

Laboratory **Bhargava Building Atelier (P) Ltd., Argade ki Gali, Dal Bazar Tiraha, Gwalior, Madhya Pradesh**

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

Certificate Number **TC-6706 (in lieu of T-2707)**

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Validity **24.11.2017 to 23.11.2019**

Last Amended on **03.01.2018**

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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MECHANICAL TESTING

I. BUILDING MATERIALS				
1.	Cement (OPC 53 Grade / 43 Grade & PPC)	Standard Consistency	IS 4031 : Part-4	23% to 35%
		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 a)Le-chatelier's Method	IS 4031 : Part-3	0.10 mm to 10 mm
2.	Concrete	Compressive Strength	IS 516	1 Mpa to 75 Mpa
3.	Fine Aggregates	Sieve Analysis	IS 2386 Part 1	0.150 mm to 4.75 mm
		Water Absorption	IS 2386 : Part 3	0.1 % to 3 %
		Specific Gravity	IS 2386 : Part 3	1.0 g/cc to 3.0 g/cc
		Bulk Density	IS 2386 : Part 3	1.0 g/cc to 2.0 g/cc
4.	Coarse Aggregates	Sieve Analysis	IS 2386 Part 1	4.75 mm to 125 mm
		Water Absorption	IS 2386 : Part 3	0.1 % to 10 %
		Flakiness Index	IS 2386 Part 1	1 % to 100 %
		Elongation Index	IS 2386 Part 1	1 % to 100 %
		Crushing Value	IS 2386 Part 4	1 % to 50 %
		Impact Value	IS 2386 Part 4	1 % to 50 %
		Specific Gravity	IS 2386 : Part 3	1.0 to 4.0
		Bulk Density	IS 2386 : Part 3	2 g/cc to 4 g/cc
5.	Bitumen	Bitumen Content %	ASTM D 2172	1% to 10 %
II. SOIL AND ROCK				
1.	Soil	Moisture Analysis	IS 2720 Part 2	1 % to 30 %
		Liquid Limit	IS 2720 : Part 5	20 % to 80 %
		Plastic Limit	IS 2720 : Part 5	15 % to 60 %
		Specific Gravity	IS 2720 : Part 3/Sec 2	1.5 g/cc to 3 g/cc

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		Grain Size Analysis	IS 2720 : Part 4	4.75 mm to 75 micron
		Free Swell Index	IS 2720 : Part 40	1% to 100%
		Swelling Pressure	IS 2720 : Part 41	0.1 kg/Sq.cm to 2.0 kg/Sq.cm
		Consolidation Test	IS 2720 : Part 15	0.1 kg/Sq.cm to 38 kg/Sq.cm
		Direct Shear Test	IS 2720 : Part 13	C : Up to 1.0 kg/Sq.cm ϕ : 5° to 45°
		Triaxial Test with Pore Pressure measurement	IS 2720: Part 12	C : Up to 2.0 kg/Sq.cm ϕ : 5° to 40°
		Light Compaction	IS 2720 : Part 7	MDD: 1.40 g/cc to 2.0 g/cc OMC: 10 % to 30 %
		Heavy Compaction	IS 2720 : Part 8	MDD: 1.40 g/cc to 2.5 g/cc OMC: 10 % to 30 %
		CBR	IS 2720 : Part 16	0.5 % to 35 %
III.	MECHANICAL PROPERTIES OF METALS			
1.	Reinforcement Steel	Ultimate Tensile Strength	IS 1608	10 to 40 kN/0.10 kN 20 to 100 kN/0.25 kN 20 to 200kN/0.50 kN 20 to 400kN/1.0 kN @ 100 to 700 N/mm ²
		Yield Stress	IS 1608	10 to 40 kN/0.10 kN 20 to 100 kN/0.25 kN 20 to 200 kN/0.50 kN 20 to 400 kN/1.0 kN @ 100 to 700 N/mm ²
		% Elongation	IS 1786	10 to 40 kN/0.10 kN 20 to 100 kN/0.25 kN 20 to 200 kN/0.50 kN 20 to 400 kN/1.0 kN @ 12 % to 30 %

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		Mass Per Meter	IS 1786	50 g to 30 kg/m / 0.5 g
		Bend Test	IS 1599	22.5 mm, 30 mm & 50 mm mandrel size
		Re-Bend Test	IS 1786	22.5 mm, 30 mm & 50 mm mandrel size

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