

Laboratory **Darshan Consultancy Cell, Darshan Institute of Engineering and Technology, Rajkot-Morbi Road, Post: Hadala, Rajkot, Gujarat**

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

Certificate Number **TC-6067**

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Validity **01.08.2017 to 31.07.2019**

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.	Cement	Consistency	IS 4031 (Part 4)	25 % to 40 %
		Initial Setting Time	IS 4031 (Part 5)	5 Min. to 300 Min.
		Final Setting Time	IS 4031 (Part 5)	30 Min. to 600 Min.
		Compressive Strength	IS 4031 (Part 6)	10 N/mm ² to 80 N/mm ²
		Soundness by Le-Chatelier Method	IS 4031 (Part 3)	0.5 mm to 10 mm
		Fineness by Blain's Method	IS 4031 (Part 2)	100 m ² /kg to 500 m ² /kg
		Fineness by sieving	IS 4031 (Part 1)	1 % to 10 %
		Density	IS 4031 (Part 11)	2 gm/cc to 3.5 gm/cc
2.	Concrete			
a.	Hardened Concrete	Compressive Strength	IS 516	10 N/mm ² to 80 N/mm ²
		Flexural strength	IS 516	2 N/mm ² to 10 N/mm ²
b.	Fresh Concrete	Slump test	IS 1199	10 mm to 250 mm
3.	Brick and Blocks	Compressive Strength	IS 3495 (Part 1)	2.5 N/mm ² to 35 N/mm ²
		Water Absorption	IS 3495 (Part 2)	2 % to 25 %
		Efflorescence	IS 3495 (Part 3)	Qualitative
		Dimension	IS 1077	Length 4520 mm - 4680 mm Width 2160 mm - 2240 mm Height 1360 mm - 1440 mm
4.	Aggregates			
a.	Coarse Aggregate	Grading	IS 2386 (Part 1)	4.75 μm to 80 mm
		Bulk Density	IS 2386 (Part 3)	1.2 - 1.6 kg/L
		Flakiness Index	IS 2386 (Part 1)	2 % to 60 %
		Elongation Index	IS 2386 (Part 1)	2 % to 60 %

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		Impact value	IS 2386 (Part 4)	2.5 % to 50 %
		Crushing Value	IS 2386 (Part 4)	1 % to 60 %
		Loss Angles Abrasion Value	IS 2386 (Part 4)	1% to 60 %
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	0.1 % to 10 %
b.	Fine Aggregate	Grading	IS 2386 (Part 1)	75 µm to 10mm
		Bulk Density	IS 2386 (Part 3)	1.2 kg/L to 1.8 kg/L
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	0.5 % to 10 %
5.	Bitumen			
a.	Bitumen	Specific Gravity	IS 1202	0.99 to 1.102
		Ductility	IS 1208	5 cm to 100 cm
		Penetration	IS 1203	50 mm to 100 mm
		Softening Point	IS 1205	40°C to 80°C
		Absolute Viscosity at 60°C	IS 1206 (Part 2)	600 Poise to 5600 Poise
		Kinematics Viscosity at 135°C	IS 1206 (Part 3)	200 C.st to 600 C.st
b.	Bitumen Mix	Binder Content	ASTM D 2172	1 % to 10 %
		Marshal Stability	ASTM D 6927	5 kN to 25 kN
		Flow Test	ASTM D 6927	1 mm to 10 mm
		Density	ASTM D2041	2 gm/cc to 3 gm/cc
II.	MECHANICAL PROPERTIES OF METALS			
1.	Reinforcement Steel	Mass per meter	IS 1786	0.1 kg/m to 9.5 kg/m
		Tensile Strength	IS 1608	100 N/mm ² to 800 N/mm ² (Upto 20 mm ø TMT bar)
		Yield Stress	IS 1608	100 N/mm ² to 800 N/mm ² (Upto 20 mm ø TMT bar)
		Elongation	IS 1608	10 % to 40 %

Pankaj Goyal
Convenor

N. Venkateswaran
Program Director

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		Bend Test	IS 1599	Mandrel Diameter in mm 24, 30, 32, 36, 40, 48, 64, 66, 80, 100, 125, 128, 160
		Re-bend Test	IS 1786	Mandrel Diameter (40, 50, 84, 112, 140, 175, 224 mm)
III.	SOIL AND ROCK			
1.	Soil and Rock	Grain Size analysis	IS 2720 (Part 4)	75 μ m to 40 mm
		California Bearing Ratio	IS 2720 (Part 16)	1 % to 60 %
		MDD-OMC by Light Compaction	IS 2720 (Part 7)	MDD: 1 gm/cc to 2.1 gm/cc OMC 5 % to 40 %
		MDD-OMC by Heavy Compaction	IS 2720 (Part 8)	MDD: 1.4 gm/cc to 2.6 gm/cc OMC 5 % to 40 %
		Direct Shear Test	IS 2720 (Part 13)	0 kg/cm ² to 0.8 kg/cm ² ϕ 0° to 50°
		Free Swell Index	IS 2720 (Part 40)	10 % to 100 %
		Specific Gravity	IS 2720 (Part 3)	2.4 to 3.0
		Liquid Limit	IS 2720 (Part 5)	25 % to 80 %
		Plastic Limit	IS 2720 (Part 5)	5 % to 50 %

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