



CONSTRUCTION MATERIALS TESTING

ITEM NO.	TEST	METHOD
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1	HARDENED CONCRETE	
1.01	Testing of hardened Concrete Shape, Dimension and other requirement for Specimens and molds	BSEN 12390-1
1.02	Compressive strength & Density of cube	BS EN 12390 -3&7
1.03	Depth of Penetration of water under pressure	BS EN 12390 -8/ DIN 1048-5
1.04	Water Absorption	BS 1881 : Part 122
1.05	Chloride ion Permeability (RCPT)	ASTM C 1202
1.06	Chloride Migration Coefficient	NT Build 492 (1999-11)
1.07	Initial surface absorption test (ISAT)	BS 1881 : Part : 208
1.08	Porosity	RILEM CPC
1.09	Ultra-Sonic Pulse Velocity test	BSEN 12504-4:2004
1.10	Water Absorption and Permeable voids of Concrete	ASTM C 642
1.11	Dry & Wet bulk Density, Water Absorption & Apparent Porosity	ASTM C948
1.12	Compressive strength of cylinders	ASTM C 39
1.13	Standards Practice of Capping of Cylindrical Specimen	ASTM C 617/617M
1.14	Determination of Rebound hammer – Schmidt hammer test	BS EN 12504-2/ASTM C-805/805M
1.15	Concrete cover meter	BS 1881 Part 204
1.16	Compressive strength of Hydraulic cement mortars	ASTM C109/C109M
1.17	Flexural strength of concrete beams	ASTM C 78/C78M/BSEN 12390-5
1.18	Splitting Tensile Strength of cylinders	ASTM C 496
1.19	Core Drilling 100mm dia @ 300mm depth	BS EN 12504-1
1.20	Core Drilling 150mm dia @ 300mm depth	BS EN 12504-1
1.21	Compressive strength of drilled cores	BS EN 12504-1/ ASTM C 42

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ITEM NO.	TEST	METHOD
1.22	Standard Practice for Sampling Materials for Shotcrete	ASTM C 1385/1385M
1.23	Compressive strength of young sprayed concrete	BS EN 14488-2
1.24	Energy Absorption capacity of Fibre reinforced slab specimen	BS EN 14488-5:2006
1.25	Flexural strength of Fibre reinforced concrete beam. First peak, ultimate and residual	BS EN 14488-3
1.26	Testing of Sprayed concrete – Bond strength of cores by direct tension	BS EN 14488-4
Chemical Analysis		
1.27	Sulphate content	BS 1881:Part:124, Test 10.3
1.28	Chloride content	BS 1881:Part:124, Test 10.2
1.29	Water Soluble Chloride in Mortar and Concrete	ASTM C1218/C1218M
1.30	Acid Soluble Chloride in Mortar and Concrete	ASTM C 1152/C1152M
1.31	Water Soluble Chloride Ion content in Concrete	AASHTO T 260,Test 5.3
2.0	MASONRY UNIT, KERBS, FLAGS AND PAVING BLOCKS	
2.01	Compressive strength of concrete hollow blocks and Masonry units	BS 6073- Part:1/ BSEN -772-1
2.02	Compressive strength of Paving blocks	BS 6717 – Part:1
2.03	Water Absorption of Paving blocks	BS EN 1338/CML 09-97
2.04	Measurement of Tensile Splitting Strength of Paving Blocks	BS EN 1338:2003 (Annex F)
2.05	Total Water Absorption of Kerbstone	BS EN 1340: 2003(Annex E)
2.06	Measurement of Bending and Breaking Load of Concrete Flags	BS EN 1339: 2003 (Annex - F)
2.07	Water Absorption of Kerb stone	BS 7263 Part:1
2.08	Transverse / Bending Strength of Kerbstone	BS EN 1340: 2003(Annex F)
2.09	Measurement of Dimensions of a Single Unit	BSEN 1340: 2003(E) ANNEX C (Normative)
2.10	Determination of Total Water Absorption Paving Flags & Slabs	BSEN 1339: 2003(E) ANNEX E



