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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

MECHANICAL TESTING

I	**BUILDING MATERIALS**			
1.	**Fine Aggregate**	Sieve Analysis	IS 2386 (Part 1) - 1963 (RA 2016)	150 µm to 10mm
		Silt by Weight.	IS 2386 (Part 1), -1963 (RA 2016)	0.1% to 30%
		Specific Gravity.	IS 2386 (Part 3) - 1963, (RA 2016)	1 to 4
		Bulk Density (Loose)	IS 2386 (Part 3), -1963 (RA 2016)	1 kg/l to 2 kg/l
		Bulk Density (Compacted)	IS 2386 (Part 3), -1963 (RA 2016)	1 kg/l to 2 kg/l
		Water Absorption	IS 2386 (Part 3) - 1963 (RA 2016)	0.1 % to 5%
2.	**Coarse Aggregate**	Sieve Analysis	IS 2386 (Part 1) - 1963, (RA 2016)	4.75 mm to 100 mm
		Flakiness Index	IS 2386 (Part 1)- 1963, (RA 2016)	1% to 50%
		Elongation Index	IS 2386 (Part 1)- 1963, (RA 2016)	1% to 50%
		Specific Gravity	IS 2386 (Part 3) - 1963, (RA 2016)	1 to 4
		Bulk Density (Loose)	IS 2386 (Part 3) - 1963, (RA 2016)	1 kg/l to 3 kg/l
		Bulk Density (Compacted)	IS 2386 (Part 3) - 1963, (RA 2016)	1 kg/l to 3 kg/l
		Water Absorption	IS 2386 (Part 3) - 1963, (RA 2016)	0.1% to 10%
		Impact Value	IS 2386 (Part 4)- 1963, (RA 2016)	5% to 50%

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		Crushing Value	IS 2386 (Part 4) - 1963, (RA 2016)	5 % to 50%
3.	**Hardened Concrete**	Compressive Strength	IS 516-1959, (RA 2013)	10 N/mm^2 to 60 N/mm^2
4.	**Hollow & Solid Concrete Blocks**	Dimension	IS 2185 (Part 1) – 2005 (RA 2015)	50 mm to 800mm
		Density	IS 2185 (Part 1) – 2005 (RA 2015)	1500 kg/m^3 to 2500 kg/m^3
		Water Absorption	IS 2185 (Part 2) – 2005 (RA 2015)	0.1% to 25%
		Compressive Strength.	IS 2185 (Part 1) – 2005 (RA 2015)	1 N/mm^2 to 20 N/mm^2
5.	**Cement**	Fineness (by Dry Sieving)	IS 4031(Part 1) - 1996, RA 2016	0.1% to 10%
		Soundness (by Le-chatlier)	IS 4031 (Part 3) - 1988, RA 2014	0.06 mm to 10 mm
		Normal Consistency	IS 4031 (Part 4) - 1988, RA 2016	20% to 45%
		Initial Setting Time	IS 4031 (Part 5), -1988 RA 2014	30 min to 300 min
		Final Setting Time	IS 4031 (Part 5), -1988 RA 2014	30 min to 600 min
		Compressive Strength	IS 4031 (Part 6) - 1988, RA 2014	10 N/mm^2 to 80 N/mm^2
		Density (Specific Gravity)	IS 4031 (Part 11) - 1988, RA 2014	2.0 to 4.0
II.	**MECHANICAL PROPERTIES OF METALS**			
1.	**High Strength Deformed Steel Bars & Wires for Concrete**	Ultimate Tensile strength	IS 1608-2006, (RA 2013)	350 N/mm^2 to 750 N/mm^2 Load Range: 0.0kN to 1000kN

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		Yield Strength	IS 1608-2006, (RA 2013)	250 N/mm^2 to 600 N/mm^2
		Percentage Elongation	IS 1608-2006, (RA 2013)	4 %to 35%
				Mandrel size (mm)
		Bend Test	IS 1599: 2012 (RA 2017)	24, 32, 36, 40, 48, 50, 60, 64, 80, 100, 125, 128, 150, 160, 192
		Weight / Meter	IS 1786: 2012 (RA 2017)	0.1 kg/m to 10kg/m
		Rebend Test	IS 1786: 2012 (RA 2017)	32, 40, 50, 56, 72, 84, 96, 120, 112, 128, 140, 150, 160, 192, 175, 200, 224, 256
III.	**SOIL AND ROCK**			
1.	**Soil**	Water Content	IS 2720 (Part-2) 1973-(RA 2015)	1% to 30%
		Specific gravity	IS 2720 (Part-3) 1973-(RA 2011)	1.5 to 3.0
		Grain size analysis	IS 2720 (Part-4) 1985-(RA 2015)	75 µ to 10mm
		Liquid Limit	IS 2720 (Part-5) -1985-(RA 2015)	15% to 80%
		Plastic Limit	IS 2720 (Part-5) -1985-(RA 2015)	5% to 60%
		Light Compaction	IS 2720 (Part-7) -1980-(RA 2011)	OMC = 5 %to 30% MDD = 1 g/cc to 3 g/cc
		Heavy Compaction	IS 2720 (Part-8) -1983-(RA 2015)	OMC = 5 %to 30% MDD = 1 g/cc to 3 g/cc
		CBR	IS 2720 (Part-16) -1987-(RA 2011)	10% to 60%
		Free Swell Index	IS 2720 (Part-40)1977 (RA 2015)	0.1% to 50%

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		Dry density of soil in place by the replacement method	IS 2720 (Part-28)1974 RA 2015	1.5 g/cc to 3.0 g/cc
		Dry density of soil in place by the Core cutter method	IS 2720 (Part-29)1974 RA 2015	1.5 g/cc to 3.0 g/cc
2.	**Rock**	Compressive Strength	IS 9143:1979 RA 2016	5 N/ mm^2 to 200 N/ mm^2
		Water Absorption	IS 1124: 1974 RA 2017	0.1% to 10%
		Specific Gravity	IS 1124: 1974 RA 2017	2 to 4
		Water Content	IS 13030:1991 RA 2016	0.1% to 5%
		Porosity	IS 13030:1991 RA 2016	0.1% to 5%
		Density	IS 13030: 1991 RA 2016	1800 kg/m^3 to 3500 kg/m^3

Ranjith Kumar
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Anuja Anand
Program Manager

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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
	NON-DESTRUCTIVE TESTING			
I.	**BUILDING MATERIALS**			
1.	**(Reinforced Concrete Structures)**	Rebound Hammer Test	IS 13311 (Part 2) - 1992 (RA 2013)	10 N/mm^2 to 50 N/mm^2
		Ultrasonic Pulse Velocity Test	IS 13311 (Part 1) - 1992 (RA 2013)	0.1 km/s to 5 km/s

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