

Laboratory **Orbital Infrastructure Consultancy & Research Pvt. Ltd., Plot No. 1134, Mahanadi Vihar, Cuttack, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6818** (in lieu of T-2774, T-2775 & T-3784) **Page 1 of 15**

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

I.	BUILDING MATERIAL			
1.	Concrete (Admixture)	pH Value	IS 9103:1999 (RA 2013)	2 to 14
		Chloride content	IS 6925:1973 (RA 2008)	0.001 % to 0.02 %
		Ash content	IS 9103:1999 (RA 2013)	0.5 % to 20 %
		Dry Material Content	IS 9103:1999 (RA 2013)	5 % to 40 %
		Relative Density	IS 9103:1999 (RA 2013)	0.7 to 1.5
2.	Aggregate (Coarse & Fine)	Alkali Reactivity		
		Reduction Alkalinity	IS 2386 (Part 7): 1963 (RA 2016)	5 mmol/l to 700 mmol/l
		Soluble Silica	IS 2386 (Part 7): 1963 (RA 2016)	20 mmol/l to 200mmol/l
		Organic matter	IS 2386 (Part 2): 1963 (RA 2016)	Visual inspection
		Coal & Lignite	IS 2386 (Part 2): 1963 (RA 2016)	0.1 % to 3 %
3.	Cement (OPC, PPC, SRPC& HAC)	Lime (as Calcium oxide)	IS 4032:1985 (RA 2009) Clause No-4.7.2	30 % to 80 %
		Iron oxide content	IS 4032:1985 (RA 2009) Clause No- 4.5.2	1.5 % to 20 %
		Alumina Oxide	IS 4032:1985 (RA 2009) Clause No- 4.6.2	1.5 % to 25 %
		Silica	IS 4032:1985 (RA 2009) Clause No- 4.3	4 % to 25 %
		Loss on ignition	IS 4032:1985 (RA 2009) Clause No- 4.2	0.5 % to 10 %
		Insoluble residue	IS 4032:1985 (RA 2009) Clause No- 4.10	0.1 % to 40 %
		Sulphuric anhydride	IS 4032:1985 (RA 2009) Clause No- 4.9	0.2 % to 10 %

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		Magnesium oxide	IS 4032:1985 (RA 2009 Clause No- 4.8.2	0.5 % to 20 %
4.	Steel (Carbon-Steel, Reinforcement Steel Bar)	Carbon	IS 228 (Part 1): 1987 (RA 2012)	0.05 % to 1.5 %
		Sulphur	IS 228 (Part 9): 1989 (RA 2014)	0.01 % to 0.25 %
		Phosphorus	IS 228 (Part 3): 1987 (RA 2012)	0.01 % to 0.20 %
		Manganese	IS 228 (Part 2): 1987 (RA 2012)	0.1 % to 2.5 %
		Silicon	IS 228 (Part 8): 1987 (RA 2014)	0.1 % to 2.0 %
		Nickel	IS 228 (Part 5): 1987 (RA 2014)	0.1 % to 5.0 %
		Chromium	IS 228 (Part 6): 1987 (RA 2014)	0.1 % to 3.5 %
5.	Bitumen	Mineral matter (Ash content)	IS 1217:1978 (RA 2009)	0.01 % to 6 %
		Solubility in carbon Trichloroethylene	IS 1216:1978 (RA 2009)	20 % to 99.9 %
II.	POLLUTION & ENVIRONMENT			
1.	Waste Water	pH value	IS 3025 (Part 11): 1983 (RA 2017) Electrometric Method	1 to 14
		Chloride	IS 3025 (Part 32): 1988 (RA 2014) Argentometric Method	2 mg/l to 10,000 mg/l
		Sulphate	IS 3025 (Part 24): 1986 (RA 2014) Gravimetric Method	5 mg/l to 500 mg/l
		Total hardness	IS 3025 (Part 21): 2009 (RA2014) EDTA Method	5 mg/l to 400 mg/l

