

Accreditation Scope

Al-Hoty Stanger Laboratories, NAL 013

Testing Laboratory (ISO/IEC 17025:2017)

Al Mussafah, Abu Dhabi, UAE

Issue Date: 21-05-2019

Expiry Date: 05-02-2022

Issue No.: 08

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Microbiology	Water	Detection of Legionella sp	RT-PCR, Kit based. Legionella in water by RT PCR method- The iQ Check-Legionella Real Time PCR Kit Method.	P
		Sampling, Detection & Enumeration of Legionella (Matrix A, B & C) & Identification/detection of Legionella pneumophila	BS7592:2008 & ISO 11731: 2017/ SOP-11	P / S
		Total Aerobic Count	CCFRA 1.1.4:2003	P
		Enumeration Enterococci	APHA 9230C; 23 rd Ed 2017 / IDEXX Enterolert	
		Enumeration of Pseudomonas aeruginosa	BS EN 16266:2008 / IDEXX Psuedolert	
		Heterotrophic plate count	CMMEF 60.42; 5 th Ed / APHA 9215B; 23 rd Ed 2017	
		Enumeration of Total coliform, E.coli	IDEXX Colilert -18, APHA 9223 B; 23 rd Ed 2017	P
		Fecal coliform	In-house SOP-71 based on IDEXX Colilert -18, APHA 9223 B; 23 rd Ed 2017	
	Water, Waste Water	Enumeration Escherichia Coli	APHA 9222B & APHA 9221F; 23 rd Ed 2017	P
		Enumeration Fecal Coliforms	APHA 9221 E.1; 23 rd Ed 2017	
		Enumeration Coliforms	APHA 9222B & APHA 9221B – 23 rd Ed 2017	

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Microbiology	Waste Water, Sludge	Detection of Helminth Ova	Lab-SOP-70 based on TT322-08, Water research Commission.	P
	Swab	Aerobic Plate Count	USFDA BAM Chapter 3; Jan. 2001	P
		Enumeration of Coliforms	CCFRA 2.2.1:2007	
		Enumeration of Salmonella	CCFRA: Salmonella sp. 3.1.2 & 5:2007	
		Detection of Listeria	Reveal Test Kit - Neogen	
		Enumeration of Yeast & Mould	CMMEF Chapter 21.5; 5 th Ed 2015	
	Air	Total Bacterial Count (TBC)	In-house SOP-59.2 based on CCFRA 2.2.1:2003 Guide # 45	P / S
		Yeast & Mould		
	Food	Enumeration Vibrio Parahaemolyticus	USFDA BAM Chapter 9; May 2004	P
		Enumeration Yeast & Mould	CMMEF Chapter 21.5; 5 th Ed 2015	
		Detection E.coli 0157:H7	AOAC 2000.14 (20 Hours) 20 th Ed 2008 (Reveal Test Kit - Neogen Corporation)	
		Detection Salmonella spp	CCFRA Salmonella sp. 3.1.2 & 5:2007	
		Enumeration Enterobacteriaceae	CCFRA 2.3.1:2007	
		Detection Listeria spp	In-house SOP-20 / Reveal Test Kit 2.0 - Neogen	

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Microbiology	Food	Enumeration of Bacillus Cereus	CMMEF 31.6; 5 th Ed 2015	P
		Enumeration Clostridium Perfringens	CCFRA 3.6.1:2007	
		Anaerobic Colony Count	CCFRA 1.1.1:2007	
		Aerobic Plate Count	USFDA BAM Chapter 3; Jan. 2001	
		Enumeration Coliforms	CCFRA 2.2.1:2007	
		Enumeration Coliforms	CMMEF 9.71 & 9.72; 5 th Ed 2015	
		Enumeration Fecal Coliform	CMMEF 9.81; 5 th Ed 2015	
		Enumeration E.coli	CMMEF 9.91 & 9.92; 5 th Ed 2015	
		Enumeration Staphylococcus aureus	USFDA BAM Chapter 12; Jan 2001	
Chemical	Sludge	Moisture content	By difference/calculation Technical Committee Work Instructions (TC WI date 2003-08)	P
		Total solids	APHA 2540G; 23 rd Ed 2017	
		Volatile solids	APHA 2540G; 23 rd Ed 2017	
		Fixed solid	APHA 2540G; 23 rd Ed 2017	
		Arsenic (As)	APHA 3120B; 23 rd Ed 2017	
		Copper (Cu)	APHA 3120B; 23 rd Ed 2017	
		Nickel (Ni)	APHA 3120B; 23 rd Ed 2017	

