

Laboratory Nanji Kalabhai Patel & Co. (NKPC), 'Boring House', Sorathiyawadi Chowk, Rajkot, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7763 (in lieu of T-3096 & T-2334)

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Validity 22.08.2018 to 21.08.2020

Last Amended on 30.08.2018

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.	WATER			
1.	Construction Water	pH Value	IS 3025 (Part 11)	1 to 14
		Chloride (Cl)	IS 3025 (Part 32)	5 mg/l to 5000 mg/l
		Sulphate (as SO ₃)	IS 3025 (Part 24)	10 mg/l to 1000 mg/l

Prince Garg
Convenor

Birendra Prasad Murmu
Program Manager

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous Materials, Alloys & Products (Reinforcement Steel)	Ultimate Tensile Strength	IS 1608	200 N/mm ² to 1500 N/mm ²
		Yield Stress	IS 1608	200 N/mm ² to 1500 N/mm ²
		Elongation	IS 1608	10 % to 40 %
		Bend Test	IS 1599	Qualitative (Mandrel Diameter: 18, 24, 30, 32, 36, 40, 48, 50, 60, 64, 80 mm)
		Re-Bend Test	IS 1786	Qualitative (Mandrel Diameter: 18, 24, 30, 32, 36, 40, 48, 50, 60, 64, 80 mm)
II.	BUILDING MATERIAL			
1.	Cement (OPC / PPC)	Standard Consistency	IS 4031 (Part 4)	10 % to 40 %
		Initial Setting Time	IS 4031 (Part 5)	30 minutes to 300 minutes
		Final Setting Time	IS 4031 (Part 5)	30 minutes to 600 minutes
		Compressive Strength	IS 4031 (Part 6)	10 N/mm ² to 80 N/mm ²
		Soundness (Le-Chatelier Method)	IS 4031 (Part 3)	0.1 mm to 10 mm
		Fineness (Blaine Air Permeability)	IS 4031 (Part 2)	200 m ² /kg to 600 m ² /kg
2.	Coarse Aggregate	Sieve Analysis	IS 2386 (Part 1)	0.1 % to 100 % (100 mm to 4.75 mm)
		Specific Gravity	IS 2386 (Part 3)	1.5 to 4
		Flakiness Index	IS 2386 (Part 1)	5 % to 70 %

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		Elongation Index	IS 2386 (Part 1)	5 % to 70 %
		Impact Value	IS 2386 (Part 4)	5 % to 40 %
		10% Fines Value	IS 2386 (Part 4)	10 kN to 490 kN
		Water Absorption	IS 2386 (Part 3)	1 % to 10 %
3.	Fine Aggregate	Specific gravity	IS 2386 (Part 3)	1.5 to 4
		Water Absorption	IS 2386 (Part 3)	1 % to 10 %
		Sieve Analysis	IS 2386 (Part 1)	0.1 % to 100 % (10 mm to 0.075 mm)
4.	Bitumen	Penetration	IS 1203	10 mm to 100 mm
		Absolute Viscosity	IS 1206 (Part 2)	600 Poise to 3000 Poise
		Kinematic Viscosity	IS 1206 (Part 3)	100 cSt to 600 cSt
		Softening Point	IS 1205	10 °C to 70 °C
		Ductility	IS 1208	10 cm to 100 cm
5.	Hardened Concrete	Compressive Strength	IS 516	10 N/mm ² to 80 N/mm ²
	Fresh Concrete	Slump Test	IS 1199	1 mm to 300 mm
6.	Bituminous Mix	Marshall Stability	ASTM D 6927	2 kN to 20 kN
		Marshall Flow	ASTM D 6927	1mm to 6 mm
7.	Bricks (Burnt Clay)	Dimension: Length Dimension: Width Dimension: Height	IS 1077	2000 mm to 5000 mm 1600 mm to 2500 mm 1000 mm to 2300 mm
		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)	Qualitative
III.	SOIL AND ROCK			
1.	Soil	Particle Size Distribution (Wet & Dry Analysis)	IS 2720 (Part 4)	0.1 % to 100 % (4.75 mm to 0.075 mm)
		Liquid Limit (Cone Penetration)	IS 2720 (Part 5)	5 % to 70 %
		Plastic Limit	IS 2720 (Part 5)	5 % to 70 %

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		Light Compaction: Maximum Dry Density Light Compaction: Optimum Moisture Content	IS 2720 (Part 7)	1 g/cc to 3 g/cc 5 % to 30 %
		Heavy Compaction: Maximum Dry Density Heavy Compaction: Optimum Moisture Content	IS 2720 (Part 8)	1 g/cc to 3 g/cc 5 % to 25 %
		California Bearing Ratio	IS 2720 (Part 16)	1 % to 70 %

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NON - DESTRUCTIVE TESTING

I.	BUILDING MATERIALS – REINFORCED CONCRETE STRUCTURES			
1.	Reinforced Concrete Structures	Ultrasonic Pulse Velocity	IS 13311 (Part 1)	0.5 km/s to 5 km/s
		Rebound Hammer	IS 13311 (Part 2)	10 R to 70 R

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