



Accreditation Scope

**Arab Center for Engineering Studies, NAL 062
Testing Laboratory, (ISO/IEC 17025:2017)**

Industrial City of Abu Dhabi (ICAD-1), Abu Dhabi, UAE

Issue Date: 01-09-2022

Expiry Date: 23-01-2023

Issue No: 11

Testing Field	Materials/ Products tested	Type of test/ Test parameter/ Properties measured/Range of measurement	Test Method (Standard, Internal Procedure, Technique)	Permanent lab (P) / Client-site (S)
Chemical	Food & Food Products	Determination of Total Ash in Foods	SOP062, rev.2 based on AOAC methods (by Ashing)	P
		Determination of Moisture & Total Solids in Foods	SOP065, rev.2 based on AOAC methods (Air Oven Method)	
		Determination of Total Nitrogen & Protein in Food	SOP067, rev. 2 based on AOAC Official Methods (Kjeldahl Method & Calculation)	
		Total Acidity in Food	AOAC 947.05	
		Determination of pH Value of Acidified Foods	SOP066, rev.1 based on AOAC 981.12	
		Determination of Crude & Total Fat Content By Soxhlet Extraction Method	SOP064, rev.1 based on AOAC Official Methods (Soxhlet Extraction Method)	
		Carbohydrates & Energy Value in Food	SOP077, rev.1 based on AOAC methods (by Calculation)	
		Minerals in Fortified Food Products Fe, Cu, Zn, Ca, Mg, Na, K, P, Mn by ICP-OES after Microwave Digestion	AOAC 2011.14	
		Determination of Metals - As, Cd, Pb, Sn, Hg	SOP083, rev.5	
		Determination of Pesticides by GC-MS method: Alachlor; Aldrin; alpha-BHC; Ametryn; Atraton; Atrazine; Azinphos-methyl; beta-BHC; beta-Cyfluthrin; Bromacil; Butachlor; Butylate; Chlordane –trans; Chlorpropham; Chlorpyrifos; cis-Chlordane; Coumaphos; Cyanazine; Cycloate; Cypermethrin; delta.-BHC ; Demeton-O&S; Diazinone; Dichlorvos;Dieldrin; Dimethoate; Diphenamide;	SOP079, rev.3 based on QUECHERS AOAC 2007.01(GC-MS)	P



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Chemical	Food & Food Products	Disulfoton; Endosulfan sulfate; Endosulfan-alpha; Endosulfan-beta; Endrin ; Endrin aldehyde; Endrin ketone; EPN; Eptc; Ethoprophos; Etridiazole; Fenarimol; Fenchlorphos (Ronnel); Fensulfothion; Fenthion; Fluridone; Heptachlor; Heptachlor epoxide; Hexazinone; Iprodione; Lindane; Malathion; Merphos; Methoxychlor; Methyl parathion; Metolachlor; Metribuzin; Mevinphos; Mgc-264; Mirex; Molinate; Napropamide; Norflurazon; p,p'-DDE; p,p'-DDE; p,p'-DDT; Parathion; Pebulate; Phorate; Prometon; Prometryne; Propachlor; Propazine; Propyzamide; Prothiofos; Simazine; Simetryne; Sulfotep; Sulprofos; Tebuthiuron; Terbacil; Terbutryn; Tetrachlorvinphos; Triadimefon; Trichloronat; Trifluralin; Vernolate	SOP079, rev.3 based on QUECHERS AOAC 2007.01(GC-MS)	P
		Fatty Acid Profile Analysis: Saturated Fatty Acid (SFA): <ul style="list-style-type: none"> • Caproic acid methyl ester (C6:0) • Caprylic acid methyl ester (C8:0) • Capric acid methyl ester (C10:0) • Lauric acid methyl ester (C12:0) • Myristic acid methyl ester (C14:0) • Palmitic acid methyl ester (C16:0) • Stearic acid methyl ester (C18:0) • Arachidic acid methyl ester (C20:0) 	SOP080, rev.4 based on AOAC Methods (GC FID method)	P



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Chemical	Food & Food Products	<ul style="list-style-type: none"> • Behenic acid methyl ester (C22 :0) • Lignoceric acid methyl ester (C24:0) Mono Unsaturated Fatty Acid (MUFA): • Myristoleic Acid Methyl Ester (C14:1cis) • Palmitoleic acid methyl ester (C16:1cis) • Petroselinic acid methyl ester (C18:1 cis) • Elaidic acid methyl ester (C18:1trans) • cis- Vaccenic acid methyl ester(C18;1 cis) • Oleic acid Methyl Ester(C18:1cis) • cis-11-Eicosenoic acid methyl ester (C20:1cis) • Erucic acid methyl ester (C22:1cis) • Nervonic acid methyl ester (C24:1 cis) Poly Unsaturated Fatty Acid (PUFA): • Linolelaidic acid methyl ester (C18:2trans) • Linoleic acid methyl ester (C18:2 cis) • Linolenic acid methyl ester (C18:3 cis) • Arachidonic acid methyl ester(C20:4cis) • Methyl Cis-4,7,10,13,16,19-Docosahexaenoate(C22:6) 	SOP080, rev.4 based on AOAC Methods (GC FID method)	P



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Chemical	Food & Food Products	Determination of sugars by HPLC-RID: <ul style="list-style-type: none"> • Fructose • Glucose • Sucrose • Maltose • Lactose • Total Sugar 	SOP090, rev.1 based on AOAC: 980.13 , AOAC: 977.20, AOAC SMPR 2018.001	P
		Determination of Pesticides by LC MS/MS Method : Acephate; Acetamiprid; Aldicarb; Aldicarb-sulfone (Aldoxycarb); Aldicarb-sulfoxide; Ametryn; Aminocarb; Amitraz; Azoxystrobin; Benalaxyl; Bendiocarb; Benzoximate; Bitertanol (diastereo isomers); Boscalid; Bromuconazole; Bupirimate;Buprofezin; Butafenacil; Butoxycarboxim; Carbaryl (NAC); Carbendazim; Carbetamide; Carbofuran; Carbofuran-3-hydroxy (3-Hydroxycarbofuran); Carboxin; Chlorantraniliprole; Chlorfluazuron; Chlorotoluron; Chloroxuron; Clethodim (isomer); Clofentezine; Clothianidin; Cyazofamid; Cycluron; Cymoxanil; Cyproconazole; Cyprodinil; Cyromazine; Desmedipham; Diclobutrazol (stereo isomer); Dicrotophos; Diethofencarb; Difenconazole (isomer); Diflubenzuron; Dimethoate; Dimethomorph; Dimoxystrobin; Diniconazole; Dinotefuran; Dioxacarb; Diuron;	SOP102 rev.1 based on QUECHERS AOAC 2007.01	P