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Chemical	Sludge	Chromium (Cr)	APHA 3120B; 23 rd Ed 2017	P
		Lead (Pb)	APHA 3120B; 23 rd Ed 2017	
		Cadmium (Cd)	APHA 3120B; 23 rd Ed 2017	
		Zinc (Zn)	APHA 3120B; 23 rd Ed 2017	
		Molybdenum (Mo)	APHA 3120B; 23 rd Ed 2017	
		Selenium (Se)	APHA 3120B; 23 rd Ed 2017	
		Electrical Conductivity at 25 °C on water extract	APHA 2510B; 23 rd Ed 2017	
		pH at 25 °C	APHA 4500 H B; 23 rd Ed 2017	
	Water, Waste Water	Langelier Saturation Index (LSI)	By calculation Hach method 8073 (ISO 10523:2008, ISO 6059:1984, ISO 9963:1994)	P
		Free chlorine	APHA 4500 Cl G; 23 rd Ed 2017	
		Turbidity	APHA 2130B; 23 rd Ed 2017	
		Barium (Ba)	APHA 3120B; 23 rd Ed 2017	
		Cobalt (Co)	APHA 3120B; 23 rd Ed 2017	
		Antimony (Sb)	APHA 3120B; 23 rd Ed 2017	
		Molybdenum (Mo)	APHA 3120B; 23 rd Ed 2017	
		Silver (Ag)	APHA 3120B; 23 rd Ed 2017	
		Iron (Fe)	APHA 3120B; 23 rd Ed 2017	
		Manganese (Mn)	APHA 3120B; 23 rd Ed 2017	

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Chemical	Water, Waste Water	Cadmium (Cd)	APHA 3120B; 23 rd Ed 2017	P
		Arsenic (As)	APHA 3120B; 23 rd Ed 2017	
		Mercury (Hg)	APHA 3120B; 23 rd Ed 2017	
		Selenium (Se)	APHA 3120B; 23 rd Ed 2017	
		Conductivity at 25 °C Total	APHA 2510; 23 rd Ed 2017	
		Suspended Solids (TSS)	APHA 2540D; 23 rd Ed 2017	
		Total Dissolved Solids at 180 °C (TDS)	APHA 2540C; 23 rd Ed 2017	
		Chloride (Cl)	HACH 8113/ 02/2018 Ed 9	
		Chloride (Cl)	APHA 4500- Cl ⁻ B; 23 rd Ed 2017	
		Sulphate (SO ₄)	HACH 8051/ 02/2018/ Ed 2	
		Sulphate (SO ₄)	APHA 4500-SO ₄ - C; 23 rd Ed 2017	
		Bicarbonate (HCO ₃)	APHA 2320B; 23 rd Ed 2017	
		Calcium (Ca)	APHA 3120B; 23 rd Ed 2017	
		Calcium (Ca)	APHA 3500Ca B; 23 rd Ed 2017	
		Magnesium (Mg)	APHA 3120B; 23 rd Ed 2017	
		Magnesium (Mg)	APHA 3500Mg B; 23 rd Ed 2017	
		Total Hardness as (CaCO ₃)	APHA 2340C; 23 rd Ed 2017	
		Total Alkalinity to pH 4.4	APHA 2320B; 23 rd Ed 2017	