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ITEM NO.	TEST	METHOD
3.0	FRESH CONCRETE TESTING AT SITE/BATCHING PLANT	
3.01	Sampling of Freshly Mixed Concrete	ASTM C -172/172M/ BSEN 12350-1
3.02	Slump test and temperature	BS EN 12350-2/ ASTM C - 143/143 M/ ASTM C 1064
3.03	Air content	BS EN 12350-7/ ASTM C - 231
3.04	Making and Curing of Concrete specimen for Strength test	BS EN 12390-2
3.05	Setting Time of Concrete Mixtures	ASTM C 403/403M
3.06	Bleeding test	ASTM C 232/232M
3.07	Flow Table Test of Fresh Concrete	BS EN 12350 - 5
3.08	Density Test of Fresh Concrete	BS EN 12350 - 6 / ASTM C - 138
3.09	Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone method)	ASTM C 939
3.10	Concrete Mix Design and laboratory trial mixes. Client shall provide all material	ACI 211/ QCS 2014
4.0	BITUMINOUS MIXTURES (Bulk Samples)	
4.01	Binder content by Centrifuge extraction and Sieve analysis of aggregate obtained	ASTM D 2172 and ASTM C 136 / ASTM C 5444 or BS 812 Part: 103.1
4.02	Soluble Binder content	BS EN 12697-1
4.03	Theoretical maximum Specific gravity and Density	ASTM D2041/BS EN 12697-5
4.04	Density and compaction of Core samples	BS EN 12697-6 /ASTM D2726
4.05	Marshal Test on Plant mixed sample (4 Specimens shall be prepared and tested)	BS EN 12697-34 /ASTM D 6927. BS EN 12697-30/ASTM D 6926. BS EN 12697-29/ASTM D 3549. BS EN 12697-8/ ASTM D 2726
4.06	Specimen Preparation by Impact Compactor	BS EN 12697-30/ ASTM D 6926
4.07	Marshall Stability Test	BS EN 12697-34/ ASTM D 6927



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ITEM NO.	TEST	METHOD
4.08	Marshal Mix Design. (Client shall provide all material)	MS 2 Manual
4.09	Tensile Strength Ratio (TSR)	AASHTO T 283
4.10	Asphalt core drilling (pair of 2 cores)	BS EN 12697/ASTM D 5361M
4.11	Application Rate	ASTM D 2995
4.12	Sampling of Bituminous mixtures from site or batching plant	ASTM D979
4.13	Bulk Specific Gravity and density of Compacted Bituminous Mixtures using Coated samples.	ASTM D1188
4.14	Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods	ASTM D 2950/2950M
4.15	Standard Method for Indirect (IDT) Strength of Asphalt Mixtures	ASTM D 6931
4.16	Sieve Analysis of Mineral Filler for Bituminous Paving Mixture	ASTM D 546
5.0	ASPHALT BINDER TEST	
5.01	Standard Practice for Sampling of Asphalt Materials	ASTM D -140/D-140M
5.02	Standard Test Method for Penetration of Bituminous Materials	ASTM D -5/D-5M
5.03	Standard Test Method for Loss on Heating of Oil and Asphaltic Compounds	ASTM D - 6/ D- 6M
5.04	Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)	ASTM D -36/D-36M
5.05	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	ASTM D 92-16b
5.06	Standard Test Method for Ductility of Asphalt Materials	ASTM D -113
5.07	Standard Test Method for Solubility of Asphalt Materials by Trichloroethylene	ASTM D -2042
6.0	AGGREGATES – COARSE & FINE	
6.01	Sieve analysis	BS EN 933-1/ASTM C136
6.02	Materials Finer than 75 microns.	ASTM C 117
6.03	Clay lumps and friable particles	ASTM C 142