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Chemical	Food & Food Products	Emamectin benzoate b1a; Epoiconazole; Etaconazole isomers; Ethiofencarb; Ethiprole; Ethirimol; Ethofumesate; Etoxazole; Famoxadone; Fenamidone; Fenarimol; Fenazaquin;	SOP102 rev.1 based on QUECHERS AOAC 2007.01	P
		Fenbuconazole; Fenhexamid; Fenobucarb; Fenoxycarb; Fenpropimorph; Fenpyroximate; Fenuron; Fipronil; Flonicamid; Fluazinam; Flubendiamide; Fludioxinil; Flufenacet; Flufenoxuron; Fluometuron; Fluoxastrobin; Fluquinconazole; Flusilazole; Flutolanil; Flutriafol (isomer); Forchlorfenuron; Formetanate hydrochloride; Fuberidazole; Furalaxyl; Furathiocarb; Halofenozide; Hexaconazole; Hexaflumuron; Hexythiazox; Hydramethylnon; Imazalil; Imidacloprid; Indoxacarb; Ipconazole isomer; Iprovalicarb; Isoprocarb; Isoproturon; Kresoxim-methyl; Linuron; Lufenuron; Mandipropamid; Mefenacet; Mepronil; Mesotrione; Metafumizone; Metalaxyl; Metconazole; Methabenzthiazuron; Methamidophos; Methiocarb; Methomyl; Methoprotryne; Methoxyfenozide; Metobromuron; Metribuzin; Mevinphos; Mexacarbate; Monocrotophos; Monolinuron; Myclobutanil; Neburon; Nitenpyram; Nuarimol; Omethoate; Oxadixyl; Oxamyl;	SOP102 rev.1 based on QUECHERS AOAC 2007.01	P



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Chemical	Food & Food Products	Paclobutrazol; Penconazole; Pencycuron; Phenmedipham; Picoxystrobin; Piperonyl-butoxide; Pirimicarb; Prochloraz; Promecarb; Prometon; Prometryn; Propamocarb; Propargite; Propiconazole (stereo isomer); Propoxur; Pymetrozine; Pyracarbolid; Pyraclostrobin; Pyridaben; Pyrimethanil; Pyriproxyfen; Puinoxyfen; Rotenone; Secbumeton; Siduron; Simetryn; Spinetoram; Spinosyn A & D; Spirodiclofen; Spiromesifen; Spirotetramat; Spiroxamine; Tebuconazole; Tebufenozide; Tebufenpyrad; Tebuthiuron; Teflubenzuron; Temephos; Terbumeton; Terbutryn; Tetraconazole; Thiabendazole; Thiacloprid; Thidiazuron; Thiobencarb; Thiofanox; Thiophanate-methyl; Triadimefon; Triadimenol (isomer); Trichlorfon; Tricyclazole; Trifloxystrobin; Triflumizole; Triflumuron; Triticonazole; Vamidothion; Zoxamide	SOP102 rev.1 based on QUECHERS AOAC 2007.01	P
		Determination of Aflatoxins B1, B2, G1 and G2 by LC MS/MS Method	SOP099 rev.2	P
		Determination of Aflatoxin M1 by LC MS/MS Method	SOP100 rev. 1 based on AOAC 2000.08	P
		Determination of Preservatives by HPLC-PDA Method: Benzoic Acid, Sorbic Acid	SOP101 rev. 1	P



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Chemical	Materials in Contact with Foodstuff	Overall Migration by Total Immersion and Article Filling Using Aqueous Simulants and Fatty Food Simulants	SOP 081A rev.1, SOP081B rev.2 & SOP081C rev.1 based on BS EN 1186-1:2002; BS EN 1186-3:2002; BS EN 1186-9:2002 ;BS EN 1186-14:2002	P
		Metals Migration: <ul style="list-style-type: none"> • Barium (Ba), • Cobalt (Co), • Copper (Cu), • Iron (Fe), • Lithium (Li), • Manganese (Mn), • Zinc (Zn), • Silver (Ag), • Aluminum (Al), • Beryllium (Be), • Cadmium (Cd), • Chromium (Cr), • Magnesium (Mg), • Molybdenum (Mo), • Nickel (Ni), • Lead (Pb), • Antimony (Sb), • Tin (Sn), • Titanium (Ti),, • Thallium (Tl), • Vanadium (V) 	SOP082, rev.1 based on HS1003	P
	Concrete	Determination of Chloride Content of Hardened Concrete	BS 1881-124:2015 +A1:2021; Cl. 12.1	P
		Determination of Sulphate Content of Hardened Concrete	BS 1881-124:2015 +A1:2021; Cl. 12.2	
	Cement	Loss on Ignition	BS EN 196-2: 2013 Cl. 4.4.1	P
		Insoluble Residue	BS EN 196-2: 2013 Clause 4.4.3	
		Chloride Content	BS EN 196-2: 2013 Cl. 4.5.16	
		Sulphate Content	BS EN 196-2: 2013 Clause 4.4.2	



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Chemical	Cement	Silicon Dioxide SiO ₂ Aluminum Oxide Al ₂ O ₃ Ferric Oxide Fe ₂ O ₃ Calcium Oxide CaO Magnesium Oxide MgO Sodium Oxide Na ₂ O Potassium Oxide K ₂ O Titanium Oxide TiO ₂ Manganese Oxide Mn ₂ O ₃ Phosphorus Oxide (P ₂ O ₅) Equivalent Alkali Content (calculation) Tri-Calcium Aluminate (calculation)	BS EN 196-2: 2013, Cl 5	P
	Aggregate	Determination of Chloride Content (Acid Soluble)	BS EN 1744-5: 2006	P
		Determination of Sulphate Content (Acid Soluble)	BS EN 1744-1-2009+A1-2012	
		Organic Impurities in Fine Aggregates	ASTM C40-2020	
	Soil	Determination of pH Value of Soil	BS 1377-3:2018; Cl.12	P
		Determination of the Sulphate Content of Soil (Water Extract & Acid Extract)	BS 1377-3:2018; Cl. 7.3 / 7.6 ; BS 1377-3:2018; Cl. 7.9 / 7.6	
		Determination of the Chloride Content of Soil (Water Extract & Acid Extract)	BS 1377-3:2018; Cl. 9.2.2-9.2.5, 9.2.7; BS 1377-3:2018; Cl. 9.3	
		Determination of Carbonate Content	BS 1377-3-2018, Cl. 8.3	
		Determination of Organic Matter Content	BS 1377-3-2018 Cl. 4	