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Chemical	Water, Waste Water	Sodium (Na)	APHA 3120B; 23 rd Ed 2017	P
		Potassium (K)	APHA 3120B; 23 rd Ed 2017	
		Chloride, Sulphate, Bromide, Nitrate, Nitrite, Fluoride, Phosphate	Ion Chromatography APHA 4110 B; 23 rd Ed 2017	
		Total Organic Carbon	APHA 5310B; 23 rd Ed 2017	
		Boron	APHA 3120B; 23 rd Ed 2017	
		pH at 25 °C	APHA 4500 – H+B; 23 rd Ed 2017	
		Oil & Grease	APHA 5520B; 23 rd Ed 2017	
		Chemical Oxygen Demand (COD)	APHA 5220B; 23 rd Ed 2017	
		Biochemical Oxygen (BOD) (5 days @ 20 °C)	APHA 5210B; 23 rd Ed 2017	
		Copper (Cu)	APHA 3120B; 23 rd Ed 2017	
		Nickel (Ni)	APHA 3120B; 23 rd Ed 2017	
		Zinc (Zn)	APHA 3120B; 23 rd Ed 2017	
		Chromium (Cr)	APHA 3120B; 23 rd Ed 2017	
		Lead (Pb)	APHA 3120B; 23 rd Ed 2017	
		Bromate (0.001 mg/l)	Ion Chromatography APHA 4110D; 23 rd Ed 2017/ EPA 300.0 Rev 2.1 (Aug 1993)	
		Benzo(a)Pyrene (0.025 ppb)	EPA 525.2 Rev 2.0 (1995)/ APHA6440B; 23 rd Ed 2017	
		Formaldehyde (HCOH) (0.005 mg/L)	APHA 6252B; 23 rd Ed 2017	

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Chemical	Water, Waste Water	Total petroleum hydrocarbons	EPA 8015B Rev 2:1996	P
		Ammonia-Nitrogen	HACH 8038/04/2017 Ed 9	
		Phosphate	HACH 8178/01/2014 Ed 9	
		Flouride	HACH 8029/08/2018 Ed 10	
		Nitrate-Nitrogen	HACH 8039/01/2019 Ed 10	
		Dissolve Oxygen	APHA 4500O; C 23 rd Ed 2017	
		Total Kjeldahl Nitrogen	APHA 4500B; 23 rd Ed 2017	
		Beryllium	APHA 3120B; 23 rd Ed 2017	
		Sodium Absorption Ratio	By Calculation Agriculture Handbook 60, US Department of Agriculture	
		Volatile Organic Compounds: Benzene (0.32 PPB) Carbon tetrachloride (10.0 PPB) 1,2- Dichlorobenzene (2.09 PPB) 1,4- Dichlorobenzene (0.43 PPB) 1,2- Dichloroethane (0.49 PPB) 1,2- Dichloroethene (0.35 PPB)	EPA 5030-B Rev 2 (Dec 1996)	

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Chemical	Water, Waste Water	Dichloromethane (0.58 PPB) Ethyl benzene (0.31 PPB) Hexachlorobutadiene (5.93 PPB) Styrene (0.39 PPB) Tetrachloroethene (0.45 PPB) Toluene (0.30 PPB) Trichloroethane (6.03 PPB) O-Xylenes (0.35 PPB) P-Xylene (0.37 PPB) M Xylenes (0.37 PPB) 1,2 - Dibromo- 3-chloropropane (0.48 PPB) 1,2 – Dibromoethane (1.06 PPB) 1,2 – Dichloropropane (0.43 PPB) 1,3 – Dichloropropene (1.48 PPB) Bromoform (0.43 PPB) Chloroform (0.41 PPB)	EPA 5030-B Rev 2 (Dec 1996)	P

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Chemical	Water, Waste Water	Bromodichloromethane (BDCM) (0.36 PPB) Dibromochloromethane (DBCM) (0.38 PPB) Trichloroethene (0.30 PPB) Chlorobenzene (0.38 PPB) Vinyl Chloride (11.18 PPB)	EPA 5030-B Rev 2 (Dec 1996)	P
	Dialysis Water	Electrical Conductivity at 25 °C	APHA 2510; 23 rd Ed 2017	P
		Chlorine	APHA 4500; Cl G 23 rd Ed 2017	
		Fluoride (F ⁻)	APHA 4110B; 23 rd Ed 2017	
		Nitrate Nitrogen (NO ₃ -N)	APHA 4110B; 23 rd Ed 2017	
		Sulphate (SO ₄)	APHA 4110B; 23 rd Ed 2017	
		Sodium (Na)	APHA 3120B; 23 rd Ed 2017	
		Potassium (K)	APHA 3120B; 23 rd Ed 2017	
		Calcium (Ca)	APHA 3120B; 23 rd Ed 2017	
		Magnesium (Mg)	APHA 3120B; 23 rd Ed 2017	