Sandeep Singh Tomar
Convenor

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Program Director

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		Total alkalinity	IS 3025(Part 23): 1986 (RA 2014)	2 mg/l to 200 mg/l
		Total dissolve Solids(TDS)	IS 3025 (Part 16): 1984 (RA 2017)	3 mg/l to 1000 mg/l
		Acidity	IS 3025 (Part 22): 1986 (RA 2014)	5 mg/l to 500 mg/l
		Suspended Matter	IS 3025 (Part 17): 1984 (RA 2017)	3 mg/l to 1000 mg/l
		Inorganic Matter	IS 3025 (Part 18): 1984 (RA 2017)	1.0 mg/l to 5000 mg/l
		Organic Matter	IS 3025 (Part 18): 1984 (RA 2017)	1.0 mg/l to 5000 mg/l
		Calcium	IS 3025 (Part 40): 1991 (RA 2014) EDTA Titrimetric method	1.0 mg/l to 1000 mg/l
		Magnesium	IS 3025 (Part 46): 1994 (RA 2014) Gravimetric Method as Magnesium Pyrophosphate	1.0 mg/l to 1000mg/l
		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2014) Titrimetric Method	0.1 mg/l to 10 mg/l
		Conductivity	IS 3025 (Part 14): 1984 (RA 2013)	0 to 10000 µs/cm
		Turbidity	IS 3025 (Part 10): 1984 (RA 2017) Nephelometric Method	1 NTU to 1000NTU
		Potassium	IS 3025 (Part 45): 1993 (RA 2014) Flame Photometry Method	3 mg/l to 100 mg/l
		Sodium	IS 3025 (Part 45): 1993 (RA 2014) Flame Photometry Method	3 mg/l to 100 mg/l

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III.	WATER			
1.	Bore Water & Drinking Water	pH value	IS 3025 (Part 11): 1983 (RA 2017) Electrometric Method	1 to 14
		Chloride	IS 3025 (Part 32): 1988 (RA 2014) Argentometric Method	2 mg/l to 10,000 mg/l
		Sulphate	IS 3025 (Part 24): 1986 (RA 2014) Gravimetric Method	5 mg/l to 500 mg/l
		Total hardness	IS 3025 (Part 21): 2009 (RA 2017) EDTA Method	5 mg/l to 400 mg/l
		Total alkalinity	IS 3025 (Part 23): 1986 (RA 2014)	2 mg/l to 200 mg/l
		Total dissolve Solids(TDS)	IS 3025 (Part 16): 1984 (RA 2017)	3 mg/l to 1000 mg/l
		Acidity	IS 3025 (Part 22): 1986 (RA 2014)	5 mg/l to 500 mg/l
		Suspended Matter	IS 3025 (Part 17): 1984 (RA 2017)	3 mg/l to 1000 mg/l
		Inorganic Matter	IS 3025 (Part 18): 1984 (RA 2017)	1.0 mg/l to 5000 mg/l
		Organic Matter	IS 3025 (Part 18): 1984 (RA 2017)	1.0 mg/l to 5000 mg/l
		Calcium	IS 3025 (Part 40): 1991 (RA 2014) EDTA titrimetric method	1.0 mg/l to 1000 mg/l
		Magnesium	IS 3025 (Part 46): 1994 (RA 2014) Gravimetric Method as Magnesium Pyrophosphate	1.0 mg/l to 1000 mg/l

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		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2014) Titrimetric Method	0.1 mg/l to 10 mg/l
		Conductivity	IS 3025 (Part 14): 1984 (RA 2013)	0 to 10000 µs/cm
		Turbidity	IS 3025 (Part 10): 1984 (RA 2017) Nephelometric Method	1 NTU to 1000 NTU
		Potassium	IS 3025 (Part 45): 1993 (RA 2014) Flame Photometry Method	3 mg/l to 100 mg/l
		Sodium	IS 3025 (Part 45): 1993 (RA 2014) Flame Photometry Method	3 mg/l to 100 mg/l
IV.	ATMOSPHERIC POLLUTION			
1.	Ambient Air	Suspended Particulate Matter	IS 5182 (Part 4) 1999 (RA 2014)	10 µg/m ³ to 1000 µg/m ³
		Respirable Suspended Particulate Matter (PM ₁₀)	IS 5182 (Part 23): 2006 (RA 2017)	10 µg/m ³ to 1000 µg/m ³
		Respirable Suspended Particulate Matter (PM _{2.5})	SOP No. OICRPLTD/ LAB/ SOP/C-08/03 based on NAAQS Monitoring & Analysis Guideline Volume-I CPCB Year-2011	5 µg/m ³ to 200 µg/m ³
		Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001 (RA 2017)	5 µg/m ³ to 100 µg/m ³
		Nitrogen Dioxide (NO _x)	IS 5182 (Part 6): 2006 (RA 2017)	5 µg/m ³ to 200 µg/m ³
2.	Noise Monitoring	Sound pressure level	IS 9876:1981 (RA 2007)	30 dB(A) to 134 dB(A)