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Chemical	Soils & Sediments	Determination of Metals by ICP-OES: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, V, Zn, Hg, B, Tl, Sr	SOP005, rev.2 & SOP004, rev.2, based on APHA3120 (B) 23 rd edition & USEPA 3050B	P
		Determination of Metals by ICP MS: <ul style="list-style-type: none"> • Arsenic (As), • Barium (Ba) • Beryllium (Be), • Cadmium (Cd), • Cobalt (Co), • Chromium (Cr), • Copper (Cu), • Manganese (Mn), • Molybdenum (Mo), • Nickel (Ni), • Lead (Pb), • Vanadium (V), • Thallium (Tl), • Titanium (Ti) 	SOP 129 rev. 1 (ICP MS) & SOP004 rev.2	P
		Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC MS): <ul style="list-style-type: none"> • Acetone • Acetonitrile • Acrylonitrile • Allyl chloride (3-chloropropene) • Benzene • Bromobenzene • Bromochloromethane • Bromodichloromethane • Bromoform • Bromomethane • Carbon disulfide 	SOP013, rev.2 & SOP015, rev.0, based on USEPA 8260C & USEPA 5035A	P



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Chemical	Soils & Sediment	<ul style="list-style-type: none"> Carbon Tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Chloroprene (2-chloro-1,3-butadiene) cis-1,2-Dichloroethene cis-1,3-Dichloropropene cis-1,4-Dichloro-2-butene Dibromochloromethane Dibromomethane Dichlorodifluoromethane Diethyl ether Ethyl methacrylate Ethylbenzene Hexachlorobutadiene Iodomethane (methyl iodide) Isopropylbenzene m & p- Xylene Methacrylonitrile Methyl acrylate Methyl methacrylate Methylene chloride (dichloromethane) 	SOP013, rev.2 & SOP015, rev.0, based on USEPA 8260C & USEPA 5035A	P
		<ul style="list-style-type: none"> Naphthalene n-Butylbenzene n-Propylbenzene o-Xylene Pentachloroethane p-Isopropyltoluene (p-Cymene) Propionitrile sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Tetrahydrofuran 	SOP013, rev.2 & SOP015, rev.0, based on USEPA 8260C & USEPA 5035A	P



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Chemical	Soils & Sediment	<ul style="list-style-type: none"> • Toluene • trans-1,2-Dichloroethene • trans-1,3-Dichloropropene • trans-1,4-Dichloro-2-butene • Trichloroethene • Trichlorofluoromethane • Vinyl chloride • 1,1,1,2-Tetrachloroethane • 1,1,1-Trichloroethane • 1,1,2,2-Tetrachloroethane • 1,1,2-Trichloroethane • 1,1,2-Trichlorotrifluoroethane (CFC-113) • 1,1-Dichloroethane • 1,1-Dichloroethene • 1,1-Dichloropropene • 1,2,3-Trichlorobenzene • 1,2,3-Trichloropropane • 1,2,4-Trichlorobenzene • 1,2,4-Trimethylbenzene • 1,2-Dibromo-3-Chloropropane • 1,2-Dibromoethane (EDB) • 1,2-Dichlorobenzene • 1,2-Dichloroethane • 1,2-Dichloropropane • 1,3,5-Trimethylbenzene • 1,3-Dichlorobenzene • 1,3-Dichloropropane • 1,4-Dichlorobenzene • 2,2-Dichloropropane • 2-Butanone (MEK) • 2-Chlorotoluene • 2-Hexanone • 4-Chlorotoluene • 4-Methyl-2-pentanone (MIBK) 	SOP013, rev.2 & SOP015, rev.0, based on USEPA 8260C & USEPA 5035A	P



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Chemical	Soils & Sediments	Pesticides Residue in soil & Sediments by LC-MS/MS: <ul style="list-style-type: none"> • Acetamiprid, • Acibenzolar-S-methyl, • Aldicarb, • Aldicarb-sulfone (Aldoxycarb), • Aldicarb-sulfoxide, • Ametryn, • Aminocarb, • Azoxystrobin, • Benalaxyl, • Bendiocarb, • Benzoximate, • Bitertanol (diastereo isomers), • Boscalid, • Bromuconazole isomers, • Bupirimate, • Buprofezin, • Butafenacil, • Carbaryl (NAC), • Carbendazim, • Carbetamide, • Carbofuran, • Carbofuran-3-hydroxy(3-Hydroxycarbofuran), • Carboxin, • Chlorantraniliprole, • Chlorfluazuron, • Chloroxuron, • Chlortoluron, • Clethodim (isomer), • Clofentezine, • Clothianidin, • Cyazofamid, • Cycluron, • Cymoxanil, • Cyproconazole isomers, • Cyprodinil, 	SOP 105, Rev.2	P



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Chemical	Soils & Sediments	<ul style="list-style-type: none"> • Cyromazine, • Desmedipham, • Diclobutrazol (stereo isomer), • Dicrotophos, • Diethofencarb, • Difenconazole (isomer), • Diflubenzuron, • Dimethoate, • Dimethomorph (E, Z), • Dimoxystrobin, • Diniconazole, • Dioxacarb, • Diuron, • Emamectin benzoate b1a, • Epoxiconazole, • Etaconazole isomers, • Ethiofencarb, • Ethiprole, • Ethirimol, • Ethofumesate, • Etoxazole, • Famoxadone, • Fenamidone, • Fenarimol, • Fenazaquin, • Fenbuconazole, • Fenhexamide, • Fenobucarb, • Fenoxycarb, • Fenpropimorph, • Fenpyroximate, • Fenuron, • Fipronil, • Flonicamid, • Fluazinam, • Flubendiamide, • Fludioxonil, • Flufenacet, • Flufenoxuron, 	SOP 105, Rev.2	P



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Chemical	Soils & Sediments	<ul style="list-style-type: none"> • Fluometuron, • Fluoxastrobin, • Fluquinconazole, • Flusilazole, • Flutolanil, • Flutriafol (isomer), • Forchlorfenuron, • Formetanate hydrochloride, • Fuberidazole, • Furalaxyl, • Furathiocarb, • Halofenzoide, • Hexaconazole, • Hexythiazox, • Hydromethylnon, • Imazalil, • Imidacloprid, • Indoxacarb, • Ipconazole isomer, • Iprovalicarb, • Isoprocab, • Isoproturon, • Kresoxim-methyl, • Linuron • Lufenuron, • Mandipropamid, • Mefenacet, • Mepanipyrim, • Mepronil, • Mesotrione, • Metafumizone, • Metalaxyl, • Metconazole, • Methiocarb, • Methomyl, • Methoprotryne, • Methoxyfenozide, • Metobromuron, • Metribuzin, 	SOP 105, Rev.2	P