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Chemical	Milk Chocolate, Pre Sweetened Cereals	Fructose (0.04g/100g)	AOAC 980.13/982.14, 20 th Ed 2016	P
		Glucose (0.07g/100g)		
		Sucrose (0.07g/100g)		
		Lactose (0.07g/100g)		
		Maltose (0.01 g/100g)		
	Bakery, Confectionary	Moisture (0.60 g/100g)	AOAC 925.45, 20 th Ed 2016	P
		Fat (0.47 g/100g)	AOAC 935.39, 20 th Ed 2016	
		Protein (0.08 g/100g)		
		Ash (0.11 g/100g)		
		pH (0.1)		
		Potassium (0.1 mg/100g)	AOAC 2011.14, 20 th Ed	
		Sodium (0.1 mg/100g)		

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Chemical	Cereals, Millets Pulses & Processed Complimentary Foods	Moisture (0.60 g/100g)	AOAC 925.10; 20 th Ed	P
		Fat (0.47 g/100g)	AOAC 920.85; 20 th Ed	
		Total Protein (0.08 g/100g)	AOAC 920.87; 20 th Ed	
		Carbohydrates (0.77 g/100g)	AOAC/Food energy – methods of analysis & conversion factories	
		Energy (2.37 Kcal/100g)		
		Energy from Fat (4.36 Kcal/100g)		
		Potassium (0.1 mg/100g)	AOAC 2011.14, 20 th Ed	
		Sodium (0.1 mg/100g)	(ICP-OES Method) AOAC 2011.11, 20 th Ed	
	Nut & Nuts Products	Moisture (0.14 g/100)	AOAC 925.40, 20 th Ed	P
		Total Ash (0.23 g/100g)	AOAC 950.49, 20 th Ed	
		Total Fat (0.33 g/100g)	AOAC 948.22, 20 th Ed	
		Protein (0.45 g/100g)	AOAC 950.48, 20 th Ed	
		Carbohydrates (0.61 g/100g)	AOAC/Food energy – methods of analysis & conversion factories	
		Energy (2.19 g/100g)		
		Sodium (0.1 mg/100g)	AOAC 956.01, 20 th Ed	
		Potassium (0.1 mg/100g)		

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Chemical	Animal Feeds	Moisture (0.14 g/100)	AOAC 934.01 (at 95 to 100°C), AOAC 930.15 (at 135 °C); 20 th Ed 2016	P
		Total Ash (0.23 g/100g)	AOAC 942.05; 20 th Ed 2016	
		Acid Insoluble ash (0.1 g/100g)	AOAC 975.12; 20 th Ed 2016	
		Fat (0.33 g/100g)	AOAC 920.39; 20 th Ed 2016	
		Protein (0.45 g/100g)	AOAC 984.13; 20 th Ed 2016	
		Minerals (Ca, Fe, Na, Zn, K, Cu, Mn) (0.1 mg/100g)	AOAC 985.35 (ICP-OES Method); 20 th Ed 2016	
	Dairy & Dairy Products	Energy from fat (3.49 Kcal/100g)	AOAC/Food energy – methods of analysis & conversion factories	P
		pH (0.1)	AOAC 981.12; 20 th Ed 2016	
		Calcium (0.01 mg/100g)	AOAC 991.25; 20 th Ed 2016	
		Sodium (0.1 mg/100g)	AOAC 990.23; 20 th Ed 2016	
		Potassium (0.1 mg/100g)		

