical conductivity Of Soil	EPA, Melbourne Publication 139-6

Fish & Biological analyses Checklist

Test	Test Method
Chemical Analyses	
Determination of Total Heavy Metals Copper(Cu),Cadmium (Cd),Lead(Pb),Nickel(Ni),Zinc (Zn)	MOOPAM 4th ED,section 5.3,5.4
Determination of Hydrocarbon	MOOPAM 4th ED,section 6.8,6.9

EXOVA LTD. – Abu Dhabi Approved List

Location details		Activity	Location code
Location Address Exova Ltd (Abu Dhabi) Plot 25 Old Airport Road Umm Al Naar (Sas Al Nakhl) Abu Dhabi United Arab Emirates **Postal Address** Exova Ltd (Abu Dhabi) PO Box 9191 Abu Dhabi United Arab Emirates	**Local contact** Mr. C Davey Tel: +971-2-5582345 Fax: +971-2-5584515 E-Mail: middle.east@exova.com	Aggregates – Chemical tests Soils - Physical & Mechanical tests Metals & Weldments - Chemical tests Metals & Weldments - Corrosion tests Metals & Weldments - Mechanical tests Metals & Weldments - Metallurgical tests	A
Location Address Exova Ltd (Abu Dhabi) Taweelah A1 Power & Water Desalination Plant Facility Laboratory Taweelah United Arab Emirates	**Local contact** Mr C Castillo Tel: Fax: E-Mail:middle.east@exova.com	Water - Chemical tests	B
Location Address Exova Ltd (Abu Dhabi) Reem Island Laboratory Reem Island Abu Dhabi United Arab Emirates	**Local contact** Mr A Lucas Tel: + 971 2 5582345 Fax: +971-2-5581034 E-Mail:middle.east@exova.com	Aggregates – Physical & Mechanical tests Bituminous Mixtures - Physical & Mechanical tests Fresh Concrete - Sampling, & Physical tests Hardened Concrete - Physical & Mechanical tests Soils - Physical & Mechanical tests	D

Contents

Accredited Activity

Analytical Chemical Analysis

Construction Materials Testing

Metallurgical, Corrosion and Associated Chemical Analysis

Site Sampling and Testing

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Analytical Chemical Analysis			
WATER	Ammonia	Documented In-house method CHEM 3002	B
	Electrical conductivity	Documented In-house method CHEM 2001	B
	Nitrite	Documented In-house method CHEM 3017	B
	pH value	Documented In-house method CHEM 3001	B
	Residual (free available) Chlorine	Documented In-house method CHEM 2005	B
	Total dissolved solids (TDS)	Documented In-house method CHEM 2008	B
	Turbidity	Documented In-house method CHEM 2003	B

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Construction Materials Testing			
AGGREGATES	Particle density and water absorption for aggregate 10mm nominal size and smaller	BS 812:Part 2:1995	D
	Particle density and water absorption for aggregate all larger than 10mm	BS 812:Part 2:1995	D
	Particle density and water absorption for aggregate between 40mm and 5mm	BS 812:Part 2:1995	D
	Particle size distribution - washing and sieving	BS 812:Part 103 Section 103-1: 1985	D
	Particle size distribution - dry sieving	BS 812:Part 103 Section 103-1: 1985	D
	Flakiness index	BS 812:Part 105:Section 105.1: 1989	D
	Elongation index	BS 812:Part 105:Section 105.2: 1990	D
	Shell Content in Coarse Aggregate	BS 812: Part 106: 1985	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES (cont'd)	Moisture content - oven dry method	BS 812:Part 109:1990	D
	Aggregate crushing value - particle size 10mm and greater *(Forces from 30 to 3000kN)*	BS 812:Part 110:1990	D
	Ten per cent fines value - dry - particle size 10mm and greater *(Forces from 30 to 3000kN)*	BS 812:Part 111:1990	D
	Aggregate impact value - dry	BS 812:Part 112:1990	D
	Acid soluble chloride salt content	BS 812:Part 117:1988 (App C)	A & D
	Total sulphate content by acid extraction	BS 812:Part 118:1988	A & D
	Materials finer than 75μm (No 200) in mineral aggregates by washing	ASTM C117-13	D
	Specific gravity and absorption of coarse aggregates	ASTM C127-12	D
	Specific gravity and absorption of fine aggregates	ASTM C128-12	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Resistance to degradation of small-size coarse aggregate by abrasion and impact in the Los Angeles Machine	ASTM C131-14	D
	Sieve analysis of fine and coarse aggregates	ASTM C136-06	D
	Clay lumps and friable particles in aggregates	ASTM C142-10	D
	Resistance to degradation of large-size coarse aggregate by abrasion and impact in the Los Angeles Machine	ASTM C535-12	D
	Total evaporable moisture content by drying	ASTM C566-13	D
BITUMINOUS MIXTURES for roads and other paved areas	Bulk specific gravity and density of compacted bituminous mixtures	ASTM D2726-14	D
	Thickness of compacted bituminous paving mixture specimens	ASTM D3549-12	D
	Mechanical size analysis of extracted aggregates	ASTM D5444-08	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas (cont'd)	Asphalt content of hot-mix asphalt by ignition method	ASTM D6307-10	D
	Preparation of bituminous specimens using Marshall apparatus	ASTM D6926-10	D
	Marshall stability and flow *(Forces from 2.5 to 50 kN)*	ASTM D6927-06	D
CONCRETE - hardened	Density	BS 1881:Part 114:1983 (withdrawn)	D
	Compressive strength of cubes - including curing *(Forces from 30 to 3000 kN)*	BS 1881:Part 116:1983 (withdrawn) BS 1881:Part 111:1983 (withdrawn)	D
	Water absorption	BS 1881:Part 122:1983 (withdrawn)	D
	Shape and dimension of specimens	BS EN 12390-1: 2012	D
	Compressive strength of cubes - including curing *(Forces from 30 to 3000 kN)*	BS EN 12390-2: 2009 BS EN 12390-3: 2009	D
	Density	BS EN 12390-7: 2009	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE – hardened (cont'd)	Compressive strength of cores *(Forces from 60 to 3000kN)*	BS EN 12504-1:2009	D
	Rapid chloride permeability	ASTM C1202- 12	D
	Absorption of water by immersion	RILEM CPC 11.1:1984	D
	Absorption of water by immersion under vacuum	RILEM CPC 11.3:1984	D
	Water permeability	DIN 1048:Part 5:June 1991	D
SOILS for civil engineering purposes	Acid soluble chloride salt content	BS1881 Part 124 Clause 10.2:1998	D
	Total sulphate content by acid extraction	BS1881 Part 124 Clause 10.3:1998	D
	Moisture content - oven drying method	BS 1377:Part 2:1990	D
	Particle size distribution - wet sieving	BS 1377:Part 2:1990	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Particle size distribution - dry sieving	BS 1377:Part 2:1990	D
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377:Part 4:1990	D
SOILS for civil engineering purposes (cont'd)	CBR (California Bearing Ratio) of laboratory-compacted soils *(Forces from 2 to 40kN)*	BS 1377:Part 4:1990	D
	Laboratory compaction characteristics of soil using modified effort	ASTM D1557-12	D
	CBR (California Bearing Ratio) of laboratory-compacted soils *(Forces from 2 to 40kN)*	ASTM D1883-07	D
	Water (moisture) content	ASTM D2216-10	D
	Acid soluble chloride salt content	BS 1377 Part 3:1990	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Total sulphate content by acid extraction	BS 1377 Part 3:1990	D
Materials/Products tested	**Type of test/Properties measured/Range of measurement**	**Standard specifications/ Equipment/Techniques used**	**Location Code**
Metallurgical, Mechanical, Corrosion and Associated Chemical Testing			
Plain carbon, low alloy and stainless steels	Elemental Analysis	Documented In-House Method CHEM 1001 using Direct Reading Optical Emission Spectrometry techniques	A
Low alloy and stainless steels	Elemental Analysis	Documented In-House Method CHEM 1007 using ICP-Optical Emission Spectrometry techniques	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Nickel alloys	Elemental Analysis	Documented In-House Method CHEM 1010 using ICP-Optical Emission Spectrometry techniques	A
Plain carbon, low alloy and stainless steels	Carbon and Sulphur content	Documented In-House Method CHEM 1029 using IR-combustion techniques	A
	Nitrogen content	Documented In-House Method CHEM 1028-AUH using IR-combustion techniques	A
Austenitic stainless steels and wrought, nickel rich, chromium bearing alloys	Susceptibility to intergranular attack	ASTM G28-02 (2008) Method A ASTM A262-10 Practices A, B, C & E	A
Iron, Steels and Ferrous Metals	Suseptibility to cracking of line pipe steels in sour service (Full Ring Ovalisation test) Excluding NDT	HSE OTI 95 635 (1996)	A
	Sulphide Stress Cracking (SSC)	NACE TM0177:2005 ASTM G39-99(2011) EFC 16:2009 3rd Edition E-M-OP-MC-CO-MD-009	A
	Pitting resistance	ASTM G48-11 Methods A, C & E	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Iron, steels and other ferrous metals	Hydrogen induced cracking (HIC)	NACE TM0284-11 Documented In-house Method E-M-OP-MC-CO-MD-007	A
	Bend	BS EN ISO 7438:2005	A
	Hardness:		
	Brinell (HB1/30)	BS EN ISO 6506-1:2005 ASTM E10-14	A
	Rockwell (B and C Scales)	BS EN ISO 6508-1:2005 ASTM E18-14	A
	Vickers (HV5, 10 & 30)	BS EN ISO 6507-1:2005 ASTM E384-11	A
	Charpy impact including Expansion and Shear (temperature range: -196°C and -120°C to ambient)	BS EN ISO 148-1:2010 ASTM E23-12c ASTM A370-14	A
	Fracture toughness		
	CTOD (temperature range: -196°C and -120°C to ambient)	BS 7448-1:1991	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Carbon steel bars for the reinforcement of concrete	Tensile at ambient temperature (forces up to 2000 kN)	BS EN ISO 6892-1:2009 ASTM E8/E8M-13a ASTM A370-14 API 5L 44th Edition 2007	A
	Bend	BS 4449:1988 (withdrawn) ASTM A615/A615M-13	A
	Rebend	BS 4449:1997 (withdrawn) BS 4449:2005+A2:2009	A
	Tensile	BS 4449:1997 (withdrawn) BS 4449:2005+A2:2009 ASTM A615/A615M-13	A
	Fatigue	BS 4449:1997 Amd't1 (withdrawn) BS 4449:2005+A2:2009 BS 6744:2001+A2 2009	A
Carbon steel bars for the reinforcement of concrete (cont'd)	Projected Rib Area (Geometry)	BS 4449:1997 Amd't1 (withdrawn) BS 4449:2005+A2:2009 BS EN ISO 15630-1:2002	A
Manhole tops	Loading (up to 1000 kN)	BS EN 124:1994 BS EN 1433:2002	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Weldments	Bend, Fillet weld fracture, Hardness, Impact, Nick-break, Tensile, Macro and Microstructure and CTODexamination in accordance with specific welding codes	BS EN 287: Part 1:2011 BS EN ISO 9016 :2011 BS EN ISO 4136:2011 BS EN ISO 5173:2010+A21:2011 BS EN ISO 9015-1:2010 BS EN 1320:1997 BS EN 1321:1997 BS EN ISO 9606-2:2004 BS EN ISO 15614-1:2004+A1:2008 BS EN ISO 15614-2 :2005 AWS D1.1/D1.1M:2010 ASTM E407-07 API 1104-20th edition. 2005 ASME IX-10 BS 4515-1:2009 BS 4515-2:1999 BS 7448:Part 2:1997 (withdrawn) BS EN ISO 15653:2010	A
	Phase volume fraction	ASTM E562-11	A
	Ferrite content	Documented In-House Method MET 04 using Fischer Ferritscope	A
	Grain Size (by comparison)	ASTM E112-12	A
Site Sampling and Testing			