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ITEM NO.	TEST	METHOD
6.04	Standard Test Method for Flat Particles, elongated particles, or flat and elongated particles in coarse aggregate	ASTM D-4791
6.05	Standard Test Method for Determining the Percentage of Fractured Particles in	ASTM D-5821
6.06	Shape Index	BS EN 933-4
6.07	Flakiness Index	BS EN 933-3
6.08	Specific Gravity and water absorption	BS EN 1097-6/ASTM C127
6.09	Specific Gravity and absorption of fine aggregate	ASTM C 128
6.10	Los Angeles abrasion value	ASTM C 131
6.11	Soundness	ASTM C 88/ BSEN 1367
6.12	Moisture content	BS : 812: Part:109
6.13	Bulk density	BS : 812: Part:2
6.14	Shell content	BS EN 933-7
6.15	Aggregate impact value	BS : 812: Part:112
6.16	Aggregate crushing value	BS : 812: Part: 110
6.17	Ten percent fines value	BS : 812: Part: 111
6.18	Drying shrinkage	BS EN 1367- 4
6.19	Sand Equivalent value	ASTM D 2419/ BSEN 933-8
6.20	Sampling of Aggregate Sample from site or batching plant	ASTM D 75/D 75M
6.21	Standard Practice for Reducing Samples of Aggregate to Testing Size	ASTM D 702
Chemical Analysis		
6.22	Acid soluble Sulphate content	BS EN 1744-1
6.23	Acid Soluble Chloride content	BS EN 1744-5
6.24	Organic impurities	ASTM C 40



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
6.25	Potential Alkali Silica reactivity	ASTM C 289
6.26	Light weight particles	ASTM C 123
7.0	SOILS - ROAD BASE/SUBBASE/SUBGRADE/BACKFILL	
7.01	Moisture content	BS : 1377: Part:2
7.02	Moisture content	ASTM D2216
7.03	Particle size distribution	BS :1377, Part 2, Test 9.2
7.04	Particle size distribution	ASTM D6913
7.05	Material Finer than No.200 (0.075mm) sieve	ASTM D 1140
7.06	Correction of Density and Water content	ASTM D 4718
7.07	Liquid Limit. Plastic limit & PI	BS :1377, Part 2, Test 4.3
7.08	Liquid limit, Plastic limit, & PI	ASTM D 4318
7.09	Dry Density / Moisture content relationship	BS :1377, Part 4, Test 3.5 & Test 3.6
7.10	Dry Density / Moisture content	ASTM D 1557
7.11	California bearing ratio (CBR)	BS :1377, Part 4, Test 7 & CML Test 10-97
7.12	California bearing ratio (CBR)	ASTM D 1883
7.13	Specific gravity	BS : 1377; Part:2
7.14	Sedimentation analysis	BS : 1377 Part : 2;Test 9.5
7.15	Standard Method of Test for Uncompacted Void Content of Fine Aggregates	AASTHO T-304
7.16	Shape (Flakiness Index & Elongation Index / Fractured Faces)	ASTM D5821
7.17	Soundness	ASTM C88
7.18	Los Angeles abrasion value	ASTM C131/ ASTM C535
7.19	Sand Equivalent Value	ASTM D 2419



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
7.20	1-Dimensional consolidation test	BS:1377 Part-5 Test 3
7.21	Direct Shear Test	BS:1377 Part-7 Test 4
7.22	Tri axial Test – Un Consolidated un-drained (UU)	BS:1377 Part-7 Test 8
7.23	Tri axial Test – Consolidated un-drained (CU)	BS:1377 Part-8 Test 7
7.24	Tri axial Test – Consolidated un-drained (CU)	BS:1377 Part-7 Test 8
7.25	Tri axial Test – Consolidated Drained (CD)	BS:1377 Part-8 Test 8
Soil In-situ Test		
7.26	Thermal resistivity & Conductivity	ASTM D 5334
7.27	Electrical Resistivity – Wenner Method	ASTM G 57
7.28	In-situ Density Testing –Nuclear gauge	BS 1377 Part: 9 test 2.5
7.29	In-situ Density Testing –Nuclear gauge	ASTM D 6938
7.30	In-situ Density Testing –Sand replacement	BS 1377 Part: 9 Test 2.2
7.31	In situ Density Sand Cone Method	ASTM D-1556
7.32	California Bearing Ratio Tests.	BS 1377 Part: 9 test 4.3
7.33	California Bearing Ratio Tests.	ASTM D 4429
7.34	Plate Bearing Tests.	BS 1377 Part: 9 Test 4.1
7.35	Dynamic Cone penetration (DCPT)	ASTM D6951/D6951M
7.36	Sampling of Soil from site.	ASTM D 75/75M
7.37	Determination of Water (Moisture) Content of Soil by the Calcium Carbide Gas Pressure Teste	ASTM D 4944
Chemical Analysis		
7.38	pH Value	BS 1377:Part:3 Test - 9
7.39	Water Soluble Sulphate content	BS 1377:Part:3 Test –5.3



