

Laboratory **Geo Infra Testing & Consultancy Services, Dhandha, Himmatnagar, Dist. Sabar Kantha, Gujarat**

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

Certificate Number **TC-7040**

Page 1 of 5

Validity **16.03.2018 to 15.03.2020**

Last Amended on **06.05.2019**

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	Sieve Analysis, Gradation(Upto 63 mm)	IS 2386 (Part 1): 1963 (RA 2016)	Upto 100 %
		Specific Gravity	IS 2386 (Part 3):1963 (RA 2016)	1 to 4
		Water Absorption	IS 2386 (Part 3):1963 (RA 2016)	0.1 % to 10 %
		Flakiness Index	IS 2386 (Part 1): 1963 (RA 2016)	1 % to 70 %
		Elongation Index	IS 2386 (Part 1):1963 (RA 2016)	1 % to 70 %
		Aggregate Impact Value	IS 2386 (Part 4):1963 (RA 2016)	1 % to 50 %
		Los Angeles Abrasion Value	IS 2386 (Part 4):1963 (RA 2016)	1 % to 50 %
2.	Fine Aggregate (Sand)	Sieve Analysis (Up to 4.75 mm)	IS 2386 (Part 1):1963 (RA 2016)	Upto 100 %
		Specific Gravity	IS 2386 (Part 3):1963 (RA 2016)	1 to 4
		Water Absorption	IS 2386 (Part 3):1963 (RA 2016)	0.1 % to 45 %
		Material Finer than 75 µm	IS 2386 (Part 1):1963 (RA 2016)	0.1 % to 25 %
3.	Bricks	Dimension: Length	IS 1077:1992 (RA 2016)	1000 mm to 5000 mm
		Dimension: Breadth		1000 mm to 5000 mm
		Dimension: Height		500 mm to 5000 mm
		Compressive Strength	IS 3495 (Part 1):1992 (RA 2016)	2 N/mm ² to 55 N/mm ²
		Water Absorption	IS 3495 (Part 2): 1992 (RA 2016)	1 % to 50 %

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Page 2 of 5

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		Efflorescence	IS 3495 (Part 3): 1992 (RA 2016)	Qualitative
4.	Bitumen	Softening Point	IS 1205:1978 (RA 2014)	10 °C to 100 °C
		Penetration	IS 1203:1978 (RA 2013)	1 to 400 (1/10 mm)
		Ductility	IS 1208:1978 (RA 2014)	20 cm to 100 cm
		Absolute Viscosity	IS 1206 (Part 2):1978 (RA 2014)	360 Poise to 4000 Poise
		Kinematic Viscosity	IS 1206 (Part 3):1978 (RA 2014)	60 cSt to 600 cSt
		Specific Gravity	IS 1202:1978 (RA 2013)	0.99 to 1.102
		Loss on Heating	IS 1212:1978 (RA 2014)	0.1 % to 100 %
5.	Bituminous Mix	Binder Content	IPC SP-11:1988	0.1 % to 10 %
		Marshall Stability	ASTM D 6927-15	0.1 kN to 25 kN
		Flow Test	ASTM D 6927-15	0.01 mm to 6.0 mm
		Compacted Density of Mix	ASTM D 2726-17	1 g/cm ³ to 4 g/cm ³
6	Paver Block	Compressive Strength	IS 15658:2006 (RA 2017)	1 N/mm ² to 75 N/mm ²
		Water Absorption	IS 15658:2006 (RA 2017)	1 % to 20 %
7.	Cement	Consistency	IS 4031 (Part 4):1988 (RA 2014)	20 % to 40 %
		Initial Setting Time	IS 4031 (Part 5):1988 (RA 2014)	25 Minutes to 300 Minutes
		Final Setting Time	IS 4031 (Part 5):1988 (RA 2014)	25 minutes to 600 minutes
		Compressive Strength	IS 4031 (Part 6):1988 (RA 2014)	10 N/mm ² to 80 N/mm ²
		Soundness (Le-chatelier)	IS 4031 (Part 3):1988 (RA 2014)	0.5 mm to 10 mm
		Fineness (Blaine Air Permeability)	IS 4031 (Part 2):1999 (RA 2013)	150 m ² /kg to 600 m ² /kg
8.	Concrete	Compressive Strength	IS 516:1959 (RA 2013)	10 N/mm ² to 85 N/mm ²
		Flexural Strength of Beam	IS 516:1959 (RA 2013)	1 N/mm ² to 25 N/mm ²

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Certificate Number TC-7040

Page 3 of 5

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II.	MECHANICAL PROPERTIES OF METALS			
1.	Steel	Tensile Strength	IS 1608 (Part 1):2018	Upto 750 N/mm ²
		Yield Stress	IS 1608:2005 (RA 2017)	Upto 700 N/mm ²
		Elongation	IS 1608:2005 (RA 2017)	1 % to 55 %
		Bend	IS 1599:2012 (RA 2017)	Qualitative (Mandrel Dia. 18, 24, 30, 36, 40, 48, 60, 80 mm)
III.	SOIL AND ROCK			
1.	Soil	Gradation [Grain Size Analysis] (0.075 to 4.75 mm)]	IS 2720 (Part 4):1985 (RA 2015)	0.01 % to 100 %
		Liquid Limit	IS 2720 (Part 5):1985 (RA 2015)	15 % to 100 %
		Plastic Limit	IS 2720 (Part 5):1985 (RA 2015)	10 % to 50 %
		Light Compaction	IS 2720 (Part 7):1980 (RA 2016)	
		Maximum Dry Density		1.5 g/cm ³ to 3 g/cm ³
		Optimum Moisture Content		5 % to 20 %
		Heavy Compaction	IS 2720 (Part 8):1983 (RA 2015)	
		Maximum Dry Density		1.5 g/cm ³ to 3 g/cm ³
		Optimum Moisture Content		5 % to 20 %
		Tri Axial Shear Test	IS 2720 (Part 15):1965 (RA 2016)	C=0.1 kg/cm ² to 5 kg/cm ² $\phi' = 1^\circ$ to 25°
	California Bearing Ratio	IS 2720 (Part 16):1987 (RA 2016)	1 % to 60 %	
	Direct Shear	IS 2720 (Part 13):1986 (RA 2016)	C=0.02 kg/cm ² to 0.8 kg/cm ² $\phi' = 10^\circ$ to 50°	

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Page 4 of 5

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		Specific Gravity	IS 2720 (Part 3, Sec 1): 1980 (RA 2013)	1.5 to 3
		Shrinkage Limit	IS 2720 (Part 6):1972 (RA 2016)	5 % to 20 %
		Free Swell Index	IS 2720 (Part 40):1977 (RA 2016)	Up to 80 %
		Unconfined Compression Strength	IS 2720 (Part 10):1991 (RA 2015)	0.2 kg/cm ² to 5 kg/cm ²

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Page 5 of 5

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MECHANICAL TESTING

AT SITE				
I.	SOIL AND ROCK			
1.	Soil Field Test	Standard Penetration	IS 2131:1981 (RA 2016)	1 Blow to 100 Blows
		Density (Sand Replacement)	IS 2720 (Part 28):1974	1.5 g/cm ³ to 3 g/cm ³