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Sampling coarse, fine and all-in aggregates - from heaps - from a lorry-load - from laid material	BS 812:Part 102:1989	D
CONCRETE- fresh	Sampling fresh concrete on site	BS 1881:Part 101:1983 ASTM C172/C172M-14	D
	Sampling from initial discharge (slump test)	BS 1881:Part 102:1983	D
	Slump	BS 1881:Part 102:1983 ASTM C143/C143M-12	D
	Sampling fresh concrete on site	BS EN 12350-1: 2009	D
	Slump	BS EN 12350-2: 2009	D
	Temperature	ASTM C1064/C1064M-12 BS 5328: Part 4: 1990	D
CONCRETE - hardened	Coring	BS 1881:Part 120:1983	D
	Sampling of concrete by dust drilling	Documented In-House Method No. TP005	D
CONCRETE - reinforced	Location of reinforcement	BS 1881:Part 204:1988	D

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	In-situ density – sand replacement method (large pouring cylinder)	BS 1377:Part 9:1990	D
	Density and unit weight of soil in place by the sand-cone method	ASTM D1556-07	D
END			

Al Futtaim EXOVA LTD. – Dubai Approved List

Location details		Activity	Location code
Address Al Futtaim Exova LLC Plot 598-221 Dubai Investments Park Jebel Ali Dubai United Arab Emirates	**Local contact** Mr R Summers Tel: +971-4-8851001 Fax: +971-4-8854004 E-Mail: middle.east@exova.com	Aggregates - Physical tests Concrete - Physical & Mechanical tests Soils - Physical & Mechanical tests Metals & Weldments - Mechanical tests Environmental Samples - Chemical tests	A
Address Al Futtaim Exova LLC Cladding Division Plot 597-451 Dubai Investments Park Jebel Ali Dubai United Arab Emirates	**Local contact** Mr M Kumar Tel: +971-4-8850221 Fax: +971-4-8851892 E-Mail: middle.east@exova.com	Cladding & Curtain Walling Systems - Physical tests	C
Address Al Futtaim Exova LLC Acoustics Laboratory Dubai Investments Park Jebel Ali Dubai United Arab Emirates	**Local contact** Mr P Cope Tel: +971-4-8850221 Fax: +971-4-8851892 E-Mail: middle.east@exova.com	Laboratory measurement of airborne sound insulation of a building elements _ Block / partition walls, doors, windows, facades	D
Address Commercial and Industrial Premises		Cladding & Curtain Walling Systems - Physical tests Aggregates - Sampling Concrete - Sampling Soils - Sampling	C & I

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Accredited Activity

Analytical Chemical Analysis

Building Performance Testing

Building Performance Site Testing

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Site Sampling and Testing

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
LEACHATES WATERS - raw and potable WATERS - effluent, leachate and groundwater WASTE WATERS - untreated and treated domestic and industrial waste water SALINE WATERS	Determination of "total" metals including: Aluminium Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Cobalt Copper Chromium Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Phosphorus Potassium Selenium Silicon Sodium Silver Strontium Thallium Tin Titanium	USEPA 3030 and 3120B/ Documented In-house method CHEM 1006 DXB using ICP-OES techniques	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Vanadium Zinc		
Potable Waters	Bromate Organo Chlorine Pesticides (OCP) alpha BHC beta BHC Aldrin Heptachlor Heptachlor epoxide Alpha Chlordane Gamma Chlordane Alpha Endosulfan p,p'-DDE Dieldrin Endrin p,p'-DDD beta Endosulfan Endrin aldehyde Endosulfan sulphate p,p'-DDT Endrin ketone Methoxychlor	USEPA 300.1/ Documented In-house method CHEM 3020 DXB by ion chromatography EPA 608 Documented In-house method CHEM 4313 DXB by GC-ECD	A A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Waters	Volatile Organic Compounds (VOC's) Dichlorodifluoromethane Chloromethane Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane 1,1-Dichloroethene Methylene Chloride trans-1,2 Dichloroethene 1,1,-Dichloroethane cis-1,2,-Dichloroethene 2,2,-Dichloropropane Bromochloromethane Chloroform Carbon tetrachloride 1,1,1-Trichloroethane 1,1-Dichloropropene Benzene Volatile Organic Compounds (VOC's) (cont'd) 1,2-Dichloroethane Trichloroethene 1,2-Dichloropropane Bromodichloromethane Dibromomethane	EPA 5021A Documented In-house method CHEM 4051 DXB by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Waters (cont'd)	cis-1,3-Dichloropropene Toluene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene Chlorodibromomethane Ethylene Dibromide 1,3-Dichloropropane Ethylbenzene 1,1,1,2-Tetrachloroethane Chlorobenzene m,p--Xylene o-Xylene Bromoform Styrene Isopropylbenzene Bromobenzene n-Propylbenzene 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane 1,3,5-trimethylbenzene 2-Chlorotoluene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 4-Isopropyltoluene 1,3-Dichlorobenzene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	EPA 5021A Documented In-house method CHEM 4051 DXB by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Waters (cont'd)	Polycyclic Aromatic Hydrocarbon (PAH) Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoroanthene Pyrene Cyclopenta(cd)pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[e]pyrene Benzo[a]pyrene Indeno(1,2,3-c,d)pyrene Dibenz[a,h]anthracene Benzo[g,h,i] perylene Anthanthrene	EPA 625 Documented In-house method CHEM 4413 DXB by GC-MS	A
	Volatile Petroleum Hydrocarbons C5 to C10 (VPH)	EPA 5021A Documented In-house method CHEM 4123 DXB by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Benzene, Toluene, Ethyl Benzene o-Xylenes p-Xylenes m-Xylenes (BTEX)	EPA 8015M Documented In-house method CHEM 4113 DXB by GC-FID	A
Soils & Sand Matrices	Volatile Organic Compounds (VOC's) Dichlorodifluoromethane Chloromethane Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane 1,1-Dichloroethene Methylene Chloride trans-1,2 Dichloroethene 1,1,-Dichloroethane cis-1,2,-Dichloroethene 2,2,-Dichloropropane Bromochloromethane Chloroform Carbon tetrachloride 1,1,1-Trichloroethane 1,1-Dichloropropene Benzene 1,2-Dichloroethane Trichloroethene	EPA 8260B Documented In-house method CHEM 4051 DXB by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	1,2-Dichloropropane Bromodichloromethane Dibromomethane cis-1,3-Dichloropropene Toluene trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene Chlorodibromomethane Ethylene Dibromide 1,3-Dichloropropane Ethylbenzene 1,1,1,2-Tetrachloroethane Chlorobenzene m,p--Xylene o-Xylene Bromoform Styrene Isopropylbenzene Bromobenzene n-Propylbenzene 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane 1,3,5-trimethylbenzene Volatile Organic Compounds (VOC's) 2-Chlorotoluene 4-Chlorotoluene		

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Soils and Sand Matrices (cont'd)	tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 4-Isopropyltoluene 1,3-Dichlorobenzene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	EPA 8260B Documented In-house method CHEM 4051 DXB by GC-MS	A
	Polycyclic Aromatic Hydrocarbon (PAH) Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoroanthene Pyrene Cyclopenta(cd)pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene	EPA 8270C Documented In-house method CHEM 4413 DXB by GC-MS	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Benzo[a]pyrene Indeno(1,2,3-c,d)pyrene Dibenz[a,h]anthracene Benzo[g,h,i] perylene Anthanthrene	EPA 8270C Documented In-house method CHEM 4413 DXB by GC-MS	A
	Extractable Petroleum Hydrocarbons (EPH) [(Total Petroleum Hydrocarbons (TPH)]	EPA 8015 Documented In-house method CHEM 4133 DXB by GC-FID	A
Soils and Sand Matrices (cont'd)	Benzene, Toluene, Ethyl Benzene o-Xylenes p-Xylenes m-Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE)	EPA 8260B Documented In-house method CHEM 4123 DXB by GC-MS	A
	Volatile Petroleum Hydrocarbons C5 to C10 (VPH) Benzene, Toluene, Ethyl Benzene o-Xylenes p-Xylenes m-Xylenes (BTEX)	EPA 8015 Documented In-house method CHEM 4113 DXB by GC-FID	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Potable and Saline Waters	Determination of Anions including: Nitrite Nitrate Ammonia	EPA 353.2 EPA 350.1 EPA 365.1 Documented In-house method CHEM 3022 DXB by Skalar FIA	A
Potable and Saline Waters, Soils and Sand Matrices)	Determination of Anions including: Fluoride Chloride Bromide Nitrite Nitrate Sulphate	EPA 300 Documented In-house method CHEM 3022B DXB by Ion Chromatography	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SEDIMENTS SLUDGES SOILS	Determination of "total" metals including: Arsenic Antimony Barium Cadmium Cobalt Copper Chromium Iron Lead Manganese Nickel Phosphorus Selenium Vanadium Zinc	Documented In-house Method CHEM 1012 by ICP-OES	A

