

Laboratory KCT Consultancy Services, "KCT House", Plot No. 1, Shayona Silver Estate, Part-II, Off. S. G. Road, Gota, Ahmedabad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6189 (in lieu of T-2060)

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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.	Coarse Aggregate	Impact Value	IS 2386 (Part 4): 1963 (RA 2016) Clause. 4	2.0 % to 60.0 %
		Abrasion Value	IS 2386 (Part 4): 1963 Clause. 5 (RA 2016)	2.0 % to 60.0 %
		Elongation Index	IS 2386 (Part 1): 1963 (RA 2016) Clause. 5	2.0 % to 50.0 %
		Flakiness Index	IS 2386 (Part 1): 1963 (RA 2016) Clause. 4	2.0 % to 50.0 %
		Gradation	IS 2386 (Part 1): 1963 (RA 2016) Clause. 2	150 mm to 4.75 mm (0.0 % to 100 %)
		Water Absorption	IS 2386 (Part 3): 1963 (RA 2016) Clause. 2	0 to 4.0 %
		Specific Gravity	IS 2386 (Part 3): 1963 (RA 2016) Clause. 2	1 to 3
		Crushing Value	IS 2386 (Part 4): 1963 (RA 2016) Clause. 2	1.0 % to 50.0 %
		10% Fines Value	IS 2386 (Part 4): 1963 (RA 2016) Clause. 3	10 T to 30 T
2.	Fine Aggregate	Gradation	IS 2386 (Part 1): 1963 (RA 2016) Clause. 2	10 mm to 0.075 mm (0.0 % to 100%)
		Water Absorption	IS 2386 (Part 3): 1963 Clause. 2 (RA 2016)	0 % to 3.0 %
		Specific Gravity	IS 2386 (Part 3): 1963 (RA 2016) Clause. 2	1.0 to 3.0
		Silt Content	IS 2386 (Part 1): 1963 (RA 2016) Clause. 3	1.0 % to 30.0 %
3.	Paver Blocks	Water Absorption	IS 15658: 2006, (RA 2016), Annexure C	0.5 % to 25 %

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4.	Bricks	Compressive Strength	IS 3495 (Part 1): 1992 (RA 2011)	1 kgf/cm ² to 200 kgf/cm ²
		Water Absorption	IS 3495 (Part 2): 1992 (RA 2011)	0.5 % to 25 %
		Efflorescences	IS 3495 (Part 3): 1992 (RA 2011)	Qualitative (Visual Assessment)
		Dimension	IS 1077: 1992 (RA 2011)	Width: 165 cm to 275 cm
				Length: 360 cm to 600 cm
				Height: 120 cm to 200 cm
5.	Bitumen	Softening Point	IS 1205: 1978 (RA 2009)	20 °C to 100 °C
		Penetration	IS 1203: 1978 (RA 2009)	1 mm to 44 mm
		Ductility on Residue	IS 1208: 1978 (RA 2009)	15 cm to 100 cm
		Absolute Viscosity	IS 1206 (Part 2): 1978 (RA 2009)	360 poise to 3000 poise
		Flash Point	IS 1209: 1978 (RA 2009)	20 °C to 300 °C
6.	Autoclave Aerated Block	Compressive strength	IS 6441 (Part-5):1972 (RA 2011)	20 kg/cm ² to 100 kg/cm ²
		Moisture content	IS 6441 (Part-1):1972 (RA 2011)	1 % to 30 %
		Dimensions	IS 2185 (Part-3):1984 (RA 2010)	Length→ 390 to 610 mm Breadth→ 190 to 310mm Height→ 90 to 260 mm
		Dry density	IS 6441 (Part-1):1972 (RA 2011)	40 kg/m ³ to 1000 kg/m ³
7.	Cement	Consistency	IS 4031 (Part 4): 1988 (RA 2009)	10 % to 45 %
		Initial Setting Time	IS 4031 (Part 5): 1988 (RA 2009)	10 min to 250 min
		Final Setting Time	IS 4031 (Part 5): 1988 (RA 2009)	20 min to 800 min
		Compressive Strength	IS 4031 (Part 6): 1988	10 N/mm ² to 85 N/mm ²

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			(RA 2009)	
		Soundness With Le-Chattalier	IS 4031 (Part 3): 1988 (RA 2014) Clause. 5	0.2 mm to 15 mm
		Soundness by Autoclave	IS 4031 (Part 3): 1988 (RA 2014)	0.01 % to 2.0 %
		Fineness by Blain Air Permeability (OPC)	IS 4031 (Part 2): 1999 (RA 2008)	200 m ² /kg to 700 m ² /kg
8.	Hardened Concrete	Compressive Strength of Cubes	IS 516: 1959 (RA 2013)	2 N/mm ² to 80 N/mm ²
		Workability of Fresh Concrete (Slump)	IS 1199: 1959 (RA 2013)	1 mm to 200 mm
9.	Vitrified Tiles Ceramic Tiles	Dimensions	IS 13630 (Part-1):2006 (RA 2016)	Length→100 to 1000 mm Width→ 100 to 1000 mm Thickness → 1 to 15 mm
		Straightness of sides	IS 13630 (Part-1):2006 (RA 2016)	(±) 0.01 % to 0.5 %
		Rectangularity	IS 13630 (Part-1):2006 (RA 2016)	(±) 0.01 % to 0.5 %
		Surface flatness	IS 13630 (Part-1):2006 (RA 2016)	(±) 0.01 % to 0.5 %
		Water absorption	IS 13630 (Part-1):2006 (RA2016)	0.01 % to 25 %
		Modulus of rupture	IS 13630 (Part-6):2006 (RA 2016)	5 N/mm ² to 100 N/mm ²
		Breaking strength	IS 13630 (Part-6):2006 (RA 2016)	100 N to 9000 N
		Scratch hardness	IS 13630 (Part-13):2006 (RA 2016)	1 Moh's to 10 Moh's scale
10.	Cement Concrete Tiles	Wet Transverse Strength	IS 1237: 2012, (RA 2016) Annexure E	0.2 N/mm ² to 15 N/mm ²
		Water Absorption	IS 1237: 2012, (RA 2016) Annexure D	0 % to 20.0 %

