Laboratory	**Alcon Engineering Laboratory, 3, Navjyot Park, 150 Ft. Ring Road, Rajkot, Gujarat**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
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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.	**MECHANICAL PROPERTIES OF METALS**			
1.	**Steel bars for Concrete Reinforcement**	**Tensile Test**		
		Yield Stress	IS 1608	200 N/mm^2 to 700 N/mm^2
		Tensile Strength		200 N/mm^2 to 700 N/mm^2
		%Elongation		1 % to 40 %
		Bend test	IS 1599	Dia 6 mm to 16 mm Mandrel dia 25 mm to 40mm
		Re-bend test	IS 1786	Dia 6 mm to 16 mm Mandrel dia 25 mm to 40 mm
II.	**BUILDING MATERIALS**			
1.	**Cement**	Fineness by dry sieving	IS 4031 (Part 1)	0.01 % to 90 %
		Standard Consistency	IS 4031 (Part 4)	10 % to 35 %
		Setting time Initial	IS 4031 (Part 5)	30 min to 600 min
		Setting time final	IS 4031 (Part 5)	30 min to 700 min
		Soundness by Le-Chatelier test	IS 4031 (Part 3)	0.1 mm to 10 mm
		Compressive strength test	IS 4031 (Part 6)	2 N/mm^2 to 60 N/mm^2
2a.	**Aggregates (Coarse)**	Grading (Sieve Analysis)	IS 2386 (Part 1)	4.75 mm to 40 mm
		Unit Weight and Voids(bulk density)	IS 2386 (Part 3)	1 kg/lt to 2 kg/lt
		Impact Value	IS 2386 (Part 4)	5 to 60 %

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		Crushing Value	IS 2386 (Part 4)	5 % to 50 %
		10% Fines Value	IS 2386 (Part 3)	10 to 490 KN
		Specific Gravity	IS 2386 (Part 3)	1.5 to 4
		Water Absorption	IS 2386 (Part 3)	0.1 % to 25 %
		Flakiness Index	IS 2386 (Part 1)	5 to 70 %
		Elongation Index	IS 2386 (Part 1)	5 to 70 %
b.	**Aggregates (Fine)**	Sieve Analysis	IS 2386 (Part 1)	4.75 mm to 150 micron
		Specific Gravity	IS 2386 (Part 3)	1.5 to 4
		Water absorption	IS 2386 (Part 3)	1 % to 25 %
3.	**Bricks**	Compressive strength	IS 3495 (Part 1)	1 N/mm^2 to 15 N/mm^2
		Water Absorption	IS 3495 (Part 2)	1 % to 30 %
		Efflorescence	IS 3495 (Part 3)	Visual
		Dimension	IS 1077	Length: 2000 mm to 5000 mm Width: 1600 mm to 2500 mm Height: 1000 mm to 2300 mm
4.	**Concrete (Fresh)**	Slump	IS 1199	5 mm to 300 mm
5.	**Concrete (Hardened)**	Compressive Strength	IS 516	5 N/mm^2 to 80 N/mm^2
6a.	**Bitumen**	Softening Point Test	IS 1205	10 °C to 70°C
		Penetration Test	IS 1203	30 to 150 (1/10 mm)
		Ductility	IS 1208	10 cm to 100 cm
b.	**Bitumen Mix**	Stability	ASTM D 6927	2 kN to 20 kN
		Flow	ASTM D 6927	1 mm to 6.2 mm
III.	**SOIL AND ROCK**			
1.	**Soil**	Specific Gravity	IS 2720 (Part 3/Set 1)	1 to 3.5

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		Grain Size Analysis	IS 2720 (Part 4)	100 mm to 0.075 mm
		Liquid Limit	IS 2720 (Part 5)	5 % to 150 %
		Plastic Limit	IS 2720 (Part 5)	5 % to 50 %
		Density by Core cutter	IS 2720 (Part 29 & Sec 1)	1 g/cc to 3 g/cc
		Moisture Content	IS 2720 (Part 2)	0.1 % to 100 %
		Direct Shear test	IS 2720 (Part 13)	0.1 kg/cm^2 to 1.0 kg/cm^2
		Light compaction	IS 2720 (Part 7)	MDD: 1.5 gm/cc to 3 gm/cc OMC: 5 % to 30 %
		Heavy compaction	IS 2720 (Part 8)	MDD: 1.5 gm/cc to 3 gm/cc OMC: 5 % to 30 %
		Free swell index of soil	IS 2720 (Part 40)	0.1 % to 400 %
		CBR	IS 2720 (Part 16)	1 % to 80 %

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