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V.	SOIL & ROCK			
1.	Soil	pH value	IS 2720 (Part 26): 1987 (RA 2011)	2 to 14
		Total soluble sulphate	IS 2720 (Part 27): 1977 (RA 2015)	0.01 % to 5 %
		Organic matter	IS 2720 (Part 22): 1972 (RA 2015)	2 % to 50 %
		Calcium carbonate	IS 2720 (Part 23): 1976 (RA 2010)	0.1 % to 20 %
2.	Clay	pH value	IS 2720 (Part 26): 1987 (RA 2011)	2 to 14
		Total soluble sulphate	IS 2720 (Part 27): 1977 (RA 2015)	0.015 % to 5 %

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Steel (Reinforcement)	Tensile strength	IS 1608:2005 (RA 2011)	Upto 1000 N/mm ²
		Yield stress	IS 1608:2005 (RA 2011)	Upto 750 N/mm ²
		Elongation test	IS 1608:2005 (RA 2011)	1 % to 60 %
		Bend test	IS 1599:2012 (RA 2015)	Mandrel Dia: (24, 30, 32, 35, 40, 44, 50, 60, 64, 75, 80, 84, 95, 100, 112, 125, 126, 128, 140, 155, 160, 175, 176, 196, 224) mm
		Re Bend test	IS 1786:2008 (RA 2013)	Mandrel Dia: (24, 30, 32, 35, 40, 44, 50, 60, 64, 75, 80, 84, 95, 100, 112, 125, 126, 128, 140, 155, 160, 175, 176, 196, 224) mm
		Unit weight	IS 1786:2008 (RA 2013)	0.099 kg/m to 9.86 kg/m
2.	Steel (General Purpose)	Tensile strength	IS 1608:2005 (RA 2011)	Upto 1000 N/mm ²
		Yield stress	IS 1608:2005 (RA 2011)	Upto 750 N/mm ²
		Elongation test	IS 1608:2005 (RA 2011)	1 % to 60 %
		Bend test	IS 1599:2012 (RA 2015)	Mandrel Dia: (24, 30, 32, 35, 40, 44, 50, 60, 64, 75, 80, 84, 95, 100, 112, 125, 126, 128, 140, 155, 160, 175, 176, 196, 224) mm
		Unit weight	IS 1730:1989 (RA 2009)	1 kg/m to 100 kg/m
			IS 1732:1989 (RA 2014)	
			IS 1852:1985 (RA 2013)	
	IS 12778:2004 (RA 2009)			
		IS 808:1989 (RA 2014)		

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II.	BUILDING MATERIALS			
1.	Cement (OPC/ PSC/PPC/SRPC/ HAC)	Fineness by dry sieving by 90 micron	IS 4031 (Part 1): 1996 (RA 2016)	1 % to 100 %
		Fineness by Blains air permeability method	IS 4031 (Part 2): 1999 (RA 2008)	10 m ² /kg to 500 m ² /kg
		Consistency	IS 4031 (Part 4): 1988 (RA 2014)	10 % to 50 %
		Setting time	IS 4031 (Part 5): 1988 (RA 2009)	10 min to 1600 min
		Soundness (Le-chatelier test)	IS 4031 (Part 3): 1988 (RA 2014)	0.1 mm to 25 mm
		Soundness (Auto clave test)	IS 4031 (Part 3): 1988 (RA 2014)	Upto 20 %
		Compressive strength	IS 4031 (Part 6): 1988 (RA 2009)	1 MPa to 100 MPa
		Density	IS 4031 (Part 10): 1988 (RA 2009)	2.8 g/cc to 3.3 g/cc
		Drying shrinkage	IS 4031 (Part 11): 1988 (RA 2009)	0.01 % to 0.5 %
		Transverse strength	IS 4031 (Part 8): 1988 (RA 2009)	2 N/mm ² to 25 N/mm ²
2.	Pozzolana	Density	IS 1727:1967 (RA 2008)	2.0 g/cc to 3.3 g/cc
		Fineness by dry sieving 45 mic	IS 1727:1967 (RA 2008)	Retain 3 % to 60 %
		Fineness by Blains air permeability method	IS 1727:1967 (RA 2008)	10 m ² /kg to 500 m ² /kg
		Lime reactivity	IS 1727:1967 (RA 2008)	1 N/mm ² to 25 N/mm ²
		Soundness by Autoclave	IS 1727:1967 (RA 2008)	Upto 20 %
		Compared Compressive strength	IS 1727:1967 (RA 2008)	10 % to 98 %