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Chemical	Soils & Sediments	<ul style="list-style-type: none"> • Mevinphos isomers, • Mexacarbate, • Monocrotophos, • Monolinuron, • Myclobutanil, • Neburon, • Nitenpyram, • Novaluron, • Nuarimol, • Omethoate, • Oxadixyl, • Oxamyl, • Paclobutrazol, • Penconazole, • Pencycuron, • Phenmedipham, • Picoxystrobin, • Piperonyl-butoxide, • Pirimicarb, • Prochloraz, • Promecarb, • Prometon, • Prometryn, • Propamocarb, • Propargite, • Propham, • Propiconazole (stereo isomer), • Propoxur, • Pymetrozine, • Pyracarbolid, • Pyraclostrobin, • Pyridaben, • Pyrimethanil, • Pyriproxyfen, • Quinoxyfen, • Rotenone, • Secbumeton, • Siduron, 	SOP 105, Rev.2	P



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Chemical	Soils & Sediments	<ul style="list-style-type: none"> • Simetryn, • Spinetoram J, • Spinosyn A, • Spinosyn D, • Spirodiclofen, • Spiromesifen, • Spirotetramat, • Spiroxamine, • Tebuconazole, • Tebufenozide, • Tebufenpyrad, • Tebuthiuron, • Teflubenzuron, • Temephos, • Terbumeton, • Terbutryn, • Tetraconazole, • Thiacloprid, • Thiamethoxam, • Thidiazuron, • Thiofanox, • Thiobencarb, • Thiophanate-methyl, • Triadimefon, • Triadimenol (isomer), • Trichlorfon, • Tricyclazole, • Trifloxystrobin, • Triflumizole, • Triflumuron, • Triticonazole, • Vamidothion, • Zoxamide 	SOP 105, Rev.2	P
	Soil	Fosetyl aluminum by LC-MS/MS	SOP 110	P
		Glyphosate by LC-MS/MS	SOP 127	P
		Formaldehyde by HPLC-PDA	SOP 128 rev. 1	P



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Chemical	Soils & Sediments	Petroleum Hydrocarbons : Diesel Range Petroleum Hydrocarbons (DRO)	USEPA 8015D & USEPA 3550C	P
		Petroleum Hydrocarbons : Gasoline Range Petroleum Hydrocarbons (GRO)	USEPA 8015D & USEPA 5035A	
		Moisture, Total Solids, Fixed Solids, Volatile Solids	APHA 2540 G, 23 rd edition	
	Ground Water	pH	USEPA 9045 D	P
		Determination of the Sulphate Content of Ground Water	BS 1377-3:2018 Cl. 7.8.3 / 7.6	
		Determination of the Chloride Content of Ground Water	BS 1377-3:2018; Cl. 9.2.7	
		Determination of the pH Value	BS 1377-3:2018; Cl. 12	
	Ambient Water, Drinking Water, Waste Water	Determination of Metals by ICP-OES: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, V, Zn, B, Tl, Sr and Hg(waste water only)	SOP005, rev.2 & SOP003, rev.1, based on APHA 3120 (B) 23 rd edition & APHA 3030 B & F 23 rd edition	P
	Drinking Water	Determination of Mercury in Drinking Water	SOP012, rev.0	P
	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	Determination of Metals by ICP MS: <ul style="list-style-type: none"> Silver (Ag), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Cobalt (Co), Chromium (Cr), Copper (Cu), Manganese (Mn), Molybdenum (Mo), 	SOP 129 rev. 1 (ICP MS) &SOP003	P



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Chemical	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	<ul style="list-style-type: none"> Nickel (Ni), Lead (Pb), Antimony (Sb), Selenium (Se), Strontium (Sr) Tin (Sn), Vanadium (V), Mercury (Hg), Thallium, Titanium, Zinc 	SOP 129 rev. 1 (ICP MS) &SOP003	P
	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	Pesticides in Water: <ul style="list-style-type: none"> 2-Hydroxy atrazine, 3-Hydroxy carbofuran, Atrazine desethyl, Dimethoate, Aldicarb, Carbofuran, Chortoluron, Isoproturon, Terbutylazine, 2,4-D MCPA, Dichorprop MCPP (Mecoprop) 2,4,5-T 2,4-DB 2,4,5-TP (Fenoprop), Dinoseb Pentachlorophenol 	SOP126 (LC-MS/MS)	P



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Chemical	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	Pesticides in Water: <ul style="list-style-type: none"> • Dichlorvos • Eptc, • Butylate • Mevinphos • Vernolate • Etridiazole, • Pebulate • Tebuthiuron • Molinate • Propachlor • Monocrotophos • Cycloate • Ethoprophos • Chlorpropham • Trifluralin • Sulfotep • Phorate • alphaBHC, • Atraton • Dimethoate • Simazine, • Prometon, • Atrazine • Propazine • beta-BHC • Lindane • Propyzamide • Disulfoton • Diazinone • Terbacil • delta.-BHC • Metribuzin, • Methyl Parathion 	SOP107 rev.1 (GC-MS)	P



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Chemical	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	<ul style="list-style-type: none"> • Simetryne • Heptachlor • Alachlor, • Ametryn • Fenchlorphos • p,p'-DDD, • (Ronnel), • Prometryne • Terbutryn • Parathion • Bromacil • Malathion, • Aldrin, • Metolachlor, • Fenthion • Chlorpyrifos • Triadimefon • Cyanazine, • Trichloronat • Diphenamide, • Pendimethalin • Heptachlor epoxide • Merphos • o,p'-DDE, • trans-Chlordane • Tetrachlorvinphos • Endosulfan-alpha • Butachlor • cis-Chlordane • Napropamide • Prothiofos • p,p'-DDE • Dieldrin • o,p'-DDD 	SOP107 rev.1 (GC-MS)	P



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Chemical	Water (Potable Water, Drinking Water, Surface Water, Ground Water, Sea Water)	<ul style="list-style-type: none"> • Endrin • Endosulfan-beta • Fensulfothion • ,o,p'-DDT • Endrin aldehyde • Sulprofos • Norflurazon • Endosulfan sulfate • ,p,p'-DDT, • Hexazinone • Iprodione • Endrin ketone • EPN • Methoxychlor • Azinphos-methyl • Mirex • Fenarimol • Coumaphos • beta-Cyfluthrin-I-II • Fluridone, • Demeton • Mkg-264 • Cypermethrin 	SOP107 rev.1 (GC-MS)	P
Chemical	Ambient Water, Drinking Water, Waste Water	Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC MS): <ul style="list-style-type: none"> • Acetone • Acetonitrile • Acrylonitrile • Allyl chloride (3-chloropropene) • Benzene • Bromobenzene • Bromochloromethane • Bromodichlo • Bromoform • Bromomethane 	SOP013, rev.2 & SOP014, rev.0 based on USEPA 8260C & USEPA 5030C	P