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Chemical	Dairy & Dairy Products	Moisture (0.57 g/100g)	AOAC 927.05 (Dried Milk) AOAC 926.08 (Cheese) AOAC 920.116 (Butter); 20 th Ed 2016	P
		Fat (0.38 g/100g)	AOAC 989.05; 20 th Ed 2016	
		Protein (0.13 g/100g)	AOAC 991.20; 20 th Ed 2016	
		Carbohydrates	AOAC/Food energy – methods of analysis & conversion factories	
		Energy		
	Fishery & Poultry Products	Moisture (0.52 g/100g)	AOAC 950.46; 20 th Ed 2016	P
		Fat (0.23 g/100g)	AOAC 991.36; 20 th Ed 2016	
		Protein (0.58 g/100g)	AOAC 981.10; 20 th Ed 2016	
		Carbohydrates (0.61 g/100g)	AOAC/Food energy – methods of analysis & conversion factories	
		Energy (2.19 Kcal/100g)	AOAC/Food energy – methods of analysis & conversion factories	
		Energy from fat (1.98 Kcal/100g)	AOAC/Food energy – methods of analysis & conversion factories	
		Potassium (0.1 mg/100g)	AOAC 2011.14 (ICP-OES Method); 20 th Ed 2016	
		Sodium (0.1 mg/100g)	AOAC 2011.14 (ICP-OES Method); 20 th Ed 2016	

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Chemical	Fruits & Vegetables	pH (0.1)	AOAC 981.12; 20 th Ed 2016	P
	Food Additives	Sorbic Acid (0.01%)	AOAC 974.08; 20 th Ed 2016	P
		Benzoic acid (0.01%)	ISO 9321:2008	
		Caffeine (0.01%)	AOAC 980.14; 20 th Ed 2016	
	Food	Acidity as Lactic Acid in Dairy Product (0.043 g/100g)	AOAC 947.05; 20 th Ed	P
		Solid Non-fat (S.N.F) (0.235 g/100g)	AOAC 990.21; 20 th Ed	
		Free Fatty Acid (FFA) (0.021 g/100g)	AOAC 940.28; 20 th Ed	
	Steel	Carbon	ASTM E 1019 -18	P
		Sulfur	ASTM E 1019 -18	
		Carbon	ASTM E 415 -17	
		Silicon	ASTM E 415 -17	
		Manganese	ASTM E 415 -17	
		Phosphorous	ASTM E 415 -17	
		Sulfur	ASTM E 415 -17	
		Nickel	ASTM E 415 -17	
		Chromium	ASTM E 415 -17	
		Vanadium	ASTM E 415 -17	
		Nitrogen	ASTM E 415 -17	
		Molybdenum	ASTM E 415 -17	

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Chemical	Stainless Steel	Carbon	ASTM E 1086 – 14	P
		Silicon	ASTM E 1086 – 14	
		Manganese	ASTM E 1086 – 14	
		Phosphorous	ASTM E 1086 – 14	
		Sulfur	ASTM E 1086 – 14	
		Nickel	ASTM E 1086 – 14	
		Chromium	ASTM E 1086 – 14	
		Molybdenum	ASTM E 1086 – 14	
Construction Materials	Steel	Tensile strength, rebend of steel rebars	BS 4449:2005+A3:2016	P
		Tensile Strength-Steel	BS EN ISO 6892-1:2016 ASTM A 370- 17a	
		Vickers Hardness	ASTM E92-17	
		Vickers Hardness Test	ISO 6507-1:2018	
	HDPE Pipe	Tensile strength of weld joint	ISO 13953:2001	P
	Glaze tiles	Modulus of rupture	BS EN ISO 10545-4:2014	
		Water absorption	BS EN 10545-3:1997 - Boiling Method	
	GRP	Tensile Strength	ASTM D 638 -14	
	Geotextile	Geosynthetics - Geotextile wide width tensile test	BS EN ISO 10319:2015	P
		Geosynthetics - Static Puncture Test	BS EN ISO 12236:2006	
		Opening size	BS EN ISO 12956:2010	
		Mass per unit area	BS EN ISO 9864:2005	
		Thickness	BS EN ISO 9863-1:2016	

