

Laboratory **Manglam Consultancy Services, 151/1/A-B, G.I.D.C. Phase-2, Bholav, Dist. Bharuch, Gujarat**

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

Certificate Number **TC-7908**

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Validity **26.09.2018 to 25.09.2020**

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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MECHANICAL TESTING

I.	BUILDING MATERIALS			
1.	Aggregate Coarse	Sieve Analysis	IS 2386 (Part 1)	0.1 % to 100 % (4.75 mm to 125 mm)
		Flakiness Index	IS 2386 (Part 1)	5 % to 40 %
		Elongation Index	IS 2386 (Part 1)	5 % to 40 %
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	1 % to 10 %
		Impact Value	IS 2386 (Part 4)	1 % to 50 %
		Crushing Value	IS 2386 (Part 4)	1 % to 60 %
		Abrasion Value - Los Angeles	IS 2386 (Part 4)	1 % to 60 %
2.	Aggregate Fine	Sieve Analysis	IS 2386 (Part 1)	0.1 % to 100 % (0.15 mm to 10 mm)
		Material Finer than 75 Micron	IS 2386 (Part 1)	0 to 5 %
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	1 % to 10 %
3.	Bitumen	Specific Gravity	IS 1202	0.98 to 1.102
		Penetration	IS 1203	35 to 100 (1/10mm)
		Softening Point	IS 1205	200 °C to 650 °C
		Absolute Viscosity	IS 1206 (Part 2)	800 poises to 4800 poises
		Kinematics Viscosity	IS 1206 (Part 3)	250 cSt to 700 cSt
		Ductility	IS 1208	25 cm to 100 cm
4.	Bituminous Mix	Marshall Stability	ASTM D 6927	6 kN to 25 kN
		Marshall Flow	ASTM D 6927	1 mm to 10 mm
		Density	ASTM D 2726	1.5 g/cc to 3.5 g/cc
		Binder Content	IRC SP-11	1 % to 10 %

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5.	Bricks (Burnt Clay/Fly Ash)	Dimensions Burnt Clay Bricks	IS 1077	L:4400 mm to 4800 mm W:2000 mm to 2300 mm H:1200 mm to 1500 mm
		Dimensions Fly Ash Bricks	IS 12894	L: 4520 to 4680 mm W: 2160 to 2240 mm H: 1360 to 1440 mm
		Compressive Strength	IS 3495 (Part 1)	2.5 N/mm ² to 20 N/mm ²
		Water Absorption	IS 3495 (Part 2)	2 % to 25 %
6.	Precast Concrete Paving Block	Efflorescence	IS 3495 (Part 3)	Qualitative
		Water Absorption	IS 15658	0.5 % to 20 %
		Compressive Strength	IS 15658	5 N/mm ² to 88 N/mm ²
7.	Cement (OPC / PPC)	Fineness by Blaine's Air Permeability	IS 4031 (Part 2)	100 m ² /kg to 600 m ² /kg
		Soundness by Le-Chatelier Method	IS 4031 (Part 3)	0.5 mm to 10 mm
		Standard Consistency	IS 4031 (Part 4)	25 % to 40 %
		Initial Setting Time	IS 4031 (Part 5)	30 minutes to 250 minutes
		Final Setting Time	IS 4031 (Part 5)	100 minutes to 700 minutes
		Compressive Strength	IS 4031 (Part 6)	10 N/mm ² to 80 N/mm ²
		Density	IS 4031 (Part 11)	3.0 to 3.25
8.	Concrete	Compressive Strength - Cube	IS 516	10 N/mm ² to 80 N/mm ²
		Flexural Strength	IS 516	2 N/mm ² to 10 N/mm ²
II.	SOIL & ROCK			
1.	Soil	Specific Gravity	IS 2720 (Part 3 & Sec 1)	2.4 to 3.0
		Sieve Analysis (Wet Analysis)	IS 2720 (Part 4)	0.1 % to 100 % (0.075 mm to 4.75 mm)
		Liquid Limit	IS 2720 (Part 5)	22 % to 120 %
		Plastic Limit	IS 2720 (Part 5)	6 % to 50 %

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		Light Compaction	IS 2720 (Part 7)	MDD:1.4 g/cc to 2.6 g/cc OMC: 5 % to 40 %
		Heavy Compaction	IS 2720 (Part 8)	MDD:1.4 g/cc to 2.6 g/cc OMC: 5 % to 40 %
		Direct Shear (Undrained)	IS 2720 (Part 13)	C: 0.1 kg/cm ² to 0.4 kg/cm ² Φ: 5° to 50°
		Consolidation	IS 2720 (Part 15)	Cc=0.05 % to 2.0 % Pc=0.1 kg/cm ² to 8.0 kg/cm ²
		California Bearing Ratio	IS 2720 (Part 16)	1 % to 60 %
		Free Swell Index	IS 2720 (Part 40)	Upto 400 %
III.	MECHANICAL PROPERTIES OF METALS			
1.	High Strength Deformed Steel Bars	Mass per meter	IS 1786	0.1 kg/m to 9.5 kg/m (0.1 kg to 10 kg)/0.5 g
		Tensile Strength	IS 1608 (Part 1)	20 N/mm ² to 1000 N/mm ² (20 kN to 1000 kN/ 0.01 kN)
		Yield Stress	IS 1608 (Part 1)	20 N/mm ² to 1000 N/mm ² (20 kN to 1000 kN 0.01 kN)
		Elongation	IS 1608 (Part 1)	10 % to 40 % (5 mm to 200 mm 0.01 mm)
		Bend Test	IS 1599	Qualitative (Mandrel Dia. in mm 24, 30, 32, 36, 40, 48, 64, 66, 80, 100, 125, 128, 160)

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