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ITEM NO.	TEST	METHOD
7.4	Water Soluble Chloride content	BS 1377:Part:3 Test -7.2
7.41	Acid Soluble Sulphate content	BS 1377:Part:3 Test -5.2
7.42	Acid Soluble Chloride content	BS 1377:Part:3 Test -7.3
7.43	Organic matter content	BS 1377:Part:3 Test -4
7.44	Carbonate content	BS 1377:Part:3 Test -6
7.45	Redox Potential	BS 1377:Part:3 Test -11
7.46	Organics in Soil by Loss on ignition	AASHTO T267-86(2013)
7.47	Water Soluble Chloride ion content	AASHTO T 291-94
7.48	Water Soluble Sulphate ion content	AASHTO T 290-95
8.0	CBGM	
8.01	Determination of Moisture Content	BS EN 1924-2-1990
8.02	Determination of Compressive Strength of Cubic Specimen	BS EN 1924-2-1990
8.03	Determination of the effect of immersion in water on the compressive strength	BS EN 1924-2-1990
9.0	ROCKS	
9.01	Water Content, Porosity, Density, Degree of Saturation & Void Ratio	ISRM Part:1
9.02	Rock Swelling	ISRM Clause 3, Part: 2 (1999-2006)
9.03	Schmidt rebound Hardness Value	ISRM 1985(2007 compilation Page: 95)
9.04	Abrasiveness -Taber Abrasion	ISRM 1978/ASTM
9.05	Point load test	ASTM D 5731/ISRM
9.06	Uni-axial compression test	ASTM D7012 Method C
9.07	UCS and Modulus of deformation	ASTM D 7012 Method D
9.08	Triaxial Compressive Strength	ASTM D 7012 Method-A
9.09	Brazilian Test	ISRM 1978



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
9.1	Slake Durability Test	ASTM D 4644
9.11	CERCHAR - Abrasiveness	ASTM D 7625
9.12	Grading of Rock armor	CIRIA SP-83 Test 3.2.2.2/ BSEN 13383-2
9.13	Drop Test- Breakage Index	CIRIA SP-83 Test A2.11.4
9.14	Density	CIRIA SP-83 Test A2.6/ BSEN 13383-2
9.15	Water Absorption	CIRIA SP-83 Test A2.7/ BSEN 13383-2
9.16	Soundness	ASTM C 88
9.17	Los Angeles abrasion value	ASTM C 131
9.18	Methylene Blue Absorption	BS EN 933-9
9.19	Sampling of Rock from site.	BSEN 13383-2
10.0	CEMENTITIOUS MATERIALS AND ADMIXTURE	
10.01	Sampling and the amount of Testing of Hydraulic Cement	ASTM C 183
10.02	Methods of taking and preparing samples of cement	BSEN 196-7
10.03	Time Setting of Hydraulic Cement by Vicat Needle	ASTM C 191
10.04	Standard Test Method for Amount of Water Required for Normal Consistency of Hydraulic Cement	ASTM C -187
10.05	Silica Fume Used in Cementitious Mixtures	ASTM C 1240
10.06	Fineness of Hydraulic Cement by the 45 micron Sieve	ASTM C 430
10.07	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars: Using Portions of Prisms Broken in Flexure	ASTM C 349
10.08	Initial and final setting times	BS EN 196-3
10.09	Soundness of cement	BS EN 196-3
10.10	Fineness of cement	BS EN 196-6