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Construction Materials	Water Proofing Materials	Tensile strength	DIN EN 12311-1: 1999	P
		Tear Resistance of Waterproofing membrane	ASTM D 5147/ D5147 M-2018	
		Puncture Resistance (Water vapor retarders)	ASTM E154/E154M-08a (Reapproved 2013)	
	Geo Membrane	Shear & Peel Test	ASTM D 6392-12 (2018)	P
	Aggregates	Flakiness index	BS 812-105.1:1989	P
		Elongation index	BS 812-105.2:1990 (withdrawn)	
		Ten percent fines value	BS 812-111:1990	
		Sieve analysis of fines & coarse aggregate	ASTM C136/C136 M-14	
		Particle density & absorption of coarse & fine aggregate	BS 812-2:1995 (AMD 9195-1996) Part 2: 5.3, 5.4 & 5.5	
		Determination of Aggregate Crushing Value	BS 812-110:1990	
		Determination of Sand Equivalent	ASTM D 2419-14	
		Determination of Clay Lumps & Friable Particles in aggregates	ASTM C142/C142M-17	
		Soundness of aggregate	ASTM C88/C88M-18	
		Los Angeles	ASTM C 131/131M-14	

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Construction Materials	Aggregates	Sieve Analysis	BS EN 933-1: 2012	P
		Drying Shrinkage	BS 812 -120:1995 (withdrawn 2012) BS EN 1367-4:2008	
		Determination of Aggregate Impact Value (AIV)	BS 812-112:1990	
		Particle Size Distribution	BS 812-103.1:1985 (Withdrawn)	
		(Specific Gravity) & Absorption of Coarse Aggregate	ASTM C 127-15	
		(Specific Gravity) & Absorption of Fine Aggregate	ASTM C 128-15	
	A-Cutback Asphalt (MC 70)	Distillation at Different Temperature	ASTM D 402/D402M-14	P
	Asphalt / Bitumen	Bitumen Extraction – Quantitative Extraction of Bitumen from Bituminous Paving mixture.	ASTM D 2172/D2172M-17	P
		Quantitative Extraction of Bitumen from Bituminous Paving mixture	AASHTO T 164:2014	
		Softening point of Bitumen (Ring & ball apparatus)	ASTM D 36 /D 36 M -14	
		Penetration of Bituminous Material	ASTM D 5/D5M-13	

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Construction Materials	B-Bitumen SS1H	Distillation at Different Temperature	ASTM D 6997-12	P
	Concrete Masonry & Related Units- Paving Blocks	Water absorption & density -Concrete Interlocking Paving Units	ASTM C 140/C140M-18	P
		Compressive Strength of Precast, unreinforced concrete paving blocks	BS 6717-1:1993	
	Fresh Concrete	Sampling	BS EN 12350-1-2009	P
		Density	BS EN 12350-6-2009	
		Air Content	BS EN 12350-7-2009	
		Slump	BS EN 12350-2-2009	
	Concrete	Compressive strength of Concrete cubes	BS 1881-116:1983	P
		Compressive strength of Concrete cube	BS EN 12390-3:2009	
		Water Absorption of Hardened Concrete	BS 1881-122:2011	
		Water Permeability	DIN 1048-5:1991, CI 6.4	
		Electrical Indication of Concrete ability to resist Chloride ion penetration Unit is (Coulombs)	ASTM C 1202:2018	P

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Construction Materials	Cement	Compressive Strength of hydraulic cement mortar	ASTM C 109/C109M-16a	P
		Methods for testing Cement, Determination of Strength, Compressive Strength	BS EN 196- 1:2016	
		Specific Surface of Cement 1- Method for testing cement, determination of fineness, Air permeability method	BS EN 196- 6: 2010; Cl. 4	
		Fineness of Hydraulic Cement by Air-Permeability	ASTM C 204:2018	
		Determination of setting times: 1- Methods for testing Cement Determination of setting times soundness, setting time test	BS EN 196-3: 2016, Cl. 6	
		Time of setting of hydraulic Cement by Vicat Needle	ASTM C 191: 2018 a	
	Plastic	Water absorption	ASTM D 570-98 (2018)	P
	Soil	Dry density - moisture content relationship of soil with medium sized gravel	BS 1377-4:1990, Section:3.5	P
		Dry density- moisture content relationship of soil with coarse sized gravel	BS 1377-4:1990, Section:3.6	