End of Section

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Building Performance Testing			
WINDOWS, DOORS and CURTAIN WALLS	Rate of air leakage	ASTM E283-04	C
	Wind resistance	ASTM E330-02	C
	Static water penetration	ASTM E331-00	C
	Dynamic water penetration	AMMA 501.1:2005	C
	Hose test	AMMA 501.2:2009	C
PARTITIONS INCLUDING MATCHING LININGS	Structural Tests:		
	Partition Stiffness	BS 5234-2:1992 Annex A	C
	Surface damage by small hard body impact	BS 5234-2:1992 Annex B	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Resistance to damage by impact from a large soft body	BS 5234-2:1992 Annex C	C
	Resistance to perforation by small hard body impact	BS 5234-2:1992 Annex D	C
	Resistance to structural damage by multiple impacts from a large soft body	BS 5234-2:1992 Annex E	C
	Door slamming	BS 5234-2:1992 Annex F	C
	Crowd pressure	BS 5234-2:1992 Annex G	C
	Lightweight anchorage pull-out	BS 5234-2:1992 Annex H	C
	Lightweight anchorage pull-down	BS 5234-2:1992 Annex J	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Heavyweight anchorage – eccentric downward loading test (wash basin)	BS 5234-2:1992 Annex K	C
	Heavyweight anchorage – eccentric downward loading test (high level wall cupboard)	BS 5234-2:1992 Annex I	C
PANELS FOR BUILDING CONSTRUCTION	Strength Tests:		
	Compressive load	ASTM E72-10	C
	Tensile load	ASTM E72-10	C
	Transvers load – specimen horizontal	ASTM E72-10	C
	Concentrated Load	ASTM E72-10	C
	Racking load – evaluation of sheathing materials on a standard wood frame	ASTM E72-10	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Racking load – evaluation of sheathing materials (wet) on a standard wood frame	ASTM E72-10	C
BUILDING ELEMENTS Separating Elements including block / partition walls, doors, windows and facade constructions	Acoustic Test Laboratory measurements of airborne sound insulation of building elements The property measured is the Sound Reduction Index	BS EN ISO 140-3:1995 ISO 717-1:1996 AS1191-2002 ASTM E90-09	D

End of Section

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Building Performance Site Testing			
WINDOWS AND DOORS	Hose test	AMMA 501.2:2009	C & I
	Air leakage	ASTM E783-02(2010)	C & I
WINDOWS, SKYLIGHTS, DOORS and CURTAIN WALLS	Water penetration	ASTM E1105-00(2008)	C & I

End of Section

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Construction Materials Testing			
AGGREGATES	Particle density and water absorption for aggregate 10mm nominal size and smaller	BS 812:Part 2:1995	A
	Particle density and water absorption for aggregate all larger than 10mm	BS 812:Part 2:1995	A
	Particle density and water absorption for aggregate between 40mm and 5mm	BS 812:Part 2:1995	A
	Particle size distribution - washing and sieving	BS 812:Part 103 Section 103-1: 1985	A
	Particle size distribution - dry sieving	BS 812:Part 103 Section 103-1: 1985	A
	Flakiness index	BS 812:Part 105:Section 105.1: 1989	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Elongation index	BS 812:Part 105:Section 105.2: 1990	A
	Shell content	BS 812:Part 106:1985	A
	Moisture content - oven dry method	BS 812:Part 109:1990	A
	Clay lumps and friable particles in aggregates	ASTM C142-97(04)	A
CONCRETE- fresh	Making and curing cylindrical specimens in the laboratory	ASTM C192-07	A
CONCRETE - hardened	Density	BS 1881:Part 114:1983	A
	Compressive strength of cubes - including curing *(Forces from 30 to 3000 kN)*	BS 1881:Part 116:1983 BS 1881:Part 111:1983	A
	Water absorption	BS 1881:Part 122:1983	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
CONCRETE – hardened (cont'd)	Initial surface absorption	BS 1881 Part 208:1996	A
	Shape and dimension of specimens	BS EN 12390-1: 2000	A
	Compressive strength of cubes - including curing *(Forces from 30 to 3000 kN)*	BS EN 12390-2: 2009 BS EN 12390-3: 2009	A
	Density	BS EN 12390-7: 2009	A
	Depth of penetration of water under pressure	BS EN 12390-8: 2009	A
	Compressive strength of cores *(Forces from 60 to 3000kN)*	BS EN 12504-1:2009	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Compressive strength of cylindrical specimens – including curing *(Forces from 60 to 3000kN)*	ASTM C39-10	A
	Density	ASTM C39-10	A
	Rapid chloride permeability	ASTM C1202-10	A
	Moisture content - oven drying method	BS 1377:Part 2:1990	A
	Particle size distribution - wet sieving	BS 1377:Part 2:1990	A
	Particle size distribution - dry sieving	BS 1377:Part 2:1990	A
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377:Part 4:1990	A
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377:Part 4:1990	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	CBR (California Bearing Ratio) of laboratory-compacted soils *(Forces from 2 to 40kN)*	BS 1377:Part 4:1990	A
End of Section			
Metallurgical and Mechanical			
Iron, Steels and other Ferrous Metals	Vickers (HV5 and HV10)	BS EN ISO 6507-1:2005 ASTM E384-11	A
	Charpy impact (in the temperature range 77K to ambient) – including Lateral Expansion	ASTM E23-07a ASTM A370-11	A
	Tensile at ambient temperature (forces up to 2000 kN)	BS EN ISO 6892-1:2009 ASTM E8/E8M-11 ASTM A370-11 API 5L 44th Edition 2007	A
	Phase volume fraction	ASTM E562-11	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Carbon steel bars for the reinforcement of concrete	Grain Size	ASTM E112-10	A
	Inclusion Content	ASTM E45-11	A
	Microstructural Assessment	DIHM E-E-OP-X-ME-X-MD001	A
	Bend	BS 4449:1988 (withdrawn) ASTM A615/A615M-09b	A
	Rebend	BS 4449:1997 Amd't1 (withdrawn) BS 4449:2005 +A2:2009	A
	Tensile	BS 4449:1997 Amd't1 (withdrawn) BS 4449: 2005 +A2:2009 ASTM A615/A615M-09b	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Weldments	Bend, Fillet weld fracture, Hardness, Impact, Nick-break, Tensile, Macro- and Micro-examination in accordance with specific welding codes	BS EN 287: Part 1:2011 BS EN ISO 9016:2011 BS EN ISO 4136:2011 BS EN ISO 5173:2010 BS EN ISO 9015-1:2010 BS EN 1320:1997 BS EN 1321:1997 BS EN ISO 9606-2:2004 BS EN ISO 15614-1:2004 +A1:2008 BS EN ISO 15614-2 :2005 AWS D1.1/D1.1M-2008 ASTM E407-07 API 1104-20th edition. 2005 ASME IX-10 BS 4515-1:2009 BS 4515-2:1999 BS 7448:Part 2:1997 (superseded) BS EN ISO 15653:2010	A

End of Section

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Site Sampling and Testing			
AGGREGATES	Sampling coarse, fine and all-in aggregates - from heaps	BS 812:Part 102:1989	C & I
CONCRETE- fresh	Slump	BS 1881:Part 102:1983	C & I
	Air content – method B	BS 1881:Part 106:1983	C & I
	Sampling fresh concrete on site	ASTM C172-08	C & I
	Density	ASTM C138-08	C & I
	Temperature	ASTM C1064/C1064M-08	C & I
	Slump flow	ASTM C1611/C1611M-05	C & I
CONCRETE - hardened	Making test cubes	BS 1881:Part 108:1983	C & I

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	In-situ density – sand replacement method (large pouring cylinder)	BS 1377:Part 9:1990	C & I
	In-situ density - nuclear method	BS 1377:Part 9:1990	C & I
	In-situ moisture density - nuclear method	BS 1377:Part 9:1990	C & I
END			

Inspectorate International Ltd. – Dubai

Approved List

No.	Test	Standard
1	pH	APHA/AWWA 4500-H+B 22nd Edition 2012
2	Electrical Conductivity	APHA/AWWA 2510-B 22nd Edition 2012
3	Total Suspended Solids (TSS)	APHA/AWWA 2540-D 22nd Edition 2012
4	Total Dissolved Solids(TDS)	APHA/AWWA 2540-C 22nd Edition 2012
5	Biochemical Oxygen Demands (BOD)	APHA/AWWA 22nd Edition 2012.Test-5210B & 4500-OC
6	Chemical Oxygen Demands (COD)	APHA/AWWA 22nd Edition 2012 Test-5220 D
7	Nitrate- Nitrogen	APHA/AWWA 22nd Edition 2012Test-4500-NO3 E
8	Nitrite – Nitrogen	APHA 4110-B, 22nd Edition 2012
9	Oil & grease	APHA/AWWA 5520 B 22nd Edition 2012
10	Chloride	APHA/AWWA 4500-Cl B, 22nd Edition 2012
11	Chloride	APHA 4110-B, 22nd Edition 2012
12	Phosphorous (total)	APHA 4110-B, 22nd Edition 2012
13	Sulphate	APHA/AWWA 4500-SO4 C &E, 22nd Edition 2012
14	Sulphate	APHA 4110-B, 22nd Edition 2012
15	Fluoride	APHA/AWWA 4500F, 22nd Edition 2012
16	Iron	APHA 3120-B 22nd Edition 2012

