

Laboratory Venus Testing and Research Laboratory, Venus House, Ayodhya By Pass Road, Village Damkheda, Bhopal, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6616

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Validity 26.04.2018 to 25.04.2020

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.	METALS & ALLOYS			
1.	Plain Carbon & Alloy Steel	Carbon	IS 228 (Part-1): 1987 RA 2018	0.05% to 2.50%
		Sulphur	IS 228 Part-9): 1989 RA 2014	0.01% to 0.25 %
		Phosphorous	IS 228 (Part-3): 1987 RA 2018	0.01% to 0.025 %
		Manganese	IS 228 (Part-2): 1987 RA 2018	0.1 to% 1.5 %
		Silicon	IS 228 (Part-8): 1989 RA 2014	0.05% to 5.0 %

Malancha Das
Convenor

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Program Director

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MECHANICAL TESTING

I. BUILDING MATERIALS				
1.	Cement	Standard Consistency	IS: 4031 (Part-4):1988 (RA2009)	20.0% to 40.0%
		Fineness by Blain's Air Permeability	IS: 4031 (Part-2):1999 (RA2008)	100 m ² /kg to 500 m ² /kg
		Soundness by Le-Chatelier	IS: 4031 (Part-3):1988 (RA2014)	0.5mm to 20mm
		Initial Setting Time	IS: 4031 (Part-5):1988 (RA2009)	30min. to 300 min.
		Final Setting Time	IS: 4031 (Part-5):1988 (RA2009)	30 min. to 600 min.
		Compressive Strength	IS: 4031 (Part-6):1988 (RA2009)	10 MPa to 70MPa
2.	Concrete	Compressive Strength	IS: 516:1959 (RA 2013)	8.88 MPa to 88.8 MPa
3.	Coarse Aggregate	Sieve Analysis	IS: 2386 (Part-1):1963 (RA2016)	80 mm to 2.36 mm
		Water Absorption	IS: 2386 (Part-3):1963 (RA2016)	0.1 % to 1.5 %
		Specific Gravity	IS: 2386 (Part-3):1963 (RA2016)	1 to 3
		Crushing Value	IS: 2386 (Part-4):1963 (RA2016)	5% to 50 %
		Impact Value	IS: 2386 (Part-4):1963 (RA2016)	5% to 50 %
		Bulk Density	IS: 2386 (Part-3):1963 (RA2016)	1 kg/l to 2 kg/l
		Flakiness Index	IS: 2386 (Part-1):1963 (RA2016)	5 %to 60 %

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		Elongation Index	IS: 2386 (Part-1):1963 (RA2016)	5% to 60 %
		10 % Fines Value	IS: 2386 (Part-4):1963 (RA2016)	5 Ton to 50 Ton
4.	Fine Aggregate	Sieve Analysis	IS: 2386 (Part-1) 1963 (RA 2016)	10 m to 150 µm
		Water Absorption	IS: 2386 (Part-3) 1963 (RA2016)	0.1 to 4 %
		Specific Gravity	IS: 2386 (Part-3) 1963 (RA2016)	1.50 to 3.00
		Bulking of Sand	VTRL/SOP/F/02) Issue No. 02 Issue Date 17/07/2014 CPWD Vol – 1	0.10% to 10.00 %
		Silt Content	VTRL/SOP/F/02) Issue No. 02 Issue Date 17/07/2014 CPWD Vol –1	0.10% to 10.00 %
		Moisture Content	IS: 2386 (Part-3) 1963 (RA2016)	0.1% to 20.00%
5.	Burnt clay/ Fly Ash Bricks	Compressive strength	IS: 3495 (Part-1):1992 (RA2011)	3.00 N/mm ² to 60.00 N/mm ²
		Water Absorption	IS: 3495 (Part-2):1992 (RA2011)	1.00% to 25.00 %
		Efflorescence	IS: 3495 (Part-3):1992 (RA2011)	Qualitative
		Dimensions Length: Width: Height:	IS: 1077:1992 (RA2011)	3000 mm to 5800 mm 1500 mm to 2200 mm 1000 mm to 1600 mm
6.	Ceramic Tiles	Water Absorption	IS: 13630 (Part-2):2006 (RA2016)	0.10% to 25.00 %
		Modulus of rupture	IS: 13630 (Part-6):2006 (RA2016)	1.00 MPa to 15.00 MPa

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7.	Concrete Paving Block	Water Absorption Compressive Strength	IS: 15658: 2006 (RA2016) IS: 15658: 2006 (RA2016)	0.10% to 25.00 % 15 N/mm ² to 75 N/mm ²
II.	SOIL AND ROCK			
1.	Soil	Grain Size Analysis (Sieves)	IS: 2720 (Part-4):1985 (RA2015)	75 µm to 40 mm
		Light Compaction		
		-MDD	IS: 2720 (Part-7):1980 (RA2011)	1.40 g/cc to 3.00 g/cc
		-OMC	IS: 2720 (Part-7):1980 (RA2011)	1.00% to 50.00 %
		Heavy Compaction		
		-MDD	IS: 2720 (Part-8):1983 (RA2015)	1.0g/cc to 3.00 g/cc
		-OMC	IS: 2720 (Part-8):1983 (RA2015)	1.0%to 50.00 %
		Moisture Content	IS: 2720 (Part-2):1973 (RA2015)	1.00%to 35.00 %
		C.B.R.	IS: 2720 (Part-16):1987 (RA2011)	1.0 %to 50.00 %
		Liquid Limit	IS: 2720 (Part-5):1985 (RA2015)	10.00 %to 70.00 %
		Plastic Limit	IS: 2720 (Part-5):1985 (RA2015)	10.00% to 70.00 %
		Free Swell Index	IS: 2720 (Part-40):1977 (RA2011)	10.00% to 60.00 %
		Shrinkage limit	IS: 2720 (Part-6):1972 (RA2011)	1.00 %to 30.00 %
III.	MECHANICAL PROPERTIES OF METALS			
1.	Reinforcement/ Structural Steel	Tensile Strength	IS 1608:2005 (RA 2011)	100.00 kN to1000 kN
		Yield Strength	IS 1608:2005 (RA 2011)	100.00 kN kN 1000 kN
		Elongation	IS 1608:2005 (RA 2011)	Upto 50 %
		Reduction in area	IS 1608:2005 (RA 2011)	Upto 50 %

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		Weight per Meter Rockwall Hardness (B Scale) Rockwall Hardness (C Scale)	IS 1786:2008 (RA2013) IS 1586:2000 (RA2010) IS 1586:2000 (RA2010)	0.204 kg/m to 10.155 kg/m HRB (60.4 to 96.2) HRC (21.8-60.1)
		Bend	IS 1599:2012 (RA2015)	Qualitative (Mandrel Dia: 10,16,20,24,30,32,36,40, 48,50,56,60,64,72,75,80, 84,100,112,125,180,185, 200,212) mm
		Rebend	IS 1786:2008 (RA2013)	Qualitative (Mandrel Dia: 10,16,20,24,30,32,36,40, 48,50,56,60,64,72,75,80, 84,100,112,125,180,185, 200,212) mm
		Charpy Impact	IS 1757 (Part 1) 2014	Upto 300 J