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Geotechnical	Soil	Particle Size Distribution	BS 1377-2:1990, CI 9.2 & 9.3; AMD 1996	P
		Method for Liquid limit, Plastic Limit & Plasticity Index	BS 1377 -2:1990, CI 4.5, 5.3 & 5.4	
		California Bearing Ratio	BS 1377-4:1990, CI 7	
		Standard Penetration Test (SPT)	BS 1377-9:1990, sec 3.3	S
		Soil Sampling	BS 1377-9:1990, sec 3.3	
		Determination of Water Moisture Content of Soil	BS 1377-2:1990, sec 3	P
		Hydrometer	BS 1377-2:1990, CI 9.5	P
		In Situ Density	BS 1377-9:1990, CI 2.2	S
	Soil & Rock	Determination of Water Moisture Content of Soil & Rock by Mass	ASTM D 2216-10	P
	Rock Core	Unconfined Compressive Strength	ASTM D-7012-2014	P
		Preparation of Rock Core	ASTM D 4543-08	
		Core Recovery TCR, SCR	BS 5930:2015, CI 36.4.4	
		Rock Quality Designation	BS 5930:2015, CI 36.4.4	
	Soil – Rock Core	Soil & Rock description	BS 5930:2015, CI 33 & 36	P
	Reporting	Reporting	BS 5930:2015, CI 63	P

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Geotechnical	Ground Water	Groundwater Level Measurement	BS 5930:2015, Section 4	S
		Groundwater Sampling	BS 5930:2015, Section 4	
		pH of Ground Water	BS 1377-3:1990, CI 9	P
		Sulphate Content of Ground Water	BS 1377-3:1990, CI 5.4 & 5.5	
		Chloride Content of Ground Water	BS 1377-3:1990, CI 7.2	
	Soil	Acid Soluble Sulphate Content of Soil	BS 1377-3:1990, CI 5.2 & 5.5	P
		Water Soluble Sulphate Content of Soil	BS 1377-3:1990, CI 5.3 & 5.5	
		Acid Soluble Chloride Content of Soil	BS 1377-3:1990, CI 7.3	
		Water Soluble Chloride Content of Soil	BS 1377-3:1990, CI 7.2	
		pH of Soil	BS 1377-3:1990, CI 9	
Environmental	Indoor Air Quality - Air Particulate	Total Suspended Particulate Matter (TSPM) Respirable Suspended Particulate Matter (RSPM-PM10, 2.5 & 1) 0.01 to >1000 µg/m ³	AHSL SOP AQ 003 (Rev04: 15 th Feb 2018) in combination with BS EN 481:1993	S

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Environmental	Indoor Air Quality - Gaseous Pollutants	Nitrogen Dioxide (NO ₂) / <0.02 to 7 ppm	AHSL SOP AQ002 (Rev05: 15 th Feb 2018) in combination with BS EN 60079-29-2:2015	S
		Sulphur Dioxide (SO ₂) / <0.1 to 10 ppm		
		Volatile Organic Compound (VOC) / <0.005 to 10 ppm		
		Formaldehyde (HCOH) / 20 to 1000 ppb		
		Methane (CH ₄ -LEL) / <0.01 to 100 %		
		Carbon Monoxide (CO) / <0.3 to 300 ppm		
		Carbon Dioxide (CO ₂) / < 1 to 5000 ppm		
		Hydrogen Sulphide (H ₂ S) / <0.03 to 10 ppm		
		Oxygen (O ₂) / < 0.2 to 23 %		
		Temperature / -10 °C to 50 °C		
		Relative Humidity 0 to 90%		
		Total Bacterial Count (TBC)	CCFRA 2.2.1.:2003, Guide# 45.	
		Yeast & Mould Count (YMC)	CCFRA 2.2.1.:2003, Guide# 45.	
		Personal Dust Exposure	MDHS 14/3:2000, OSHA Technical Manual: Section II - Chapter 1: 2014	