No.	Test	Standard
17	Total Hardness	APHA/AWWA 2340-C, 22nd Edition 2012
18	Magnesium Concentration by calculation	APHA/AWWA 3500-Mg B- 22nd Edition 2012
19	Magnesium	APHA 3120-B 22nd Edition 2012
20	Calcium	APHA/AWWA 3500-Ca B, 22nd Edition 2012
21	Sodium	APHA 3120-B, 22nd Edition 2012
22	Potassium	APHA 3120-B, 22nd Edition 2012
23	Bromide	APHA 4110-B, 22nd Edition 2012
24	Total Alkalinity	APHA/AWWA 2320-B, 22nd Edition 2012
25	Phenolphthalein Alkalinity	APHA/AWWA 2320-B, 22nd Edition 2012
26	Bicarbonate	APHA 2320-B, 22nd Edition 2012
27	Carbonate	APHA 2320-B, 22nd Edition 2012
28	Heavy Metals Concentrations	APHA/ SM/ 3120 B Heavy Metal Analysis by ICP APHA/ SM/ 3110 B Heavy Metal
29	Total Coliforms	APHA/AWWA 9222B & 9222D, 22nd Edition 2012
30	Fecal Coliform	APHA/AWWA 9222D, 22nd Edition 2012
31	E-Coli	APHA/AWWA 9223B& G, 22nd Edition 2012

No.	Test	Standard
32	Nematodes (Helminths) Eggs	WHO, Lab manual of Parasitological and Bacteriological Techniques, 1996
33	Microscopic Examination	
34	Pseudomonas Aeruginosa	APHA 9213-E 22nd Edition 2012
35	Faecal Streptococcus	APHA 9230-C 22nd Edition 2012
36	Legionella	BS 7592; BS 6068- 4.18 / BS EN ISO 11731-2 BS 6068-4.12 / ISO 11731 RT PCR technique (Kit method)
37	Viruses	RT – PCR Methodology

Australian Laboratory Services – Dammam, KSA

Approved List

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
1	Soil / Water	pH	EA002 / EA005	SM (21ST Edition) 4500 H+ - B
2	Water / Soil	Sodium Absorption Ratio (SAR)	EA006	APHA 3120 Ca, Mg, Na-A
3	Soil	Calcium Carbonate Equivalent	EA008	ASTM C602.90
4	Soil	Carbonate (CO_3)	EA008S	ASTM D4373- 2 (2007)
5	Soil / Water	Conductivity	EA010	SM (21ST EDITION) 2510 B
6	Water	Total Dissolved Solids (TDS)	EA015	SM (21ST EDITION) 2540 C
7	Water	Salinity (non-Marine Estimated TDS)	EA016	SM (21ST EDITION) 2510 B
8	Water	Suspended Solids (TSS)	EA025	SM (21ST EDITION) 2540 D
9	Soil	Total Solids (TS)	EA030	EA030
10	Water	Total Solids (TS)	EA030	SM (21ST EDITION) 2540 B
11	Water	Settleable Solids	EA034	SM (21ST EDITION) 2540 F
12	Water	Fixed and/or Volatile Solids	EA035	SM (21ST EDITION) 2540 E
13	Water	Fixed and/or Volatile Suspended Solids	EA036	SM (21ST EDITION) 2540 E
14	Water	Colour (Apparent)	EA040	SM (21ST EDITION) 2120 B
15	Water	Colour (True)	EA041	SM (21ST EDITION) 2120 B
16	Water	Turbidity	EA045	SM (21ST EDITION) 2130 B
17	Water	Specific Gravity	EA050	ASTM D 1429-89
18	Soil	Bulk Density	EA051	EA051
19	Water	Moisture Content	EA055	EA055
20	Water	Total Hardness as $CaCO_3$	EA065	SM (21ST EDITION) 2340 B
21	Water	Calcium Hardness as $CaCO_3$	EA066	SM (21ST EDITION) 2340 B
22	Water	Magnesium Hardness as $CaCO_3$	EA069	SM (21ST EDITION) 2340 B
23	Water	Langelier's Index (LSI)	EA071	ASTM D3739-06 (2006)
24	Water	Redox Potential	EA075	SM (21ST EDITION) 2580
25	Water	Resistivity	EA080	SM (21ST EDITION) 2510
26	Soil	Loss on Ignition (LOI)	EA101	AS2853:1996
27	Water	Temperature	EA116	SM (21ST EDITION) 2550
28	Water	Floatables	EA118	SM (21ST EDITION) 2530
29	Soil	Particle Size Analysis	EA150	ASTM D 422

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
30	Water	Free and Total CO2	EA165	SM (21ST EDITION) 4500-CO_2
31	Water	Taste	EA200	SM (21ST EDITION) 2160 B
32	Water	Odor	EA201	SM (21ST EDITION) 2150 B
33	Water	Inorganic Disinfection By-Products (Bromide, Bromate, Chlorate and Chlorite) by Ion Chromatography	ED013	USEPA 300.1 B
34	Water	Hydroxide Alkalinity as $CaCO_3$	ED037	SM (21ST EDITION) 2320 B
35	Water	Carbonate Alkalinity as $CaCO_3$	ED037	SM (21ST EDITION) 2320 B
36	Water	Bicarbonate Alkalinity as $CaCO_3$	ED037	SM (21ST EDITION) 2320 B
37	Water	Total Alkalinity as $CaCO_3$	ED037	SM (21ST EDITION) 2320 B
38	Water	Acidity as $CaCO_3$	ED038	SM (21ST EDITION) 2310 B
39	Water	Dissolved Sulphur (ICPAES) as SO_4	ED040	USEPA 6010 ICP/AES
40	Soil	Sulphate – Total as SO_4	ED040T	USEPA 6010 ICP/AES
41	Soil / Water	Chloride	ED045	SM (21ST EDITION) 4500-Cl^--B
42	Soil / Water	Calcium (Ca)	ED093	USEPA 6010 ICP/AES
43	Soil / Water	Magnesium (Mg)	ED093	USEPA 6010 ICP/AES
44	Soil / Water	Potassium (K)	ED093	USEPA 6010 ICP/AES
45	Soil / Water	Sodium (Na)	ED093	USEPA 6010 ICP/AES
46	Soil / Water	Aluminium (Al)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
47	Soil / Water	Antimony (Sb)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
48	Soil / Water	Arsenic (As)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
49	Soil / Water	Barium (Ba)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
50	Soil / Water	Beryllium (Be)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
51	Soil / Water	Bismuth (Bi)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
52	Soil / Water	Boron (B)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
53	Soil / Water	Cadmium (Cd)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
54	Soil / Water	Caesium (Cs)	EG020	USEPA 6020 ICP/MS
55	Soil / Water	Cerium (Ce)	EG020	USEPA 6020 ICP/MS
56	Soil / Water	Chromium (Cr)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
57	Soil / Water	Cobalt (Co)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
58	Soil / Water	Copper (Cu)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
59	Soil / Water	Dysprosium (Dy)	EG020	USEPA 6020 ICP/MS
60	Soil / Water	Erbium (Er)	EG020	USEPA 6020 ICP/MS
61	Soil / Water	Europium (Eu)	EG020	USEPA 6020 ICP/MS
62	Soil / Water	Gadolinium (Gd)	EG020	USEPA 6020 ICP/MS
63	Soil / Water	Gallium (Ga)	EG020	USEPA 6020 ICP/MS
64	Soil / Water	Hafnium (Hf)	EG020	USEPA 6020 ICP/MS
65	Soil / Water	Holmium (Ho)	EG020	USEPA 6020 ICP/MS
66	Soil / Water	Indium (In)	EG020	USEPA 6020 ICP/MS
67	Soil / Water	Iron (Fe)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
68	Soil / Water	Lanthanum (La)	EG020	USEPA 6020 ICP/MS
69	Soil / Water	Lead (Pb)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
70	Soil / Water	Lithium (Li)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
71	Soil / Water	Lutetium (Lu)	EG020	USEPA 6020 ICP/MS
72	Soil / Water	Manganese (Mn)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
73	Soil / Water	Mercury (Hg)	EG020	USEPA 6020 ICP/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
74	Soil / Water	Molybdenum (Mo)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
75	Soil / Water	Neodymium (Nd)	EG020	USEPA 6020 ICP/MS
76	Soil / Water	Nickel (Ni)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
77	Soil / Water	Phosphorus	EG005	USEPA 6010 ICP/AES
78	Soil / Water	Praseodymium (Pr)	EG020	USEPA 6020 ICP/MS
79	Soil / Water	Rubidium (Rb)	EG020	USEPA 6020 ICP/MS
80	Soil / Water	Samarium (Sm)	EG020	USEPA 6020 ICP/MS
81	Soil / Water	Selenium (Se)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
82	Soil / Water	Silicon (Si)	EG005	USEPA 6010 ICP/AES
83	Soil / Water	Silica (SiO2)	EG005	USEPA 6010 ICP/AES
84	Soil / Water	Silver (Ag)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
85	Soil / Water	Strontium (Sr)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
86	Soil / Water	Sulfur (S)	EG005	USEPA 6010 ICP/AES
87	Soil / Water	Tellurium (Te)	EG020	USEPA 6020 ICP/MS
88	Soil / Water	Terbium (Tb)	EG020	USEPA 6020 ICP/MS
89	Soil / Water	Thallium (Tl)	EG020	USEPA 6020 ICP/MS
90	Soil / Water	Thorium (Th)	EG020	USEPA 6020 ICP/MS
91	Soil / Water	Thulium (Tm)	EG020	USEPA 6020 ICP/MS
92	Soil / Water	Tin (Sn)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
93	Soil / Water	Titanium (Ti)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
94	Soil / Water	Uranium (U)	EG020	USEPA 6020 ICP/MS
95	Soil / Water	Vanadium (V)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
96	Soil / Water	Ytterbium (Yb)	EG020	USEPA 6020 ICP/MS
97	Soil / Water	Yttrium (Y)	EG020	USEPA 6020 ICP/MS
98	Soil / Water	Zinc (Zn)	EG005 / EG020	USEPA 6010 ICP/AES - USEPA 6020 ICP/MS
99	Soil / Water	Zirconium (Zr)	EG020	USEPA 6020 ICP/MS
100	Soil / Water	Mercury (Hg)	EG035	SM (21ST EDITION) 3112 Hg-B CV/FIMS
101	Soil / Water	Trivalent Chromium	EG049	SM (21ST EDITION) 3500 Cr-A & B
102	Soil / Water	Hexavalent Chromium	EG050	SM (21ST EDITION) 3500 Cr-B
103	Water	Iron - Ferrous	EG051	SM (21ST EDITION)3500 Fe-B
104	Water	Silica (SiO2)	EG052	USEPA 6010 ICP/AES
105	Water	Ferric Iron- Dissolved	EG053	SM (21ST EDITION) 3500 Fe-B
106	Water	Total Residual Chlorine	EK010	SM (21st EDITION) 4500-Cl^-
107	Water	Free Chlorine	EK011	SM (21st EDITION) 4500 Cl^-
108	Soil / Water	Free Cyanide	EK025	SM (21ST EDITION) 4500 CN-C&N
109	Soil / Water	Total Cyanide	EK026	SM (21ST EDITION) 4500 CN-C&N
110	Soil / Water	Weak Acid Dissociable Cyanide (WAD)	EK028	SM (21ST EDITION) 4500 CN-C&N
111	Soil / Water	Fluoride	EK040	SM (21ST EDITION) 4500-F^-C
112	Soil / Water	Ammonia as N	EK055	SM (21ST EDITION) 4500 NH_3- - H
113	Soil / Water	Nitrite as N	EK057	SM (21ST EDITION) 4500 NO_2- - I
114	Soil / Water	Nitrate as N	EK058	SM (21ST EDITION) 4500 NO_3- - I
115	Soil / Water	Nitrate + Nitrite as N (NOx)	EK059	SM (21ST EDITION) 4500 NO_3- - I

