

Laboratory Nanji Kalabhai Patel & Co. (NKPC), Purna Kantha, Shramjivi
Rachnatmak Trust Building, Station Road, Tal. Vyara, Dist. Tapi,
Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-5958

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Validity 23.06.2018 to 22.06.2020

Last Amended on --

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	IS 3025 (Part 11) By Electrometric Method	1.0 to 14
		Chloride	IS 3025 (Part 32) (By Argentometric Method)	5 mg/l to 3000 mg/l
		Sulphate	IS 3025 (Part 24) (By Gravimetric Method)	5 mg/l to 2000 mg/l

Prince Garg
Convenor

N. Venkateswaran
Program Director

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MECHANICAL TESTING

I.	BUILDING MATERIAL			
1.	Cement (OPC -33, 43,53 Grade, PPC)	Standard Consistency	IS 4031 (Part 4)	10 % to 40 %
		Initial Setting Time	IS 4031 (Part 5)	5 minutes to 600 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	IS 4031 (Part 3)	0.1 mm to 10 mm
		Fineness by air Permeability	IS 4031 (Part 2)	100 m ² /kg to 600 m ² /kg
2.	Coarse Aggregate	Gradation- Sieve Analysis	IS 2386 (Part 1)	4.75 mm to 80 mm/ 0.01 % to 100 %
		Flakiness Index	IS 2386 (Part 1)	5 % to 70 %
		Elongation Index	IS 2386 (Part 1)	5 % to 70 %
		Water Absorption	IS 2386 (Part 3)	Upto 25 %
		Impact Value	IS 2386 (Part 4)	5 % to 50 %
		10% Fines Value	IS 2386 (Part 4)	10 kN to 490 kN
		Specific Gravity	IS 2386 (Part 3)	1.5 to 4
3.	Fine Aggregate/ Sand	Sieve Analysis (Gradation)	IS 2386 (Part 1)	4.75 mm to 75 μm/ 0.01 % to 100 %
		Water Absorption	IS 2386 (Part 3)	Upto 20 %
		Specific Gravity	IS 2386 (Part 3)	1.5 to 4
4.	Bitumen	Penetration	IS 1203	10 to 400 (1/10mm)
		Absolute Viscosity	IS 1206 (Part 2)	800 Poise to 4800 Poise
		Kinematic Viscosity	IS 1206 (Part 3)	100 cSt to 600 cSt
		Softening Point	IS 1205	10 °C to 100 °C
		Ductility	IS 1208	10 cm to 100 cm
		Specific Gravity	IS 1202	0.95 to 1.75

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		Loss On Heating	IS 1212	0.1 % to 25 %
		Binder Content	ASTM D 2172 IRC SP:11	2.5 % to 6.5 %
5.	Bitumen Mix	Stability	ASTM D 6927	300 kg 3000 kg
		Flow	ASTM D 6927	1 mm to 6.2 mm
6.	Concrete Cube/ Core	Compressive Strength	IS 516	5 N/mm ² to 80 N/mm ²
7.	C C Mix	Slump Test	IS 1199	Upto 300 mm
8.	Burnt Clay/ Building Brick & Burnt Clay/ Fly Ash Building Brick	Compressive Strength	IS 3495 (Part 1)	1 N/mm ² to 15 N/mm ²
		Water Absorption	IS 3495 (Part 2)	1 % to 30 %
		Dimensions: Length Dimensions: Width Dimensions: Height	IS 1077	2000 mm to 5000 mm 1600 mm to 2500 mm 1000 mm to 2300 mm
		Efflorescence	IS 3495 (Part 3)	Qualitative
9.	Paving Block	Compressive Strength	IS 15658	20 N/mm ² to 70 N/mm ²
		Water Absorption	IS 15658	3.0 % to 10.0 %
II.	SOIL AND ROCK			
1.	Soil	Gradation (Grain Size Analysis)	IS 2720 (Part 4)	4.75 mm to 0.075 mm
		Liquid Limit	IS 2720 (Part 5)	5 % to 70 %
		Plastic Limit	IS 2720 (Part 5)	5 % to 70 %
		Light Compaction: Maximum Dry Density	IS 2720 (Part 5)	1 g/cm ³ to 3 g/cm ³
		Light Compaction: Optimum Moisture Content		5 % to 30 %
		Heavy Compaction: Maximum Dry Density	IS 2720 (Part 8)	1 g/cm ³ to 3 g/cm ³
		Heavy Compaction: Optimum Moisture Content		5 % to 25 %

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		California Bearing Ratio (CBR)	IS 2720 (Part 16)	1 % to 80 %
		Moisture Content	IS 2720 (Part 2)	1 % to 50 %
		Specific Gravity	IS 2720 (Part 3, Sec 1 & 2)	1 to 3
		Unconfined Compression	IS 2720 (Part 10)	0.05 kg/cm ² to 4.0 kg/cm ²
		Shear strength by Tri-Axial	IS 2720 (Part 11)	C: 0.05 kg/cm ² to 4.0 kg/cm ² Ø: 1° to 40°
		Shear Strength by Direct Shear	IS 2720 (Part 13)	C: 0.05 kg/cm ² to 3.0 kg/cm ² Ø: 1° to 45°