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3.	Aggregate			
a.	Coarse aggregate	Grading	IS 2386 (Part 1): 1963 (RA 2016)	2.36 mm to 125 mm
		Soundness	IS 2386 (Part 5): 1963 (RA 2016)	0.1 % to 20 %
		Flakiness index	IS 2386 (Part 1): 1963 (RA 2016)	0 to 100 %
		Elongation index	IS 2386 (Part 1): 1963 (RA 2016)	0 to 100 %
		Angularity number	IS 2386 (Part 1): 1963 (RA 2016)	1 nos to 50 nos
		Deleterious Material		
		Clay lumps	IS 2386 (Part 2): 1963 (RA 2016)	0 to 50 %
		Finer than 75 micron	IS 2386 (Part 1): 1963 (RA 2016)	0.01 % to 100 %
		Clay, silt & fine dust	IS 2386 (Part 2): 1963 (RA 2016)	0.001 % to 0.10 %
		Bulk density	IS 2386 (Part 3): 1963 (RA 2016)	1000 kg/m ³ to 3000 kg/m ³
		Specific gravity & water absorption	IS 2386 (Part 3): 1963 (RA 2016)	0.5 % to 3.5 % & 0.02 % to 4.5 %
		Surface moisture	IS 2386 (Part 3): 1963 (RA 2016)	0.1 % to 25 %
		Crushing value	IS 2386 (Part 4): 1963 (RA 2016)	1 % to 100 %
		10% fines value	IS 2386 (Part 4): 1963 (RA 2016)	1 kN to 300 kN
		Impact value	IS 2386 (Part 4): 1963 (RA 2016)	Upto 70%
		Los Angeles Abrasion value	IS 2386 (Part 4): 1963 (RA 2016)	1 % to 100 %
		Stripping value	IS 6241:1971 (RA 2008)	10 % to 100 %

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b.	Fine aggregate	Grading	IS 2386 (Part 1): 1963 (RA 2016)	75mic. to 10mm		
		Soundness	IS 2386 (Part 5): 1963 (RA 2016)	0.1% to 20%		
		Specific gravity & water absorption	IS 2386 (Part 3): 1963 (RA 2016)	0.5 to 3.5 0.02 % to 4.5%		
		Bulk density	IS 2386 (Part 3): 1963 (RA 2016)	1000 kg/m ³ to 3000 kg/m ³		
		Deleterious Material				
		Clay lumps	IS 2386 (Part 2): 1963 (RA 2016)	Nil to 50 %		
		Finer than 75 micron	IS 2386 (Part 1): 1963 (RA 2016)	Upto 100 %		
		Clay, Silt & Fine Dust	IS 2386 (Part 2): 1963 (RA 2016)	0.1 % to 50 %		
		Surface moisture	IS 2386 (Part 3): 1963 (RA 2016)	0.1 % to 25 %		
		Silt content	CPWD VOL-1-2009	0 to 50 %		
		Bulking	IS 2386 (Part 3): 1963 (RA 2016)	0.1 % to 100 %		
		Sand Equivalent value	IS 2720 (Part 37): 1976 (RA 2011)	40 % to 98 %		
		4.	Bricks	Compressive strength	IS 3495 (Part 1): 1992 (RA 2011)	5 MPa to 50 MPa
				Water absorption	IS 3495 (Part 2): 1992 (RA 2011)	0.5 % to 100 %
Efflorescence	IS 3495 (Part 3): 1992 (RA 2011)			Qualitative		
Bulk density	IS 2180:1988 (RA 2011)			1 g/cm ³ to 3 g/cm ³		
Dimension	IS 1077:1992 (RA 2011) & IS 12894:2002 (RA 2007)			1 mm to 15000 mm		
5.	Building lime	Fineness by dry sieving	IS 6932 (Part 4): 1973 (RA 2009)	0 to 100 %		