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
116	Soil / Water	Organic Nitrogen as N	EK060	SM (21ST EDITION) B & H
117	Soil / Water	Total Kjeldahl Nitrogen (TKN) as N	EK061	SM (21ST EDITION) 4500 Norg - D
118	Soil / Water	Total Nitrogen as N (includes TKN & NOx)	EK062	SM (21ST EDITION) 4500 Norg/NO_3
119	Soil / Water	Total Phosphorus as P	EK067	SM (21ST EDITION) 4500 P - H
120	Soil / Water	Reactive Phosphorus as P	EK071	SM (21ST EDITION) 4500 P - G
121	Soil / Water	Un-ionised Hydrogen Sulfide	EK084	SM (21ST EDITION) 4500-S^2-H
122	Water / Soil	Sulphide as S	EK085	SM (21ST EDITION) 4500 S^{2-} - D
123	Water	Sulphite as SO_3	EK086	SM (21ST EDITION) 4500-SO_3^{2-} D
124	Water	Thiosulfate as S2O3 2-	EK087	EK087
125	Water	Dissolved Organic Carbon (DOC)	EP002	SM (21ST EDITION) 2320 B
126	Soil	Organic Matter	EP004	AS1289.4.1.1 - 1997
127	Soil	Total Organic Carbon (TOC), Calculated	EP004	AS1289.4.1.1 - 1997
128	Water	Total Organic Carbon (TOC)	EP005	SM (21ST EDITION) 2320 B
129	Water	Total Inorganic Carbon (TIC)	EP006	SM (21ST EDITION) 2320 B
130	Water	Total Carbon (TC)	EP007	SM (21ST EDITION) 2320 B
131	Water	Chlorophyll a	EP008	SM (21ST EDITION) 10200 H
132	Water	Formaldehyde	EP010	ASTM D6303-98
133	Water	Total Petroleum Hydrocarbon (Gravimetric)	EP015	SM (21ST EDITION) 5520 B
134	Water	Oil and Grease	EP020	SM (21ST EDITION) 5520 B
135	Soil	Oil and Grease (HEM)	EP020-S	USEPA 9071B
136	Water	Dissolved Oxygen	EP025	SM (21ST EDITION) 4500 O
137	Soil / Water	Chemical Oxygen Demand (COD)	EP026	SM (21ST EDITION) 5220 B
138	Water	Biochemical Oxygen Demand (BOD)	EP030	SM (21ST EDITION) 5220 B

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
139	Water	Phenolics – Total	EP035	SM (21ST EDITION) 5530 B&D
140	Water	Anionic as MBAS	EP050	SM (21ST EDITION) 5540 B&C
141	Soil / Water	Polychlorinated biphenyls	EP066	USEPA 8270 GC/MS
142	Soil / Water	Aldrin	EP068A	USEPA 8270 GC/MS
143	Soil / Water	Alpha-BHC (Lindane)	EP068A	USEPA 8270 GC/MS
144	Soil / Water	Beta & gamma-BHC	EP068A	USEPA 8270 GC/MS
145	Soil / Water	Chlordane-cis	EP068A	USEPA 8270 GC/MS
146	Soil / Water	Chlordane-trans	EP068A	USEPA 8270 GC/MS
147	Soil / Water	DDD	EP068A	USEPA 8270 GC/MS
148	Soil / Water	DDE	EP068A	USEPA 8270 GC/MS
149	Soil / Water	DDT	EP068A	USEPA 8270 GC/MS
150	Soil / Water	Delta-BHC	EP068A	USEPA 8270 GC/MS
151	Soil / Water	Dieldrin	EP068A	USEPA 8270 GC/MS
152	Soil / Water	Endosulphan 1	EP068A	USEPA 8270 GC/MS
153	Soil / Water	Endosulphan 2	EP068A	USEPA 8270 GC/MS
154	Soil / Water	Endosulphan sulphate	EP068A	USEPA 8270 GC/MS
155	Soil / Water	Endrin	EP068A	USEPA 8270 GC/MS
156	Soil / Water	Endrin aldehyde	EP068A	USEPA 8270 GC/MS
157	Soil / Water	Endrin ketone	EP068A	USEPA 8270 GC/MS
158	Soil / Water	Heptachlor	EP068A	USEPA 8270 GC/MS
159	Soil / Water	Heptachlor epoxide	EP068A	USEPA 8270 GC/MS
160	Soil / Water	Hexachlorobenzene (HCB)	EP068A	USEPA 8270 GC/MS
161	Soil / Water	Methoxychlor	EP068A	USEPA 8270 GC/MS
162	Soil / Water	Azinphos-methyl	EP068B	USEPA 8270 GC/MS
163	Soil / Water	Bromophos-ethyl	EP068B	USEPA 8270 GC/MS
164	Soil / Water	Carbophenothion	EP068B	USEPA 8270 GC/MS
165	Soil / Water	Chlorfenvinphos E	EP068B	USEPA 8270 GC/MS
166	Soil / Water	Chlorfenvinphos Z	EP068B	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
167	Soil / Water	Chlorpyrifos	EP068B	USEPA 8270 GC/MS
168	Soil / Water	Chlorpyrifos-methyl	EP068B	USEPA 8270 GC/MS
169	Soil / Water	Demetron-S-methyl	EP068B	USEPA 8270 GC/MS
170	Soil / Water	Diazinon	EP068B	USEPA 8270 GC/MS
171	Soil / Water	Dichlorvos	EP068B	USEPA 8270 GC/MS
172	Soil / Water	Dimethoate	EP068B	USEPA 8270 GC/MS
173	Soil / Water	Ethion	EP068B	USEPA 8270 GC/MS
174	Soil / Water	Fenamiphos	EP068B	USEPA 8270 GC/MS
175	Soil / Water	Fenthion	EP068B	USEPA 8270 GC/MS
176	Soil / Water	Malathion	EP068B	USEPA 8270 GC/MS
177	Soil / Water	Monocroptophos	EP068B	USEPA 8270 GC/MS
178	Soil / Water	Parathion	EP068B	USEPA 8270 GC/MS
179	Soil / Water	Parathion-methyl	EP068B	USEPA 8270 GC/MS
180	Soil / Water	Pirimphos-ethyl	EP068B	USEPA 8270 GC/MS
81	Soil / Water	Prothiofos	EP068B	USEPA 8270 GC/MS
182	Soil / Water	Atrazine	EP068C	USEPA 8270 GC/MS
183	Soil / Water	Simazine	EP068C	USEPA 8270 GC/MS
184	Soil / Water	TPH (C6-C9)	EP080	USEPA 8260 P&T/GC/MS
185	Soil / Water	TPH (C10-C14)	EP071	USEPA 8015 (M) GC/FID
186	Soil / Water	TPH (C15-C28)	EP071	USEPA 8015 (M) GC/FID
187	Soil / Water	TPH (C29-C36)	EP071	USEPA 8015 (M) GC/FID
188	Soil / Water	TPH (C37-C40)	EP071	USEPA 8015 (M) GC/FID
189	Soil / Water	Aliphatic / Aromatic TPH (C5-C6)	EP081	USEPA 8260 P&T/GC/MS
190	Soil / Water	Aliphatic / Aromatic TPH (C6-C8)	EP070	USEPA 8260 P&T/GC/MS
191	Soil / Water	Aliphatic / Aromatic TPH (C8-C10)	EP070	USEPA 8260 P&T/GC/MS
192	Soil / Water	Aliphatic / Aromatic TPH (C10-C12)	EP070	USEPA 8015 GC/FID
193	Soil / Water	Aliphatic / Aromatic TPH (C12-C16)	EP070	USEPA 8015 GC/FID