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Chemical	Ambient Water, Drinking Water, Waste Water	<ul style="list-style-type: none"> • Carbon disulfide • Carbon Tetrachloride • Chlorobenzene • Chloroethane • Chloroform • Chloromethane • Chloroprene (2-chloro-1,3-butadiene) • cis-1,2-Dichloroethene • cis-1,3-Dichloropropene • cis-1,4-Dichloro-2-butene • Dibromochloromethane • Dibromomethane • Dichlorodifluoromethane • Diethyl ether • Ethyl methacrylate • Ethylbenzene • Hexachlorobutadiene • Iodomethane • Isopropylbenzene • m & p- Xylene • Methacrylonitrile • Methyl acrylate • Methyl methacrylate • Methylene chloride (dichloromethane) • MTBE (Methyl-tert-butyl-ether) • Naphthalene • n-Butylbenzene • n-Propylbenzene • o-Xylene • Pentachloroethane • p-Isopropyltoluene (p-Cymene) • Propionitrile • sec-Butylbenzene • Styrene tert-Butylbenzene 	SOP013, rev.2 & SOP014, rev.0 based on USEPA 8260C & USEPA 5030C	P



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Chemical	Ambient Water, Drinking Water, Waste Water	<ul style="list-style-type: none"> • Tetrachloroethene • 1,2,4-Trimethylbenzene • 1,3,5-Trimethylbenzene • Tetrahydrofuran • Toluene • trans-1,2-Dichloroethene • trans-1,3-Dichloropropene • trans-1,4-Dichloro-2-butene • Trichloroethene • Trichlorofluoromethane • Vinyl chloride • 1,1,1,2-Tetrachloroethane • 1,1,1-Trichloroethane • 1,1,2,2-Tetrachloroethane • 1,1,2-Trichloroethane • 1,1,2-Trichlorotrifluoroethane (CFC-113) • 1,1-Dichloroethane • 1,1-Dichloroethene • 1,1-Dichloropropene • 1,2,3-Trichlorobenzene • 1,2,3-Trichloropropane • 1,2,4-Trichlorobenzene • 1,2,4-Trimethylbenzene • 1,2-Dibromo-3-Chloropropane • 1,2-Dibromoethane (EDB) • 1,2-Dichlorobenzene • 1,2-Dichloroethane • 1,2-Dichloropropane • 1,3,5-Trimethylbenzene • 1,3-Dichlorobenzene • 1,3-Dichloropropane • 1,4-Dichlorobenzene • 2,2-Dichloropropane • 2-Butanone (MEK) • 2-Chlorotoluene • 2-Hexanon 	SOP013, rev.2 & SOP014, rev.0 based on USEPA 8260C & USEPA 5030C	P



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Chemical	Ambient Water, Drinking Water, Waste Water	<ul style="list-style-type: none"> 4-Chlorotoluene 4-Methyl-2-pentanone (MIBK) 	SOP013, rev.2 & SOP014, rev.0 based on USEPA 8260C & USEPA 5030C	P
		Petroleum Hydrocarbons: Diesel Range Petroleum Hydrocarbons (DRO)	USEPA 8015D & USEPA 3510C	
		Petroleum Hydrocarbons: Gasoline Range Petroleum Hydrocarbons (GRO)	USEPA 8015D & USEPA 5030C	
		pH	APHA 4500 H+B 23 rd edition	
		Chloride Content	APHA 4500 CI-B 23 rd edition	
		Sulphate Content	APHA 4500 S04 2- C 23 rd edition	
		Total Dissolved Solids	APHA 2540 C 23 rd edition	
		Total Suspended Solids	APHA 2540 D 23 rd edition	
		Biological Oxygen Demand, 5 Days BOD Test	APHA 5210 B 23 rd edition	
		Total & Dissolved Organic Carbon (TOC) By High Temperature Combustion Method	APHA 5310 B 23 rd edition & SOP018	
		Total Dissolved Phosphorous	APHA 4500P(C) 23 rd edition	
		Total Kjeldahl Nitrogen(TKN)	SOP098, rev. 0, based on APHA 4500 Norg(C) 23 rd edition	
		Total Residual Chlorine	HACH Spectroscopy USEPA DPD Method 8167	
		Residual Free Chlorine	HACH Spectroscopy USEPA DPD Method 8021 P	
	Ambient Water, Drinking Water	Total Alkalinity to pH 4.4	APHA 2320 B 23 rd edition	P
		Carbonates & Bicarbonates	APHA 2320 B 23 rd edition	
		Chemical Oxygen Demand (COD)	APHA 5220 B 23 rd edition	
Oil & Grease		APHA 5520 B 23 rd edition		
Calcium		APHA 3500 Ca B 23 rd edition		



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Chemical	Ambient Water, Drinking Water	Magnesium	APHA 3500 Mg B 23 rd edition	P
		Total Hardness as CaCO ₃	APHA 2340 C 23 rd edition	
		Electrical Conductivity @ 25 °C	APHA 2510 B 23 rd edition	
		Fluoride	APHA 4500 F- D 23 rd edition	
		Determination of Inorganic Anions in Water by Ion Chromatography: PO ₄ , Cl, F, NO ₂ , NO ₃ , SO ₄ , Br	APHA 4110B, 23 rd edition	
		Determination of Inorganic Anions in Water by Ion Chromatography: Bromate, Bromide, Chlorite, Chlorate	APHA 4110 D, 23 rd edition	
Environmental	Indoor Air Quality	Determination of Particulate Matter in Indoor Air	SOP044, rev. 2 using AEROCET 831 Mass Profiler based on EPA/600/R-14/159	S
		Nitrogen Dioxide (NO ₂)	SOP084, rev. 4 based on USEPA SECTION 01 81 09	
		Sulphur Dioxide (SO ₂)		
		Volatile Organic Compounds (VOC)		
		Formaldehyde – HCOH		
		Carbon Monoxide (CO)		
		Carbon Dioxide (CO ₂)		
		Hydrogen Sulphide (H ₂ S)		
		Oxygen (O ₂)		
		Ozone (O ₃)		
		Ammonia (NH ₃)		
		Temperature		
		Relative Humidity		
		Sampling by Impaction	SOP085 rev.1 - using SAS DUO 360 Air sampler	P
		Enumeration of Yeast & Mould	SOP085 rev.1 , documented in house method using Potato dextrose agar	
Total Colony count	SOP085 rev.1 , documented in house method using R2A agar			