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
10.11	Compressive strength	BS EN 196-1
Chemical Analysis		
10.12	Total Silica (SiO ₂)	BS EN196-2/ASTM C114
10.13	Aluminium Oxide (Al ₂ O ₃)	BS EN196-2/ASTM C114
10.14	Iron Oxide (Fe ₂ O ₃)	BS EN196-2/ASTM C114
10.15	Calcium Oxide (CaO)	BS EN196-2/ASTM C114
10.16	Magnesium Oxide (MgO)	BS EN196-2/ASTM C114
10.17	Sulphur Trioxide (SO ₃)	BS EN196-2/ASTM C114
10.18	Los on Ignition	BS EN196-2/ASTM C114
10.19	Insoluble residue	BS EN196-2/ASTM C114
10.20	Tricalcium Aluminate (C ₃ A)	BS EN196-2/ASTM C114
10.21	Total Alkalies	BS EN196-2/ASTM C114
11	GGBS	
11.01	Total Silica (SiO ₂)	BS EN 196-2/BS EN 15167-1
11.02	Aluminium Oxide (Al ₂ O ₃)	BS EN 196-2/BS EN 15167-1
11.03	Iron Oxide (Fe ₂ O ₃)	BS EN 196-2/BS EN 15167-1
11.04	Calcium Oxide (CaO)	BS EN 196-2/BS EN 15167-1
11.05	Magnesium Oxide (MgO)	BS EN 196-2/BS EN 15167-1
11.06	Sulphur Trioxide (SO ₃)	BS EN 196-2/BS EN 15167-1
11.07	Los on Ignition	BS EN 196-2/BS EN 15167-1
11.08	Chloride	BS EN 196-2/BS EN 15167-1
11.09	Moisture content	BS EN 196-6/BS EN 15167-1
11.1	Density	BS EN 196-6/BS EN 15167-1



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
11.11	Fineness	BS EN 196-6/BS EN 15167-1
11.12	Activity Index @ 7 & 28 days	BS EN 196-1/BS EN 15167
11.13	Setting time - Initial	BS EN 196-3
12	PULVERIZED FUEL ASH (PFA)	
12.01	Total Silica	BS EN 196-2/BS EN 450-1
12.02	Aluminium Oxide	BS EN 196-2/BS EN 450-1
12.03	Sulphate	BS EN 196-2/BS EN 450-1
12.04	Iron Oxide	BS EN 196-2/BS EN 450-1
12.05	Magnesia content	BS EN 196-2/BS EN 450-1
12.06	Loss on ignition	ASTM C 311/C311M
12.07	Moisture content	BS 3892 -1 /ASTM C114
12.08	Fineness	ASTM C430/ASTM C311
13	MICRO SILICA	
13.01	Silica content (SiO ₂)	ASTM C1240/C114
13.02	Moisture content	ASTM C1240/C114
13.03	Loss on ignition	ASTM C1240/C114
13.04	Percent retained on 45- μ m	ASTM C1240
14	ADMIXTURE	
14.01	Chloride content	BS EN 480-10/BS EN 934-2
14.02	Specific Gravity	ASTM C 494/ASTM C 494M
14.03	Dry Material Content – Residue by Oven Drying	ASTM C 494/ASTM C 494M
14.04	pH value	In-house
15	LIMESTONE	