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
194	Soil / Water	Aliphatic / Aromatic TPH (C16-C21)	EP070	USEPA 8015 GC/FID
195	Soil / Water	1,2,4-Trimethylbenzene	EP074	USEPA 8260 P&T/GC/MS
196	Soil / Water	1,3,5-Trimethylbenzene	EP074	USEPA 8260 P&T/GC/MS
197	Soil / Water	Benzene	EP074 / EP080	USEPA 8260 P&T/GC/MS
198	Soil / Water	Ethylbenzene	EP074 / EP080	USEPA 8260 P&T/GC/MS
199	Soil / Water	Isopropylbenzene	EP074	USEPA 8260 P&T/GC/MS
200	Soil / Water	m-Xylene	EP074 / EP080	USEPA 8260 P&T/GC/MS
201	Soil / Water	n-Butylbenzene	EP074	USEPA 8260 P&T/GC/MS
202	Soil / Water	n-Propylbenzene	EP074	USEPA 8260 P&T/GC/MS
203	Soil / Water	o-Xylene	EP074 / EP080	USEPA 8260 P&T/GC/MS
204	Soil / Water	p-Isopropyltoluene	EP074	USEPA 8260 P&T/GC/MS
205	Soil / Water	p-Xylene	EP074 / EP080	USEPA 8260 P&T/GC/MS
206	Soil / Water	sec-Butylbenzene	EP074	USEPA 8260 P&T/GC/MS
207	Soil / Water	Styrene	EP074	USEPA 8260 P&T/GC/MS
208	Soil / Water	tert-Butylbenzene	EP074	USEPA 8260 P&T/GC/MS
209	Soil / Water	Toluene	EP074 / EP080	USEPA 8260 P&T/GC/MS
210	Soil / Water	2-Butanone (MEK)	EP074	USEPA 8260 P&T/GC/MS
211	Soil / Water	2-Hexanone (MBK)	EP074	USEPA 8260 P&T/GC/MS
212	Soil / Water	2-Propanone (Acetone)	EP074	USEPA 8260 P&T/GC/MS
213	Soil / Water	4-Methyl-2-pentanone (MIBK)	EP074	USEPA 8260 P&T/GC/MS
214	Soil / Water	Vinyl Acetate	EP074	USEPA 8260 P&T/GC/MS
215	Soil / Water	1,2-Dibromoethane	EP074	USEPA 8260 P&T/GC/MS
216	Soil / Water	1,2-Dichloropropane	EP074	USEPA 8260 P&T/GC/MS
217	Soil / Water	2,2-Dichloropropane	EP074	USEPA 8260 P&T/GC/MS
218	Soil / Water	cis-1,3-Dichloropropylene	EP074	USEPA 8260 P&T/GC/MS
219	Soil / Water	trans-1,3-Dichloropropylene	EP074	USEPA 8260 P&T/GC/MS
220	Soil / Water	1,1,1,2-Tetrachloroethane	EP074	USEPA 8260 P&T/GC/MS
221	Soil / Water	1,1,1-Trichloroethane	EP074	USEPA 8260 P&T/GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
222	Soil / Water	1,1,2,2-Tetrachloroethane	EP074	USEPA 8260 P&T/GC/MS
223	Soil / Water	1,1,2-Trichloroethane	EP074	USEPA 8260 P&T/GC/MS
224	Soil / Water	1,1-Dichloro-1-propene	EP074	USEPA 8260 P&T/GC/MS
225	Soil / Water	1,1-Dichloroethane	EP074	USEPA 8260 P&T/GC/MS
226	Soil / Water	1,1-Dichloroethene	EP074	USEPA 8260 P&T/GC/MS
227	Soil / Water	1,2,3-Trichloropropane	EP074	USEPA 8260 P&T/GC/MS
228	Soil / Water	1,2-Dibromo-3-chloropropane	EP074	USEPA 8260 P&T/GC/MS
229	Soil / Water	1,2-Dichloroethane	EP074	USEPA 8260 P&T/GC/MS
230	Soil / Water	1,3-Dichloropropane	EP074	USEPA 8260 P&T/GC/MS
231	Soil / Water	Bromochloromethane	EP074	USEPA 8260 P&T/GC/MS
232	Soil / Water	Bromomethane	EP074	USEPA 8260 P&T/GC/MS
233	Soil / Water	Carbon tetrachloride	EP074	USEPA 8260 P&T/GC/MS
234	Soil / Water	Chloroethane	EP074	USEPA 8260 P&T/GC/MS
235	Soil / Water	Chloromethane	EP074	USEPA 8260 P&T/GC/MS
236	Soil / Water	cis-1,2-Dichloroethene	EP074	USEPA 8260 P&T/GC/MS
237	Soil / Water	Dibromomethane	EP074	USEPA 8260 P&T/GC/MS
238	Soil / Water	Dichlorodifluromethane	EP074	USEPA 8260 P&T/GC/MS
239	Soil / Water	Dichloromethane	EP074	USEPA 8260 P&T/GC/MS
240	Soil / Water	Hexachlorobutadiene	EP074	USEPA 8260 P&T/GC/MS
241	Soil / Water	Methylene Chloride	EP074	USEPA 8260 P&T/GC/MS
242	Soil / Water	Pentachloroethane	EP074	USEPA 8260 P&T/GC/MS
243	Soil / Water	Tetrachloroethene	EP074	USEPA 8260 P&T/GC/MS
244	Soil / Water	trans-1,2-Dichloroethene	EP074	USEPA 8260 P&T/GC/MS
245	Soil / Water	trans-1,3-Dichloropropene	EP074	USEPA 8260 P&T/GC/MS
246	Soil / Water	Trichloroethene	EP074	USEPA 8260 P&T/GC/MS
247	Soil / Water	Trichlorofluoromethane	EP074	USEPA 8260 P&T/GC/MS
248	Soil / Water	Vinyl chloride	EP074	USEPA 8260 P&T/GC/MS
249	Soil / Water	1,2,3-Trichlorobenzene	EP074	USEPA 8260 P&T/GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
250	Soil / Water	1,2,4-Trichlorobenzene	EP074	USEPA 8260 P&T/GC/MS
251	Soil / Water	1,2-Dichlorobenzene	EP074	USEPA 8260 P&T/GC/MS
252	Soil / Water	1,3-Dichlorobenzene	EP074	USEPA 8260 P&T/GC/MS
253	Soil / Water	1,4-Dichlorobenzene	EP074	USEPA 8260 P&T/GC/MS
254	Soil / Water	2-Chlorotoluene	EP074	USEPA 8260 P&T/GC/MS
256	Soil / Water	4-Chlorotoluene	EP074	USEPA 8260 P&T/GC/MS
257	Soil / Water	Bromobenzene	EP074	USEPA 8260 P&T/GC/MS
258	Soil / Water	Chlorobenzene	EP074	USEPA 8260 P&T/GC/MS
259	Soil / Water	Bromodichloromethane	EP074	USEPA 8260 P&T/GC/MS
260	Soil / Water	Bromoform	EP074	USEPA 8260 P&T/GC/MS
261	Soil / Water	Chloroform	EP074	USEPA 8260 P&T/GC/MS
262	Soil / Water	Dibromochloromethane	EP074	USEPA 8260 P&T/GC/MS
263	Soil / Water	Napthalene	EP074	USEPA 8260 P&T/GC/MS
264	Soil / Water	Methyl tert-Butyl Ether (MTBE)	EP074	USEPA 8260 P&T/GC/MS
265	Soil / Water	1,2,4-Trichlorobenzene	EP075	USEPA 8270 GC/MS
266	Soil / Water	1,2,5-Trinitrobenzene	EP075	USEPA 8270 GC/MS
267	Soil / Water	1,2-Dichlorobenzene	EP075	USEPA 8270 GC/MS
268	Soil / Water	1,3,5-Trinitrobenzene	EP075	USEPA 8270 GC/MS
269	Soil / Water	1,3-Dichlorobenzene	EP075	USEPA 8270 GC/MS
270	Soil / Water	1,4-Dichlorobenzene	EP075	USEPA 8270 GC/MS
271	Soil / Water	1-Naphthylamine	EP075	USEPA 8270 GC/MS
272	Soil / Water	2,4,5-Trichlorophenol	EP075	USEPA 8270 GC/MS
273	Soil / Water	2,4,6-Trichlorophenol	EP075	USEPA 8270 GC/MS
274	Soil / Water	2,4-Dichlorophenol	EP075	USEPA 8270 GC/MS
275	Soil / Water	2,4-Dimethylphenol	EP075	USEPA 8270 GC/MS
276	Soil / Water	2,4-Dinitrotoluene	EP075	USEPA 8270 GC/MS
277	Soil / Water	2,6-Dichlorophenol	EP075	USEPA 8270 GC/MS
278	Soil / Water	2,6-Dinotrotouluene	EP075	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
279	Soil / Water	2-Chloronaphthalene	EP075	USEPA 8270 GC/MS
280	Soil / Water	2-Chlorophenol	EP075	USEPA 8270 GC/MS
281	Soil / Water	2-Methylnaphthalene	EP075	USEPA 8270 GC/MS
282	Soil / Water	2-Methylphenol	EP075	USEPA 8270 GC/MS
283	Soil / Water	2-Nitroaniline	EP075	USEPA 8270 GC/MS
284	Soil / Water	2-Nitrophenol	EP075	USEPA 8270 GC/MS
285	Soil / Water	2-Picoline	EP075	USEPA 8270 GC/MS
286	Soil / Water	3,3-Dichlorobenzidine	EP075	USEPA 8270 GC/MS
287	Soil / Water	3-Methylcholanthrene	EP075	USEPA 8270 GC/MS
288	Soil / Water	3-Nitroaniline	EP075	USEPA 8270 GC/MS
289	Soil / Water	4-Aminobiphenyl	EP075	USEPA 8270 GC/MS
290	Soil / Water	4-Bromophenyl phenyl ether	EP075	USEPA 8270 GC/MS
291	Soil / Water	4-Chloro-3-methylphenol	EP075	USEPA 8270 GC/MS
292	Soil / Water	4-Chloroaniline	EP075	USEPA 8270 GC/MS
293	Soil / Water	4-Chlorophenyl phenyl ether	EP075	USEPA 8270 GC/MS
294	Soil / Water	4-Nitroaniline	EP075	USEPA 8270 GC/MS
295	Soil / Water	4-Nitroquinoline-N-oxide	EP075	USEPA 8270 GC/MS
296	Soil / Water	5-Nitro-o-toluidine	EP075	USEPA 8270 GC/MS
297	Soil / Water	7,12-Dimethylbenz(a)anthracene	EP075	USEPA 8270 GC/MS
298	Soil / Water	Acenaphthene	EP075	USEPA 8270 GC/MS
299	Soil / Water	Acenaphthylene	EP075	USEPA 8270 GC/MS
300	Soil / Water	Acetophenone	EP075	USEPA 8270 GC/MS
301	Soil / Water	Aldrin	EP075	USEPA 8270 GC/MS
302	Soil / Water	Alpha-BHC (Lindane)	EP075	USEPA 8270 GC/MS
303	Soil / Water	Aniline	EP075	USEPA 8270 GC/MS
304	Soil / Water	Anthracene	EP075	USEPA 8270 GC/MS
305	Soil / Water	Azobenzene	EP075	USEPA 8270 GC/MS
306	Soil / Water	Benzo(a)anthracene	EP075	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
307	Soil / Water	Benzo(a)pyrene	EP075	USEPA 8270 GC/MS
308	Soil / Water	Benzo(b)fluoranthene	EP075	USEPA 8270 GC/MS
309	Soil / Water	Benzo(ghi)perylene	EP075	USEPA 8270 GC/MS
310	Soil / Water	Benzo(k)fluoranthene	EP075	USEPA 8270 GC/MS
311	Soil / Water	Beta & gamma-BHC	EP075	USEPA 8270 GC/MS
312	Soil / Water	Bis(2-chloroethoxy)methane	EP075	USEPA 8270 GC/MS
313	Soil / Water	Bis(2-chloroethyl)ether	EP075	USEPA 8270 GC/MS
314	Soil / Water	Bis(2-ethylhexyl)phthalate (DEHP)	EP075	USEPA 8270 GC/MS
315	Soil / Water	Butylbenzylphthalate (BBP)	EP075	USEPA 8270 GC/MS
316	Soil / Water	Carbazole	EP075	USEPA 8270 GC/MS
317	Soil / Water	Chlorfenvinphos E	EP075	USEPA 8270 GC/MS
318	Soil / Water	Chlorfenvinphos Z	EP075	USEPA 8270 GC/MS
319	Soil / Water	Chlorobenzilate	EP075	USEPA 8270 GC/MS
320	Soil / Water	Chlorpyrifos	EP075	USEPA 8270 GC/MS
321	Soil / Water	Chlorpyrifos-methyl	EP075	USEPA 8270 GC/MS
322	Soil / Water	Chrysene	EP075	USEPA 8270 GC/MS
323	Soil / Water	DDE	EP075	USEPA 8270 GC/MS
324	Soil / Water	DDT	EP075	USEPA 8270 GC/MS
325	Soil / Water	Delta-BHC	EP075	USEPA 8270 GC/MS
326	Soil / Water	Diazinon	EP075	USEPA 8270 GC/MS
327	Soil / Water	Dibenzo(ah)anthracene	EP075	USEPA 8270 GC/MS
328	Soil / Water	Dibenzofuran	EP075	USEPA 8270 GC/MS
329	Soil / Water	Dichlorvos	EP075	USEPA 8270 GC/MS
330	Soil / Water	Dieldrin	EP075	USEPA 8270 GC/MS
331	Soil / Water	Diethylphthalate (DEP)	EP075	USEPA 8270 GC/MS
332	Soil / Water	Dimethoate	EP075	USEPA 8270 GC/MS
333	Soil / Water	Dimethylaminoazobenzene	EP075	USEPA 8270 GC/MS
334	Soil / Water	Dimethylphthalate (DMP)	EP075	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
335	Soil / Water	Di-n-butylphthalate (DnBP)	EP075	USEPA 8270 GC/MS
336	Soil / Water	Di-n-octylphthalate (DnOP)	EP075	USEPA 8270 GC/MS
337	Soil / Water	Endosulphan 1	EP075	USEPA 8270 GC/MS
338	Soil / Water	Endosulphan 2	EP075	USEPA 8270 GC/MS
339	Soil / Water	Endosulphan sulphate	EP075	USEPA 8270 GC/MS
340	Soil / Water	Endrin	EP075	USEPA 8270 GC/MS
341	Soil / Water	Ethion	EP075	USEPA 8270 GC/MS
342	Soil / Water	Fenthion	EP075	USEPA 8270 GC/MS
343	Soil / Water	Fluoranthene	EP075	USEPA 8270 GC/MS
344	Soil / Water	Fluorene	EP075	USEPA 8270 GC/MS
345	Soil / Water	Heptachlor	EP075	USEPA 8270 GC/MS
346	Soil / Water	Heptachlor epoxide	EP075	USEPA 8270 GC/MS
347	Soil / Water	Hexachlorobenzene	EP075	USEPA 8270 GC/MS
348	Soil / Water	Hexachlorobutadiene	EP075	USEPA 8270 GC/MS
349	Soil / Water	Hexachlorocyclopentadiene	EP075	USEPA 8270 GC/MS
350	Soil / Water	Hexachloroethane	EP075	USEPA 8270 GC/MS
351	Soil / Water	Hexachloropropylene	EP075	USEPA 8270 GC/MS
352	Soil / Water	Indeno(123cd)pyrene	EP075	USEPA 8270 GC/MS
353	Soil / Water	Isophorone	EP075	USEPA 8270 GC/MS
354	Soil / Water	Malathion	EP075	USEPA 8270 GC/MS
355	Soil / Water	m-Cresol	EP075	USEPA 8270 GC/MS
356	Soil / Water	Methapyrilene	EP075	USEPA 8270 GC/MS
357	Soil / Water	N-2-Fluorenyl Acetamide	EP075	USEPA 8270 GC/MS
358	Soil / Water	Naphthalene	EP075	USEPA 8270 GC/MS
359	Soil / Water	Nitrobenzene	EP075	USEPA 8270 GC/MS
360	Soil / Water	N-Nitrosodibutylamine	EP075	USEPA 8270 GC/MS
361	Soil / Water	N-Nitrosodiethylamine	EP075	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
362	Soil / Water	N-Nitrosodiphenylamine & Diphenylamine	EP075	USEPA 8270 GC/MS
363	Soil / Water	N-Nitrosomethylethylamine	EP075	USEPA 8270 GC/MS
364	Soil / Water	N-Nitrosomorpholine	EP075	USEPA 8270 GC/MS
365	Soil / Water	N-Nitroso-n-propylamine	EP075	USEPA 8270 GC/MS
366	Soil / Water	N-Nitrosopiperidine	EP075	USEPA 8270 GC/MS
367	Soil / Water	N-Nitrosopyrrolidine	EP075	USEPA 8270 GC/MS
368	Soil / Water	o-Cresol	EP075	USEPA 8270 GC/MS
369	Soil / Water	p-Cresol	EP075	USEPA 8270 GC/MS
370	Soil / Water	Pentachlorobenzene	EP075	USEPA 8270 GC/MS
371	Soil / Water	Pentachloronitrobenzene	EP075	USEPA 8270 GC/MS
372	Soil / Water	Pentachlorophenol	EP075	USEPA 8270 GC/MS
373	Soil / Water	Phenacetin	EP075	USEPA 8270 GC/MS
374	Soil / Water	Phenanthrene	EP075	USEPA 8270 GC/MS
375	Soil / Water	Phenol	EP075	USEPA 8270 GC/MS
376	Soil / Water	Pirimphos-ethyl	EP075	USEPA 8270 GC/MS
377	Soil / Water	Pronamide	EP075	USEPA 8270 GC/MS
378	Soil / Water	Prothiofos	EP075	USEPA 8270 GC/MS
379	Soil / Water	Pyrene	EP075	USEPA 8270 GC/MS
380	Soil / Water	2,4,5-Trichlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
381	Soil / Water	2,4,6-Trichlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
382	Soil / Water	2,4-Dichlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
383	Soil / Water	2,4-Dimethylphenol	EP075 (SIM)	USEPA 8270 GC/MS
384	Soil / Water	2,6-Dichlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
385	Soil / Water	2-Chlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
386	Soil / Water	2-Methylphenol	EP075 (SIM)	USEPA 8270 GC/MS
387	Soil / Water	2-Nitrophenol	EP075 (SIM)	USEPA 8270 GC/MS
388	Soil / Water	3- & 4-Methylphenol	EP075 (SIM)	USEPA 8270 GC/MS