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Environmental	Indoor Air Quality - Gaseous Pollutants	Ozone (O ₃) <0.02 to 1 ppm	AHSL SOP AQ002 (Rev05: 15 th Feb 2018)	S
		Ammonia (NH ₃) < 1 to 15 ppm	in combination with BS EN 60079-29-2:2015	
	Indoor Air Quality - Particle Count	Classification of air cleanliness by particle concentration RSPM (PM 0.3, 0.5, 1.0, 2.5, 5.0, 10.0) 0.01 to >1000 µg/m ³	AHSL SOP AQ005 (Rev01: 15 th Feb 2018) in combination with ISO 14644-1:2015 (E)	
	Outdoor Air Quality - Gaseous Pollutants	Total Suspended Particulate Matter (TSPM) Respirable Suspended Particulate Matter (RSPM PM10)	AHSL SOP AQ001 (Rev06: 10 th Feb 2018) in combination with USEPA – eCFR: Title 40 Part 50 & 53: 2011	S
		RSPM PM2.5		
		Sulphur Dioxide (SO ₂) < 0.03 to 10 ppm	AHSL SOP AQ 002 (Rev05 :15 th Feb 2018) in combination with BS EN 60079-29-2:2015	
		Nitrogen Dioxide (NO ₂) <0.001 to 0.2 ppm		
		Volatile organic compound (VOC)/ < 0.1 to 15 ppm		
		Ozone (O ₃) <0.001 to 3 ppm		
		Ammonia (NH ₃) <0.001 to 10 ppm		

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Environmental	Outdoor Air Quality - Gaseous Pollutants	Carbon monoxide (CO) < 0.04 to 20 ppm	AHSL SOP AQ 002 (Rev05: 15 th Feb 2018) in combination with BS EN 60079-29-2:2015	S
		Carbon Dioxide (CO ₂) < 10 to 1500 ppm		
		Hydrogen Sulphide (H ₂ S) <0.003 to 10 ppm		
	Noise	Ambient / Occupational Noise levels 30 to 140 dB	AHSL SOP NT 001 (Rev05: 20 th Jan 2018) in combination with ISO 1996-2:2017 (E)-CI 7.5	S
		Personal noise exposure 30 to 140 dB	AHSL SOP NT 001 (Rev05: 20 th Jan 2018) in combination with ISO 9612:2009 CI 3.5	
	Flue Gas	Carbon monoxide (CO) < 1 to 1000 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA CTM 034	S
		Oxides of Nitrogen (NOX) < 0.1 to 500 ppm		
		Oxygen (O ₂) < 0.01 to 25 %		
		Carbon dioxide (CO ₂) < 1 to 20 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 3A	
		Sulphur Dioxide (SO ₂) < 1 to 500 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 6C	

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Environmental	Stack Emission	Total Suspended Particles (TSP)	US EPA EMC Method 17	S
		Carbon dioxide (CO ₂) < 1 to 20 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 3A	
		Carbon monoxide (CO) < 1 to 1000 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA CTM 034	
		Oxides of Nitrogen (NOX) < 0.1 to 500 ppm		
		Oxygen (O ₂) < 0.01 to 25 %		
		Sulphur Dioxide (SO ₂) < 1 to 500 ppm	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 6C	
		Moisture Content	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 4	
		Hydrogen Chloride	AHSL SOP SET 001 (Rev06: 18 th Mar 2018) in combination with US EPA EMC Method 26	
		Hydrogen Fluoride		

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Environmental	Heat Stress	Wet Bulb Temperature (WBT) -20 °C to 60 °C	AHSL SOP HSM 001 (Rev02: 21 st Feb 2018) in combination with ISO 7243:2017 & OSHAD-SF Technical Guideline: Safety in the Heat: Version 3.0, July 2016	S
		Dry Bulb Temperature (DBT) -20 °C to 60 °C		
		Global Temperature (GT) -20 °C to 120 °C		
		Thermal Work Limit (TWL)		
	Illuminance	Lux 0 to 50,000 lux	AHSL SOP IT001 (Rev03: 15 th Feb 2018) in combination with "Lighting Assessment in the Work Place" by Occupational Safety & Health Branch, Labor Department, UK: 2008	S
END				