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
15.01	Total Silica (SiO ₂)	ASTM C25-11/USEPA6010C
15.02	Aluminum Oxide (Al ₂ O ₃)	ASTM C25-11/USEPA6010C
15.03	Iron Oxide (Fe ₂ O ₃)	ASTM C25-11/USEPA6010C
15.04	Calcium Oxide (CaO)	ASTM C25-11/USEPA6010C
15.05	Magnesium Oxide (MgO)	ASTM C25-11/USEPA6010C
15.06	Loss on ignition	ASTM C25-11/USEPA6010C
15.07	Titanium Oxide (TiO ₂)	ASTM C25-11/USEPA6010C
15.08	Sodium Oxide (Na ₂ O)	ASTM C25-11/USEPA6010C
15.09	Potassium Oxide (K ₂ O)	ASTM C25-11/USEPA6010C
16	WATER FOR CONCRETE PURPOSE	
16.01	Sulphate (SO ₄)	BS 1377 part:3:1990
16.02	Chloride (Cl)	BS 1377 part:3:1990
16.03	Total Dissolved Solids (TDS)	BS 1377 part:3:1990
16.04	Total Alkalinity as CaCO ₃	BS EN ISO9963-1:1996
16.05	Carbonate & Bi-Carbonate	APHA
16.06	pH value	BS 6068-2.50:1995
16.07	Lead (Pb)	SM WW 3120 (ICP –OES)
16.08	Zinc (Zn)	SM WW 3120 (ICP –OES)
16.09	Nitrate Nitrogen	SM WW 4110 B
16.10	Phosphate (PO ₄)	SM WW 4500 PD-B
16.11	Chemical Oxygen Demand (COD)	SM WW 5220D
17	STEEL REINFORCEMENT	
17.01	Tensile strength, Yield and Elongation up to 32 mm diameter bar.	BS 449:2005+A2:2009/BS EN –ISO 6892-1:2009/BS EN ISO 15630-1:2010/BS EN ISO



CONSTRUCTION MATERIALS TESTING		
ITEM NO.	TEST	METHOD
		7438:2005
17.02	Tensile strength, Yield and Elongation 40 mm diameter bar.	BS 449:2005+A2:2009/BS EN -ISO 6892-1:2009/BS EN ISO 15630-1:2010/BS EN ISO 7438:2005
17.03	Bend	BS 449:2005+A2:2009/BS EN -ISO 6892-1:2009/BS EN ISO 15630-1:2010/BS EN ISO 7438:2005
17.04	Rebend	BS 449:2005+A2:2009/BS EN -ISO 6892-1:2009/BS EN ISO 15630-1:2010/BS EN ISO 7438:2005
Chemical Analysis		
17.05	Carbon (C)	ASTM A615/A615M/ASTM E415
17.06	Sulphur (S)	ASTM A615/A615M/ASTM E415
17.07	Manganese (Mn)	ASTM A615/A615M/ASTM E415
17.08	Silicon (Si)	ASTM A615/A615M/ASTM E415
17.09	Phosphorous (P)	ASTM A615/A615M/ASTM E415
17.1	Vanadium (V)	ASTM A615/A615M/ASTM E415
17.11	Nickel (Ni)	ASTM A615/A615M/ASTM E415
17.12	Chromium (Cr)	ASTM A615/A615M/ASTM E415
17.13	Molybdenum (Mo)	ASTM A615/A615M/ASTM E415
17.14	Copper (Cu)	ASTM A615/A615M/ASTM E415
17.15	Nitrogen (N)	ASTM A615/A615M/ASTM E415
17.16	Carbon Equivalent (Ceq)	BS 4449:2005+A2:2009
18	SOIL FOR AGRICULTURAL PURPOSE	



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ITEM NO.	TEST	METHOD
18.01	Sodium Absorption Ratio (SAR)	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.02	Boron	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.03	Cat ion Exchange capacity	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.04	Exchangeable Sodium	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.05	Salinity	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.06	Chloride	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.07	Sulphate	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.08	Phosphate	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.09	Total Kjeldahl Nitrogen (TKN)	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.1	Total Nitrogen	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.11	Carbonates	Laboratory Manual for the Examination of Water, Wastewater and Soil
18.12	Particle size distribution	BS 1377 Part:2
19	GYPSUM	
19.01	Silicon dioxide & Insoluble matter	ASTM C471/C471M
19.02	Iron & Aluminium Oxide	ASTM C471/C471M
19.03	Sulfur Trioxide	ASTM C471/C471M
19.04	Calcium Oxide	ASTM C471/C471M



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ITEM NO.	TEST	METHOD
19.05	Chloride	ASTM C471/C471M
19.06	Free Water	ASTM C471/C471M
19.07	Combined Water	ASTM C471/C471M
20	REFRACTORY MATERIAL	
20.01	Cold Crushing strength & Bulk density	ASTM C 133 & ASTM C134
20.02	Permanent Linear change	ASTM C 113