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Environmental	Air Quality (Emissions from Stationary & Combustion Sources, Boilers & Incinerators)	Determination of Nitrogen Oxides (NO, NO ₂ , NO _x), CO, CO ₂ , SO ₂ , O ₂ , & CxHy Emissions from Stationary & Combustion Sources, Boilers & Incinerators Using Portable Flue Gas Analyzer	SOP046, rev. 4 based on USEPA CTM 34; USEPA Method 1; USEPA Method 7E; USEPA Method 6C; USEPA Method 20; ASTM D6522-20	S
	Outdoor Air Quality	Ambient Air Quality Monitoring for SO ₂ , CO, NO ₂ , NO _x , O ₃ and particulate matter (TSP, PM ₁ , PM _{2.5} and PM ₁₀)	SOP042, rev.4 based on EPA/600/R-14/159 & USEPA 40 CFR 58 Appendix E	
	Air Quality	Total Suspended Particulate Matter (TSPM, Respirable Suspended Particulate Matter (RSPM-PM ₁₀ , 4, 2.5 & 1)	SOP043, rev. 2 based on EPA/600/R-14/159	
	Noise	Occupational & Environmental Noise	SOP047, rev.2, based on ISO 1996: Part 1:2016 & ISO 1996: Part 2:2017,	
	Industrial Premises & other Workplaces	Determination of Heat Stress at Work Place	BS EN ISO 7243:2017, SOP086, rev.0	
Sampling / Microbiology	Drinking Water, Potable & Non-Potable Water	Microbiological Sampling of Water	SOP 073 rev.1 , based on APHA 9060A & APHA 9213B, 23rd Ed.	P / S
	Water	Sampling for Legionella Bacteria in Water System: Routine sampling	BS 7592:2008 Section#2	
	Food & Swab	Sampling of Food	SOP034, rev.1 , based on US FDA BAM Chapter 1, 2003 & CMMEF Chapter 2, 5 th edition	
	Food & Swab	Swab Sampling for Microbiological Analysis	SOP074, rev.4 based on ISO 18593:2018 & CMMEF Chapter 3, 5 th edition	
Microbiology	Food & Swab	Enumeration of Staphylococcus Aureus	Method 3.5.1 CCFRA, 5 th Edition (CCFRA - Campden & Chorleywood Food Research Association)	P



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Microbiology	Swab	Aerobic Plate Count	US FDA Bacteriological Analytical Manual (BAM) Chapter #3, 2001	P/S	
	Swab	Enumeration of Total Coliforms	Method 2.2.1 CCFRA, 5th Edition	P/S	
	Swab	Enterobacteriaceae	SOP116, rev.1 based on ISO 21528-2:2017	P	
	Food & Food Products	Enumeration of Yeast & Mould	Enumeration of Yeast & Mould	Method 2.1.1 CCFRA 5 th Edition	P
			Enumeration of Bacillus Cereus	US FDA BAM Chapter 14, 2020	
			Detection of Vibrio Parahaemolyticus	Method 3.8.2 CCFRA, 5 th Edition	
			Enumeration of Clostridium Perfringenes	Method 3.6.1, CCFRA, 5 th Edition	
			Detection of E. coli 0157-H7	SOP 075 rev.1 , based on AOAC 2000.14 (Reveal test kit method)	
			Detection of Listeria sp.	SOP076, rev.0 (Reveal test kit method)	
			Aerobic Plate Count	US FDA Bacteriological Analytical Manual (BAM) Chapter #3, 2001.	
			Enumeration of Enterobacteriaceae	Method 2.3.1, CCFRA, 5 th Edition.	
			Enumeration of Coliforms by Colony Count Method	Method 2.2.1, CCFRA, 5 th Edition.	
			Enumeration of Coliforms by MPN Method	Method 9.71, CMMEF 5 th Edition. (CMMEF - Compendium of Methods for the Microbiological Examination of Foods).	
			Enumeration of E-Coli by MPN Method	Method 9.91, CMMEF, 5 th Edition.	
			Detection of Salmonella spp.	Method 3.1.2, CCFRA, 5 th Edition.	



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Microbiology	Drinking Water	Total Coliforms (IDEXX Method)	SOP016, rev.5, based on APHA 9223B 23 rd edition by IDEXX COLILERT & COLILERT-18	P	
	Drinking Water, Potable & Non Potable Water	Detection & Enumeration of Legionella	ISO 11731:2017 Matrix A Procedure 5,7; Matrix B Procedure 8,9,10; Matrix C Procedure 1,14		
		Enumeration of Pseudomonas Aeruginosa	ISO 16266:2006		
	Ambient Water, Drinking Water, Waste Water	Total Coliforms (Membrane Filtration M-d)	APHA 9222B 23 rd Ed.		
		Fecal Coliforms (IDEXX Method)	SOP016, rev.5, based on APHA 9223B 23 rd edition by IDEXX COLILERT-18		
		Fecal Coliforms (Membrane Filtration M-d)	APHA 9222D 23 rd Ed.		
		E. coli (IDEXX Method)	SOP016 , rev. 5, based on APHA 9223B 23 rd edition by IDEXX COLILERT & COLILERT-18 (Drinking Water, Waste Water, Ambient Water)		
		E. coli (Membrane Filtration M-d)	APHA 9222B & APHA 9222H, 23 rd Edition.		
	Water	Enterococci (IDEXX Method)	SOP017, rev.2 , based on ASTM D6503-19 by IDEXX Enterolert		P
		Enumeration of Enterococci (MF Method)	APHA 9230 C 23 rd Edition.		
		Heterotrophic plate count by Enzyme Substrate Method	APHA 9215 E 23 rd Edition.		
		Heterotrophic plate count by Pour Plate Method	APHA 9215 B 23 rd Edition.		
	Raw & Potable Water	Yeast & Mould	APHA9610D		S
		Total Colony Count at 37 °C	Method 1.1.4, CCFRA, 5 th Edition.		



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Geotechnical	Field Sampling & Testing	Standard Penetration Test (SPT)	BS EN ISO 22476-3:2005 +A1:2011; BS 1377-9:1990, Cl. 3.3	S
		Soil Sampling	BS 5930:2015 +A1:2020 CL. 25.6	
		Rotary Core Drilling	BS 5930:2015 +A1:2020, Sec 6	
		Ground Water Level Measurement	BS 5930:2015 +A1:2020, Cl. 52	
		Ground Water Sampling	BS 5930:2015 +A1:2020 Cl. 26.4	
	Rock Cores	Unconfined Compressive Strength Including preparation of rock cores	ASTM D7012-2014 e1, Method C & ASTM D4543-2019	P
		Determination of the Point Load Strength Index of Rock & Application to Rock Strength Classifications Point Load Strength Index	ASTM D5731-16	
		Determination of Water (moisture) Content of Soil & Rock by Mass	ASTM D 2216 -2019	
		Rock Quality designation	BS 5930:2015 +A1:2020, Cl 36	P / S
		Core Recovery	BS 5930:2015 +A1:2020, Cl 36	
	Description & Classification	Description & Classification of Rocks	BS 5930:2015 +A1:2020, Sec 6	P
		Soil Description	BS 5930:2015 +A1:2020, Sec 6	
	Soil	Determination of Water Content of Soil	BS EN ISO 17892-1:2014 BS 1377-2:1990 Amd.9027: 96, Cl.3.2	P
		Determination of Liquid Limit, Plastic Limit and Plasticity Index of Soil	BS EN ISO 17892-12: 2018, Cl. 5.3, 5.4, & 5.5 BS 1377-2:1990 Amd. 9027-96, Cl. 4.3, 4.5, 5.3 & 5.4	
		Determination of Liquid Limit, Plastic Limit and Plasticity Index of Soil	ASTM D 4318-17e1	
		Determination of Particle Size Distribution by Hydrometer Method	BS EN ISO 17892-4:2016, Cl. 5.3 BS 1377-2:1990 (Amd.9027:96), Cl.9.5	