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		Compressive strength	IS 6932 (Part 7): 1973 (RA 2009)	1 mm ² to 60 N/mm ²
		Soundness	IS 6932 (Part 9): 1973 (RA 2009)	0.1 mm to 10 mm
		Setting time	IS 6932 (Part 11): 1983 (RA 2009)	10 min to 1200 min
		Consistency / Workability	IS 6932 (Part 8): 1973 (RA 2009)	1 to 50
6.	Admixture	Relative density	IS 9103:1999 (RA 2013)	0.5 to 1.5
7.	Concrete (Admixture)	Water content	IS 9103:1999 (RA 2013)	1 % to 20 %
		Compressive strength	IS 516:1959 (RA 2013)	2 N/mm ² to 100 N/mm ²
		Flexural strength	IS 516:1959 (RA 2013)	1 N/mm ² to 70 N/mm ²
		Workability	IS 9103:1999 (RA 2013)	0 to 300 %
8.	Concrete (Fresh)	Bleeding	IS 9103:1999 (RA 2013)	0.01 % to 10 %
		Slump test	IS 1199:1959 (RA 2013)	1 mm to 250 mm
		Compacting factor test	IS 1199:1959 (RA 2013)	0.01 to 0.95
		Flow test	IS 1199:1959 (RA 2013)	1 % to 300 %
9.	Concrete (Hardened)	Compressive strength	IS 516:1959 (RA 2013)	2 N/mm ² to 100 N/mm ²
		Flexural strength	IS 516:1959 (RA 2013)	1 to 70 N/mm ²
		Permeability of concrete	IS 3085:1965 (RA 2011) IRS-CBC	Upto 0.5 x 10 ⁻⁸ cm/sec & 0 to 100 mm
		Accelerated testing of concrete by boiling water method	IS 9013:1978 (RA 2008)	2 N/mm ² to 100 N/mm ²
10.	Timber	Moisture content	IS 1708 (Part 1): 1986 (RA 2010)	0.10 % to 50 %
		Specific gravity	IS 1708 (Part 2): 1986 (RA 2010)	0.1 to 3
11.	Bitumen	Softening point	IS 1205:1978 (RA 2009)	10 °C to 200 °C
		Penetration test	IS 1203:1978 (RA 2009)	5 mm to 250 mm/10
		Ductility test	IS 1208:1978 (RA 2009)	0.1 cm to 100 cm

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		Marshall stability test	SOP No.-OICRPLTD/LAB/SOP/M-10/04, Issue No. 02, date: 31.08.2015. BASED ON ASPHALT INSTITUTE MANUAL SERIES-2(MS-2)6th EDITION CHAPTER 5 AND ASTM D 1559 2004 & ASTM D 6927	1 kN to 22 kN
		Hardness	IS 1195:2002 (RA 2012)	1 to 100 nos
		Specific gravity	IS 1202:1978 (RA 2009)	0.5 to 1.5
		Absolute Viscosity	IS 1206 (Part 2): 1978 (RA 2009)	300 poise to 8000 poise
		Kinematic Viscosity	IS 1206 (Part 3): 1978 (RA 2009)	50 cSt to 1200 cSt
		Flash point by open cup	IS 1448 (Part 69): 2004 (RA 2009)	15 °C to 400 °C
		Flash point by Close cup	IS 1209:1978 (RA 2009)	15 °C to 400 °C
12.	Bitumen Emulsion	Residue by sieving on 600 micron	IS 8887:2004 (RA 2009)	0 to 10 %
		Saybolt Fural Viscosity	IS 3117:2004 (RA 2009)	5 sec to 500 sec
		Coagulation of emulsion	IS 8887:2004 (RA 2009)	Qualitative
		Miscibility with water	IS 8887:2004 (RA 2009)	Qualitative
		Coating ability	IS 8887:2004 (RA 2009)	Qualitative
		Storage stability	IS 8887:2004 (RA 2009)	0.01% to 5 %
13.	Paver block	Water Absorption	IS 15658:2006 (RA 2016)	0.1 % to 25%
		Compressive strength	IS 15658:2006 (RA 2016)	1 N/mm ² to 80 N/mm ²
14.	Tile	Water Absorption	IS 13630 (Part 2): 2006 (RA 2016 IS 1237:2012 (RA 2016)	0.01 % to 100 %
15.	Paving Mixture	Binder content	IRC-SP 11-1988 (RA 2008)	0.5 % to 25 %