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
389	Soil / Water	4-Chloro-3-methylphenol	EP075 (SIM)	USEPA 8270 GC/MS
390	Soil / Water	Pentachlorophenol	EP075 (SIM)	USEPA 8270 GC/MS
391	Soil / Water	Phenol	EP075 (SIM)	USEPA 8270 GC/MS
392	Soil / Water	2-Methylnaphthalene	EP075 (SIM)	USEPA 8270 GC/MS
393	Soil / Water	Acenaphthene	EP075 (SIM)	USEPA 8270 GC/MS
394	Soil / Water	Acenaphthylene	EP075 (SIM)	USEPA 8270 GC/MS
395	Soil / Water	Anthracene	EP075 (SIM)	USEPA 8270 GC/MS
396	Soil / Water	Benz(a)anthracene	EP075 (SIM)	USEPA 8270 GC/MS
397	Soil / Water	Benzo(a)pyrene	EP075 (SIM)	USEPA 8270 GC/MS
398	Soil / Water	Benzo(b)fluoranthene	EP075 (SIM)	USEPA 8270 GC/MS
399	Soil / Water	Benzo(g.h.i)perylene	EP075 (SIM)	USEPA 8270 GC/MS
400	Soil / Water	Benzo(k)fluoranthene	EP075 (SIM)	USEPA 8270 GC/MS
401	Soil / Water	Chrysene	EP075 (SIM)	USEPA 8270 GC/MS
402	Soil / Water	Dibenzo(a.h)anthracene	EP075 (SIM)	USEPA 8270 GC/MS
403	Soil / Water	Fluoranthene	EP075 (SIM)	USEPA 8270 GC/MS
404	Soil / Water	Fluorene	EP075 (SIM)	USEPA 8270 GC/MS
405	Soil / Water	Indeno(1.2.3.cd)pyrene	EP075 (SIM)	USEPA 8270 GC/MS
406	Soil / Water	Naphthalene	EP075 (SIM)	USEPA 8270 GC/MS
407	Soil / Water	Phenanthrene	EP075 (SIM)	USEPA 8270 GC/MS
408	Soil / Water	Pyrene	EP075 (SIM)	USEPA 8270 GC/MS
409	Soil / Water	Sum of Polycyclic aromatic hydrocarbon	EP075 (SIM)	USEPA 8270 GC/MS
410	Water	Total (Heterotrophic) Plate Count	MW002	AS 4276.3.1; SM (21st EDITION) 9215A
411	Water	*Escherichia coli* (MPN)	MW004	AS 4276.6
412	Water	Faecal (Thermotolerant) Coliforms (MPN)	MW004	AS 4276.6
413	Water	Total Coliform by Most Probable Number Method	MW005	APHA9221B:2012

