

Laboratory	Bhargava Building Atelier (P) Ltd., Argade ki Gali, Dal Bazar Tiraha, Gwalior, Madhya Pradesh		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Mechanical Testing	Issue Date	24.11.2015
Certificate Number	T-2707	Valid Until	23.11.2017
Last Amended on	29.01.2016	Page	1 of 3

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. BUILDING MATERIALS				
1.	Cement (OPC 53 Grade/ 43 Grade & PPC)	Standard Consistency	IS 4031 (Part 4): 1998 (RA 2009)	25 % to 35 %
		Initial Setting Time	IS 4031 (Part 5): 1998 (RA 2009)	30 min to 200 min
		Final Setting Time	IS 4031 (Part 5): 1998 (RA 2009)	100 min to 600 min
		Compressive Strength	IS 4031 (Part 6): 1988 (RA 2009)	10 N/mm ² to 80 N/mm ²
		Soundness by Le-Chatelier's Method	IS 4031 (Part 3): 1988 (RA 2009)	0.10 mm to 10 mm
2.	Concrete	Compressive Strength	IS 516: 1959 (RA 2004)	1 MPa to 75 MPa
3.	Aggregate (Coarse/Fine)	Sieve Analysis	IS 2386 (Part 1): 1963 (RA 2007)	4.75 mm to 125 mm
		Water absorption	IS 2386 (Part 3): 1963 (RA 2007)	0.1 % to 10 %
		Specific Gravity	IS 2386 (Part 3): 1963 (RA 2007)	2.5 to 3.5
		Flakiness Index	IS 2386 (Part 1): 1963 (RA 2007)	5 % to 60 %
		Elongation Index	IS 2386 (Part 1): 1963 (RA 2007)	5 % to 60 %

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	Aggregate (Coarse/Fine)	Crushing Value	IS 2386 (Part 4): 1963 (RA 2007)	5 % to 60 %
		Impact Value	IS 2386 (Part 4): 1963 (RA 2007)	5 % to 60 %
		Bulk Density	IS 2386 (Part 3): 1963 (RA 2007)	2 g/cc to 4 g/cc
4.	Reinforcement Steel	Ultimate Tensile Strength	IS 1608: 2005 (RA 2013)	100 N/mm ² to 700 N/mm ²
		Yield Stress	IS 1608: 2005 (RA 2013)	100 N/mm ² to 700 N/mm ²
		Mass per meter	IS 1786: 2008 (RA 2013)	0.1 kg/m to 10 kg/m
		Bend Test	IS 1599: 1985 (RA 2012)	Mandrel size: 8 mm, 12 mm, 16 mm
		Re-Bend Test	IS 1786: 2008 (RA 2013)	Mandrel size: 8 mm, 12 mm, 16 mm
		% Elongation	IS 1608: 2005 (RA 2013)	10 % to 30 %
II. SOIL AND ROCK TESTING				
1.	Soil	Moisture Content	IS 2720 (Part 2): 1973 (RA 2010)	1 % to 30 %
		Liquid Limit	IS 2720 (Part 5): 1985 (RA 2006)	20 % to 80 %
		Plastic Limit	IS 2720 (Part 5): 1985 (RA 2006)	15 % to 60 %

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Last Amended on **29.01.2016** **Page** **3 of 3**

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Soil	Specific Gravity	IS 2720 (Part 3): 1980 (RA 2011)	1.5 g/cc to 3 g/cc
		Grain Size Analysis	IS 2720 (Part 4): 1985 (RA 2010)	4.75 mm to 75 micron
		Free Swell Index	IS 2720 (Part 40): 1977	1 % to 100 %
		Swelling Pressure	IS 2720 (Part 41): 1977 (RA 2002)	0.1 kg/cm ² to 2.0 kg/cm ²
		Consolidation Test	IS 2720 (Part 15): 1986 (RA 2011)	0.1 kg/cm ² to 8.0 kg/cm ²
		Direct Shear Test	IS 2720 (Part 13): 1986 (RA 1997)	C: 0 to 1.0 kg/cm ² Φ: 5° to 45°
		Triaxial Test with Pore Pressure	IS 2720 (Part 12): 1981	C: 0 to 2.0 kg/cm ² Φ: 5° to 40°
		Light Compaction	IS 2720 (Part 7): 1980 (RA 2011)	MDD: 1.40 g/cc to 1.95 g/cc OMC: 10 % to 30 %
		Heavy Compaction	IS 2720 (Part 8):1983 (RA 2010)	MDD: 1.40 g/cc to 1.95 g/cc OMC: 10 % to 30 %
		CBR	IS 2720 (Part 16): 1987 (RA 2002)	0.5 % to 35 %

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