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Geotechnical	Soil	Determination of Particle Size Distribution Wet Sieving Method	BS EN ISO 17892-4:2016; C. 5.2 BS 1377-2:1990 Amd. 9027- 96, Cl.9.2	P	
		Particle Size Distribution - Dry Sieving Method	BS EN ISO 17892-4 :2016, Cl. 5.2 BS 1377-2 :1990 Cl.9.3 Amd. 9027-96		
	Reporting	Reporting	BS 5930:2015 +A1:2020, Section 10		
	Soil & Rock	Water Permeability Testing Using open system - Falling Head	Standard Test Method for Prebored Pressure Meter Testing in Soils and Rock - High Pressure Meter (OYO Elastmeter-2)	SOP096, rev. 0, based on BS EN ISO 22282-2:2012	S
			Electrical Cone and Piezocone Penetration Testing (CPTU)	SOP092, rev. 0 based on ASTM D4719-07	
			Water Pressure Testing Rocks - Packer Method	SOP087, rev. 0 BS EN ISO 22476-1:2012	
				SOP093, rev. 0, based on BS EN ISO 22282-3:2012	
Geophysical Testing	Soil Materials	Crosshole Seismic Testing	ASTM D4428-14	S	
		Downhole Seismic Testing	ASTM D7400-19		
		Multi-channel Analysis of Surface Waves (MASW)	SOP094, rev. 0		
		Electrical Resistivity Tomography (ERT)	SOP095, rev. 0		
Mechanical/ Physical	Soil	Determination of Dry Density Moisture Content Relationship using 4,5kg Rammer	BS 1377-4:1990 Amd. 13925 - 02, Cl. 3.5 & 3.6	P	
		Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Efforts	ASTM D1557-12e1		
		Determination of California Bearing Ratio (CBR)	BS 1377-4:1990 Amd. 13925 - 02, Cl. 7.2. 3.2.		



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Mechanical/ Physical	Soil	Determination of In-situ Density by Sand Replacement Method (Large Pouring Cylinder)	BS 1377-9:1990 Amd. 8264-95, Cl. 2.2	P/S
		Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method	ASTM D 1556/ D1556M-15e1	S
		Particle Size Analysis of Soils	AASHTO T88-2020	P
		Moisture-Dry Density Relationship Test	AASHTO T180-2021	P
		California Bearing Ratio (CBR) Test	AASHTO T193-2013	P
		Determining the Liquid Limit, Plastic Limit and Plasticity Index of Soils	AASHTO T89-2013 and AASHTO T90-2020	P
		Sand Equivalent Value	AASHTO T176-2017	P
	Concrete	Compressive Strength of Cubes including curing	BS EN 12390-3:2019 & BS EN 12390-2:2019	P
		Density of Hardened Concrete	BS EN 12390-7:2019	
		Water Absorption of Concrete	BS1881- 122:2011+A1:2020	
		Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration	ASTM C1202:2019	
		Water Permeability	DIN 1048-5:1991	
		Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)	ASTM C293/C293M: 16	
		Depth of Penetration of Water Under Pressure	BS EN 12390-8:2019	
		Initial Surface Absorption of Concrete	BS 1881-208:1996	
		Testing concrete in structures. Cored specimens. Taking, examining and testing in compression	BS EN 12504-1:2019	



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Mechanical/ Physical	Aggregate	Determination of particle size distribution	BS 812-103.1:1985	P
		Sieve Analysis of Fines and Coarse Aggregate	ASTM C136/C136M-19	
		Determination of particle size distribution — Sieving method	BS EN 933-1-2012	
		Finer than 75 -µm (No.200) Sieve in Mineral Aggregates by washing	ASTM C117-17	
		Flakiness index of coarse aggregate	BS 812-105.1:1989	
		Determination of particle shape - Flakiness Index	BS EN 933-3:2012	
		Elongation index of coarse aggregate	BS 812-105.2:1990	
		Determination of moisture content	BS 812-109:1990	
		Determination of particle densities & water absorption	BS 812-2: 1995 (Amd.10379 -99) Cl. 5.3, 5.4 & 5.5	
		Relative Density (Specific Gravity) and Absorption of Fine Aggregate	ASTM C128-15	
		Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate	ASTM C127-15	
		Determination of Shell Content in Course Aggregates	BS EN 933-7:1998	



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Mechanical/ Physical	Aggregate	Soundness of Aggregates using Sodium Sulphate & Magnesium Sulphate	ASTM C88-18	P
		Clay Lumps and Friable Particles	ASTM C 142-17	
		Ten Percent Fines Value	BS 812-111:1990	
		Aggregate Impact Value (AIV)	BS 812-112:1990	
		Determination of Aggregate Crushing Value (ACV)	BS 812-110:1990	
		Determination of Sand Equivalent	ASTM D 2419-14	
		Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	ASTM C 131-20	
		Degradation of Large Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	ASTM C535-16	
		Drying Shrinkage	BS EN 1367-4-2008	
		Lightweight Particles in Aggregate	ASTM C 123-14	
		Sieve Analysis of Fine and Coarse Aggregates	AASHTO T27-2020	
		Materials Finer Than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing	AASHTO T-11 (2020)	



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Testing Field	Materials/ Products tested	Type of test/ Test parameter/ Properties measured/Range of measurement	Test Method (Standard, Internal Procedure, Technique)	Permanent lab (P) / Client-site (S)
Mechanical/ Physical	Cement	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency	BS EN 196-1:2016	P
		Determination of Strength	BS EN 196-1:2016	
		Consistency of Cement	BS EN 196-3: 2016, Cl. 5	
		Setting Time of Cement	BS EN 196-3:2016, Cl. 6	
		Soundness of Cement	BS EN 196-3: 2016, Cl. 7	
		Determination of fineness, Air Permeability method	BS EN 196-6:2018	
		Heat of Hydration – Solution Method	BS EN 196-8:2010	
		Method of testing cement – Determination of specific gravity	BS EN 196-6: 2018	
		Flexural Strength	BS EN 196-1:2016	
		Air Content	BS EN 413-2:2016	
		Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency	ASTM C305-20	
		Compressive Strength of Hydraulic Cement Mortars	ASTM C109/C109M-21	
		Autoclave Expansion of Hydraulic Cement	ASTM C151/C151M-18	
		Air Content of Hydraulic Cement Mortar	ASTM C185-20	
		Heat of Hydration of Hydraulic Cement	ASTM C186-17	
Normal Consistency of Hydraulic Cement Paste	ASTM C187-16			