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16.	Bentonite	Sand content	IS 6186:1986 (RA 2010)	0.1 % to 60 %
		Swelling power	IS 6186:1986 (RA 2010)	1 ml to 100 ml
		Mass cone Viscosity	ASTM D6910-2004	20 sec to 120 sec
		Moisture content	IS 6186:1986 (RA 2010)	0.2 % to 60 %
		Fineness		
		Dry	IS 6186:1986 (RA 2010)	10 % to 100 %
		Wet	IS 6186:1986 (RA 2010)	10 % to 100 %
III.	SOIL AND ROCK			
1.	Soil	Specific gravity	IS 2720 (Part 3): 1980 (RA 2011)	1 to 4
		Grainsize analysis		
		Sieve analysis	IS 2720 (Part 4): 1985 (RA 2015)	75 mic to 100 mm
		Sedimentation Analysis	IS 2720 (Part 4): 1985 (RA 2015)	0.075 mic to 0.001 mm
		Atterbergs limit		
		Liquid limit	IS 2720 (Part 5): 1985 (RA 2015)	1 % to 300 %
		Plastic limit		N.P to 50 %
		Moisture content	IS 2720 (Part 2): 1973 (RA 2015)	0.1 % to 50 %
		Direct shear test	IS 2720 (Part 13): 1986 (RA 2015)	Phi=0 to 50° C=0.01 kg/cm ² to 10 kg/cm ²
		Unconfined compression test	IS 2720 (Part 10): 1991 (RA 2010)	C=0.03 to 3kg/cm ²
		Triaxial compression test (UU & CU)	IS 2720 (Part 11): 1993, (RA 2011) clause no-7.2 IS 2720 (Part 12): 1981 (RA 2011) clause no-7	Phi=0 to 50° C=0.01 kg/cm ² to 10 kg/cm ²
		Odeometer consolidation test	IS 2720 (Part 15): 1965 (RA 2011)	Cc=0.05 to 0.4
Permeability test by falling head method	IS 2720 (Part 17): 1986 (RA 2011)	0.1 cm/sec to 100 cm/sec		

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Permeability test by constant head method	IS 2720 (Part 17): 1987 (RA 2011) IS 2720 (Part 36): 1987 (RA 2011)	0.1 cm/sec to 100 cm/sec
		Linear shrinkage test	IS 2720 (Part 20): 1992 (RA 2011)	5 % to 17 %
		Light compaction test	IS 2720 (Part 7): 1980 (RA 2011)	MDD: 0.5 g/cm ³ to 3 g/cm ³ OMC: 2 % to 50 %
		Heavy compaction test	IS 2720 (Part 8): 1983 (RA 2015)	MDD:0.5 g/cm ³ to 3g/cm ³ OMC:3 % to 45 %
		Free swell index(DFS)	IS 2720 (Part 40): 1977 (RA 2011)	1 % to 500 %
		California bearing ratio test	IS 2720 (Part 16): 1987 (RA 2011)	1% to 100 %
		Relative density test	IS 2720 (Part 14): 1983 (RA 2015)	0.5 gm/cc to 3 gm/cc
		Shrinkage limit	IS 2720 (Part 6): 1972 (RA 2011)	1 % to 90 %
		Bulk density	IS 2720 (Part 11): 1993 (RA 2011) & IS 2720 (Part 29): 1975 (RA 2015)	1.0 gm/cc to 3.0 gm/cc
2.	Rock	Uniaxial compressive strength	IS 9143:1979 (RA 2010)	10 N/mm ² to 200 N/mm ²
		Slake durability test	IS 10050:1981 (RA 2011)	10 % to 99.99 %
		Tensile strength by indirect test (brazillian)	IS 10082:1981 (RA 2010)	10 N/mm ² to 30 N/mm ²
		Point load test	IS 8764:1998 (RA 2014)	0.1 N/mm ² to 30N/mm ²
3.	Natural Building Stone	Water Absorption	IS 1124:1974 (RA 2013)	0.01 % to 50 %
		Compressive strength	IS 1121 (Part 1): 2013	0.5 N/mm ² to 200 N/mm ²
		Specific gravity	IS 1124:1974 (RA 2013)	1 to 4

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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NON - DESTRUCTIVE TESTING

I.	BUILDING MATERIALS-REINFORCED CONCRETE STRUCTURES			
1.	Building Materials-Reinforced Concrete Structures	Rebound Hammer	IS 13311 (Part 2): 1992 (RA 2013)	1 N/mm ² to 150 N/mm ²
		UltraSonic Pulse Velocity	IS 13311 (Part 1): 1992 (RA 2013)	0.1 km/sec to 8.0 km/sec