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
414	Water	*E. coli* (MF)	MW006	AS 4276.7
415	Water	Faecal (Thermotolerant) Coliforms (MF)	MW006	AS 4276.7
416	Water	Total Coliforms (MF)	MW007	AS 4276.5
417	Water	*E. coli* and Fecal (Thermotolerant) Coliform (MPN)	MW008	AS 4276.4
418	Water	Total Coliform (MPN)	MW009	AS 4276.4
419	Water	*Pseudomonas aeruginosa* (MF)	MW010	AS 4276.13:2008
420	Water	*Pesudomonads* (MF)	MW011	AS 4276.11:1995
421	Water	*Fecal Streptococci spp.* (MF)	MW013	SM (21st EDITION) 9230A:2005
422	Water	*Fecal Streptococci* (MPN)	MW014	AS 4276.8:1995
423	Water	Sulphate Reducing Bacteria- Most Probable Number (MPN) Method	MW017	SM (21st EDITION) 9240-C
424	Water / Soil	Helminthes Ova (Instetinal Egg) by Helminthes by Centrifgation and Floatation Method	MW020V	WHO 1989
425	Water	*Legionella spp*. including *L. pneumophila*	MW021	AS/NZ 4276.9.200
426	Water	*Legionella spp. Including L. pneumophila by Filtration and Centrifugation*	MW021SA	ISO 11731-1
427	Water	*Salmonella spp*.(Horizontal Method)	MW022	ISO 19250:2003
428	Water	*Enterococci spp.* (MF)	MW023	AS/NZS 4276.9:2007
429	Water	Fungi-Colony Count Technique at 25°C	MW030	SM (21ST EDITION) 9610:2005
430	Water	Detection and Enumeration of *Legionella* (Membrane Filtration)	MW32	ISO 11731-2: 2004
431	Water	Enumeration of *Clostridium perfringens* by Membrane Filtration	MW33	ISO 14189:2013
432	Soil	*Salmonella spp.* (Horizontal Method)	MS001	AS/NZS 4276.14:1995

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
433	Soil	*Total Plate Count*	MS002	Environmental Microbiology, Case, C. L.
434	Food/ Bevergaes/ Envi. Swabs	Standard Plate Count	MF01	USFDA/BAM Chapter 3, January 2001
435	Food/ Beverages/ Envi. Swab	Totl Fecal Coliform Count (MPN)	MF02-A	USFDA/BAM Chapter 4, September 2002
4336	Food/ Beverages/ Envi. Swab	*Escherichia coli* (MPN)	MF02-B	USFDA/BAM Chapter 4, September 2002
437	Food/ Beverages/ Envi. Swab/	Total Coliform by Pour Plate Method	MF02-C	USFDA/BAM Chapter 4, September 2002
438	Shell & Shellfish	Total Coliform Count in Shell and Shellfish Products (MPN)	MF03	USFDA/BAM Chapter 4, September 2002
439	Shell & Shellfish	Total Fecal Coliform Count in Shell and Shellfish Products (MPN)	MF03-A	USFDA/BAM Chapter 4, September 2002
440	Shell & Shellfish	*Esherichia coli* in Shell and Shellfish Products (MPN)	MF03-B	USFDA/BAM Chapter 4, September 2002
441	Food/ Envi. Swabs	Isolation and Detection of *Salmonella spp*. (Horizontal Method)	MF04	USFDA/BAM Chapter 5, November 2011/ AOAC 967
442	Food	Isolation and Enumeration of Coagulase Positive *Staphylococcus aureus*	MF05	USFDA/BAM Chapter 12, January 2001/ AOAC 975.55
443	Food/ Envi. Swab	Isolation and Enumeration of *Enterococcus*/ Fecal *Streptococcus* (MPN)	MF06	SM (21st EDITION) 9230 (APHA)
444	Food/ Envi. Swab	Enumeration of Enterococci/ Fecal Streptococci in Foods (Direct Plating)	MF06A	Compedium of Methods for Microbiological Examination of Foods, 4th Edition.
445	Food	Detection of *Campylobacter spp.*	MF07	USFDA/BAM Chapter 7, January 2001

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
446	Food	Detection of *Vibrio cholerae*	MF08	USFDA/BAM Chapter 9
447	Food/ Beverages / Envi. Swab	Detection and Enumeration of *Listeria monocytogenes and Listeria species*	MF09	USFDA/BAM Chapter 10, April 2011
448	Food/ Beverages/ Envi. Swab	Detection and Enumeration of *Bacillus cereus*	MF10	USFDA/BAM, Chapter 14, Feb. 2012
449	Food/ Beverages/	Detection and Enumeration of *Clostridium perfringens*	MF11	AOAC 976.30
450	Food/ Beverages/ Envi. Swab	Yeast and Mold Count	MF12	USFDA/BAM Chapter 18
451	Food/ Beverages/ Envi. Swab	Enumeration of *Enterobacteriaceae*	MF13	ISO 21528-2
452	Food/ Beverages/ Envi. Swab	Detection *Escherichia coli O157:H7* in Foods	MF14	USFDA/BAM Chapter 4A, February 2011
453	Food	Sterility of Canned Foods	MF15	USFDA/BAM Chapter 21A
454	Packaging	Microbiological Examination of Pulp, Paper and Board	MF16	ISO 8784-1:2005
455	Oil/Fuel	Salt in Crude Oil (Electrometric Method)	PE100	ASTM D3230-99
456	Oil/Fuel	Density, Relative Density and API Gravity	PE112	ASTM D4052-96
457	Oil	Density, Relative Density of Crude Oil	PE112A-SA	ASTM D5002-99
458	Bitumin	Density of Semi-Solid Bituminous Material (Pycnometer Method)	PE112B-SA	ASTM D70-09e1
459	Oil/Fuel	Flash Point by Pensky Martens Closed Cup Tester	PE954	ASTM D93/ IP34
460	Oil/Fuel	Kinematic Viscosity	PE966-SA	ASTM D7042-12a

No.	Matrix	Parameter/Analyte	ALS Method Code	Reference
461	Oil/Fuel	Water by KF Volumetric Titration	PE969-SA	ASTM E203-08/ D4377
462	Oil/Fuel	Water and Sediment in Fuel Oil by the Centrifuge Method	PE970	ASTM D1796-11e1
463	Oil/Fuel	Total PHC in Oil (Calculation)	PE-TPHC	In-house
464	Water	Digestion for Total Recoverable Metals	EN/25	QWI-EN/25
465	Water	1:5 Soil/Water Leach	EN/34	QWI-EN/34
466	Soil	Acid Digest for metals in organic matrices (e.g. leaves, biota)	EN/61	USEPA 3051
467	Soil	Hot Block Digest (USEPA 200.2) for metals in soils and sludges.	EN/69	QWI-EN/69
468	Soil	TCLP (non volatile)	EN33	USEPA 1311
469	Soil	TCLP Leach (ZHE volatile)	EN33Z	USEPA 1311
470	Water	Separatory Funnel Extraction of Liquids	ORG14	USEPA 3510B
471	Soil	Methanol Extraction of Soils for Purge and Trap	ORG16	USEPA 5030
472	Soil	Tumbler Extraction of Solids (Concentrating)	ORG17A	ORG17A
473	Soil	Tumbler Extraction of Solids (Non-concentrating)	ORG17B	ORG17B

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No	field	material	Test name	Standard method
01	corrosion	Austenitic & duplex stainless steel	Intergranular corrosion	ASTM A 262 Practice E
			Pitting corrosion	ASTM G 48 Method A
02	Mechanical	Plates pipe and rolled sections	Mechanical testing of steel products(charpy impact)	ASTM A 370
			Notched bar impact testing of metallic materials (charpy impact)	ASTM E 23
			Rockwell hardness of steel products	ASTM A 370
			Rockwell hardness of metallic materials.	ASTM E 18 ISO 6508-1
			Vickers hardness of steel products	ASTM A 370
			Knop and Vickers hardness of metallic materials	ASTM E 384 ISO 6507-1
			Tension testing of metallic materials	ASTM E8/E8M EN ISO 6892-1
			Through thickness tensile of steel plates	ASTM A770/A770M EN 10164
		Weldment	Bend test Welding of pipelines	ASME IX AWS D1.1 API 1104
			charpy impact(Welding)	ASME IX AWS D1.1

No	field	material	Test name	Standard method
02	Mechanical	Weldment	Fracture (Fillet & Nick Break)	ASME IX AWS D1.1
			Vickers hardness (Welding)	ASME IX AWS D1.1
			Macro examination (Welding)	ASME IX AWS D1.1
			Tensile test	ASME IX AWS D1.1
03	Metallurgical	Ferrous & non-Ferrous engineering components	Field replication	ASTM E 1351

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