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Mechanical/ Physical	Cement	Density of Hydraulic Cement	ASTM C188-17	P
		Time of Setting of Hydraulic Cement by Vicat Needle	ASTM C191-21	
		Fineness of Hydraulic Cement by Air-Permeability Apparatus	ASTM C204-18e1	
		Early Stiffening of Hydraulic Cement (Paste Method) - False Set	ASTM C 451-19	
		Expansion of Hydraulic Cement Mortar Bar	ASTM C1038/C1038M-19	
	Steel	Steel for the Reinforcement of Concrete. Tensile Properties & Elongation	BS 4449: 2005+A3: 2016 Clause 7.2.3 BS EN ISO 15630-1: 2019; Clause 5 BS EN ISO 6892-1: 2019	P
		Steel for the Reinforcement of Concrete, Bend performance - Re bend Test	BS 4449: 2005+A3: 2016; Clause 7.2.5 BS EN ISO 15630-1-2019; Clause 7	
		Bend Test, Carbon steel bars for the reinforcement of concrete	BS 4449:1988, App C, Cl. 1.6.1	
	Asphalt	Quantitative extraction of bitumen from bituminous paving mixture	ASTM D2172/ D2172M-2017	P
		Quantitative extraction of bitumen from bituminous paving mixture	AASHTO T164-2014	
		Preparation of Asphalt Mixture Specimens Using Marshall Apparatus	ASTMD6926-20	
		Marshall Stability and Flow of Asphalt Mixtures	ASTM D6927-15	
		Resistance to plastic flow mixtures by bituminous apparatus	AASHTO T245-15	



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Mechanical/ Physical	Asphalt	Specific Gravity, Density and Water Absorption of Non-Absorptive Compacted Asphalt Mixtures	ASTM D2726-21	P
		Specific Gravity of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface Dry Specimens	AASHTO T166-16, Method A	
		Maximum Specific Gravity of Paving Mixture (Gmm)	AASHTO T209 :2020 ASTM D2041/ D2041M-19	
		Thickness of Compacted Bituminous Paving Mixture specimens	ASTM D3549-18	
		Distillation of Cutback Asphalt	ASTM D402-2014	
		Distillation of Emulsified Asphalt	ASTM D6997-2012 (Reapproved 2020)	
	Bitumen	Softening point of bitumen (Ring and ball apparatus)	ASTM D36/D36M-2014(2020)	P
		Penetration of Bituminous Material	ASTM D5-2020	
	Masonry Units	Measurement of Dimensions	BS EN 772-16:2011	P
		Determination of Compressive Strength	BS EN 772-1:2011 +A1:2015	
	Precast Concrete Paving Blocks	Test Procedure for-Concrete Interlock Paving Units – Absorption Testing	ASTM C140-22 Annex 4.5	P
		Measurement of Dimensions and Plan Area	BS 6717 Part 1 Annex A:1993	
		Compressive Strength	BS 6717 Part 1 Annex B :1993	
	Precast Concrete Kerbs	Abrasion Resistance	BS EN 1338-2003 Annex G	P
		Precast concrete flags, kerbs, channels, edgings and quadrants – Transverse Strength	BS 7263-1:1994 Cl. 12, Annex B	
		Precast concrete flags, kerbs, channels, edgings and quadrants – Water Absorption	BS 7263-1:1994 Cl. 13, Annex C	



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Mechanical/ Physical	Precast Concrete Kerbs	Concrete kerb units – Determination of water absorption	BS EN 1340: 2003 Incorporating Corrigendum No. 1, Annex E (normative)	P
		Bending of Kerbstone,	BS EN 1340-2003 Incorporating Corrigendum No. 1, Annex F	
	Ceramic/Porcelain Tiles	Length, Width, Thickness, Straightness of Sides, Rectangularity	BS EN ISO 10545-2 :2018, CL 4, CL 5, CL 6 & CL 7	
		Water Absorption	BS EN ISO 10545-3:2018	
		Breaking Strength & Modulus of Rupture	BS EN ISO 10545-4:2019	
		Resistance to Deep Abrasion	BS EN ISO 10545-6:2010	
		Resistance to Thermal Shock	BS EN ISO 10545-9:2013	
	Fresh Concrete	Sampling fresh concrete on site	BS EN 12350-1:2019	S
		Slump Test	BS EN 12350-2:2019	
		Slump Test	ASTM C143 / C143M -20	
		Temperature of Fresh Concrete	ASTM C1064/C1064M-17	S
		Bleeding of Fresh Concrete	ASTM C 232/C232M-20a	
		Air Content of Fresh Concrete	ASTM C 231/C231M-17a	
	GRP	Unit Weight of Fresh Concrete	ASTM C 138/C138M-17a	
		Method for Tensile Properties of Plastic	ASTM D638-2014	P
	Geotextile	Geotextile wide width tensile test	BS EN ISO 10319:2015	P
Determining Apparent Opening Size of a Geotextile		ASTM D4751-20a		
Static puncture test (CBR-Test) for Geotextiles and geotextile-related products		BS EN ISO 12236:2006		
Determination of puncture resistance of geomembranes & related products		ASTM D6241-14	P	



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Mechanical/ Physical	Geotextile	Determination of Grab breaking load & elongation	ASTM D4632/D4632M-15a	P
		Mass Per Unit Area	ASTM D 5261-10 (Reapproved 2018)	
		Nominal Thickness	ASTM D 5199-12(Reapproved 2019)	
		Trapezoidal Tear Strength	ASTM D 4533/D 4533 M-15	
	Waterproofing membrane	Determination of tensile properties. Bitumen sheets for roof waterproofing	BS EN 12311-1:2000	P
		Tensile tear strength of bituminous roofing membranes	ASTM D4073-06(2019)e1	
		Tear resistance of waterproofing membrane	ASTM D5147/D5147M-2018	
		Determination of resistance to tearing (Nail Shank)	BS EN 12310-1-2000	P
		Determination of Mass per unit area	BS EN 1849-1-2000	
		Determination of water absorption of plastics	ASTM D570-98(Reapproved 2018)	
Determination of puncture resistance of geomembranes & related products	ASTM E154- 08a (Reapproved 2019)			



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Mechanical/ Physical	Deep Foundations	Standard Test Method for Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing	ASTM D6760-16	S
		Standard Guide for Conducting Borehole Geophysical. Logging: Mechanical Caliper	ASTM D6167 - 19	
		Standard Test Method for High-Strain Dynamic Testing of Deep Foundations	ASTM D4945-17	
		Standard Test Method for Low Strain Impact Integrity Testing of Deep Foundations	ASTM D5882-16	
END				