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II.	MECHANICAL PROPERTIES OF METALS			
1.	Reinforcement Steel	Ultimate Tensile Strength	IS 1608: 2005 (RA 2011)	100 N/mm ² to 850 N/mm ²
		0.2 % Proof Stress	IS 1608: 2005 (RA 2011)	100 N/mm ² to 650 N/mm ²
		Elongation	IS 1608: 2005 (RA 2011)	1.0 % to 40.0 %
		Bend Test	IS 1599: 2012 (RA 2015)	Mandrel Diameter for Different Grades (2φ, 3φ, 4φ, 5φ, 6φ, 7φ, 8φ)
				Qualitative (Visual Assessment)
		Re-Bend Test	IS 1786: 2008 (RA 2013)	Mandrel Diameter for Different Grades (4φ, 5φ, 6φ, 7φ, 9φ)
				Qualitative (Visual Assessment)
II.	SOIL & ROCKS			
1.	Soil	Sieve Analysis by Dry Sieving	IS 2720 (Part 4): 1985 (RA 2015) Clause. 3	80 mm to 4.75 mm (0 to 100 %)
		Sieve Analysis by Wet Sieving	IS 2720 (Part 4): 1985 (RA 2015) Clause. 4	For size: 4.75 mm to 0.075 mm (0 to 100 %)
		Liquid Limit	IS 2720 (Part 5): 1985 (RA 2015)	10 % to 400 %
		Plastic Limit	IS 2720 (Part 5): 1985 (RA 2015)	10 % to 50 %
		Light Compaction	IS 2720 (Part 7): 1980 (RA 2011)	MDD: 1.0 g/cc to 2.50 g/cc
				OMC 2 % to 30.0 %
		Heavy Compaction	IS 2720 (Part 8): 1983	MDD

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			(RA 2015)	1.0 gm/cc to 2.50 gm/cc
				OMC 1 % to 30.0 %
		California Bearing Ratio	IS 2720 (Part 16): 1987 (RA 2011) Clause. 6	1 % to 80.0 %
		Direct Shear Test	IS 2720 (Part 13): 1986 (RA 2015)	0.0 to 1 kg/cm ²
		Unconfined Compressive Strength	IS 2720 (Part 10): 1991 (RA 2010)	0.1 kg/cm ² to 6.0 kg/cm ²
		Consolidation Properties	IS 2720 (Part 15): 1965 (RA 2011)	0.1 kg/cm ² to 8.0 kg/cm ²
		Swelling Pressure	IS 2720 (Part 41): 1977 (RA 2011)	Upto 3.0 kg/cm ²
		Permeability Test Falling Head Test	IS 2720 (Part 17): 1986 (RA 2011) Clause 6	10 ⁻¹ cm/s to 10 ⁻⁹ cm/s
		Triaxial Shear Test by Unconsolidated Un-Drained Compression Without the measurement of pore water pressure on specimen size 38 mm shell pressure	IS 2720 (Part 11): 1993 (RA 2011)	Cohesion(C) 0 to 5 kg/cm ² and Angle of Internal Friction (φ) 0.5 ° to 20 °
		Free Swell Index	IS 2720 (Part 40): 1977 (RA 2011)	0% to 300 %

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AT SITE

I.	SOIL AND ROCKS			
1.	Soil	Standard Penetration Test	IS 2131: 1981 (RA 2011)	1 blows to 300 blows
		Standard Cone Penetration Test	IS 4968 (Part 3): 1976 (RA 2011)	Using 35.7 mm diameter cone. 0.0 to 20 m or Up to 10T load
		Dynamic Cone Penetration Test	IS 4968 (Part 1): 1976 (RA 2011)	Using 50 mm Cone. 0.0 to 20 m in overburden or 1 to 35 blows for 100 mm
		Plate Load Test	IS 1888: 1982 (RA 2011)	On Plate size 30 cm, 45 cm, 60 cm & 75cm & 15 KN to 1000 KN
		Sand Replacement	IS 2720 (Part 28): 1974 (RA 2015)	1.0 g/cc to 3.00g/cc
		Field CBR Test	IS 2720 (Part 31): 1990 (RA 2010)	1 % to 80 %