

Laboratory Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhyog Nagar, Udhna, Surat, Gujarat

Accreditation Standard ISO/IEC 17025: 2017

Certificate Number TC-8053 (in lieu of T-2300, T-4248)

Page 1 of 10

Validity 31.10.2018 to 30.10.2020

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
-----	----------------------------	-------------------------	---	--

MECHANICAL TESTING

I.	Building Material			
1.	Fine Aggregate	Sieve Analysis	IS 2386 (Part 1) - 1963 RA 2016	10 mm to 75 μ
		Finer than 75 Micron.	IS 2386 (Part 1) - 1963 RA 2016	1% to 20 %
		Specific Gravity & Water Absorption	IS 2386 (Part 3) - 1963 RA 2016	2.4 to 3.1 0.1% to 3%
		Bulk Density	IS 2386 (Part 3) - 1963 RA 2016	1.4 kg/lit to 2.2 kg/lit
		Soundness by Sodium Sulphate	IS 2386 (Part 5) - 1963 RA 2016	1% to 20 %
2.	Coarse Aggregate	Sieve Analysis	IS 2386 (Part 1) - 1963 RA 2016	80 mm to 4.75 mm
		Elongation & Flakiness Index	IS 2386 (Part 1) - 1963 RA 2016	5% to 50 %
		Finer than 75 Micron	IS 2386 (Part 1) - 1963 RA 2016	1% to 10 %
		Water absorption	IS 2386 (Part 3) - 1963 RA 2016	0.1% to 05 %
		Specific Gravity	IS 2386 (Part 3) - 1963 RA 2016	2.5 to 3.2
		Bulk Density.	IS 2386 (Part 3) - 1963 RA 2016	1.2 kg/lit to 1.7 kg/lit
		Ten Percent Fines Value	IS 2386 (Part 4) – 1963 RA 2016	10 Tonne to 30 Tonne
		LA Abrasion Value	IS 2386 (Part 4) – 1963 RA 2016	5% to 55 %
		Impact value	IS 2386 (Part 4) – 1963 RA 2016	5% to 55 %

Laboratory **Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat**

Accreditation Standard **ISO/IEC 17025: 2017**

Certificate Number **TC-8053 (in lieu of T-2300, T-4248)**

Page 2 of 10

Validity **31.10.2018 to 30.10.2020**

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
3.	Bitumen	Crushing value	IS 2386 (Part 4) – 1963 RA 2016	5% to 55 %
		Soundness by Sodium Sulphate	IS 2386 (Part 5) – 1963 RA 2016	2% to 25 %
		Striping Value	IS 6241 – 1971 RA 2013	Qualitative
		Specific Gravity	IS 1202-1978 RA 2014	0.95 to 1.05
		Penetration.	IS 1203-1978 RA 2014	30 to 100 (0.1 mm)
		Softening Point.	IS 1205-1978 RA 2014	30 to 65°C
		Ductility.	IS 1208-1978 RA 2014	70 cms to 100 cms
		Kinematic Viscosity	IS 1206 (Part 3) – 1978 RA 2014	250 cSt to 450 cSt
4.	Asphalt Mix	Absolute Viscosity	IS 1206 (Part 2) – 1978 RA 2014	800 Poises to 5000 Poises
		Flash & Fire Point (Cleveland open cup)	IS 1448 (Part 69) – 2013	150°C to 400°C
		Marshall Stability & Flow Value	ASTM D6927-15	Stability: 0.1 kN to 50 kN Flow: 0.1 mm to 10 mm
		Bulk Specific Gravity & Density	ASTM D2726-17	1.8 g/cc to 2.7 g/cc
5.	Bricks & Pre-casted blocks	Theoretical Max. Spec. Gravity	ASTM D2042-15	1.8 g/cc to 2.7 g/cc
		Binder Content	ASTM D2172-17	1.5% to 7.5%
		Burnt Clay Building Brick & Burnt Clay FlyAsh Building Brick	Dimension	IS 1077 – 1992 RA 2016 & IS 12894 – 1993 RA 2017
Determination of Compressive Strength	IS 3495 (Part 1) – 1992 RA 2016		2.5 N/mm ² to 20 N/mm ²	
Determination of water absorption	IS 3495 (Part 2) – 1992 RA 2016		10% to 40 %	

Laboratory **Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhyog Nagar, Udhna, Surat, Gujarat**

Accreditation Standard **ISO/IEC 17025: 2017**

Certificate Number **TC-8053 (in lieu of T-2300, T-4248)** **Page 3 of 10**

Validity **31.10.2018 to 30.10.2020** **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
6	Autoclave Cellular (Aerated) Concrete Blocks	Determination of Efflorescence	IS 3495 (Part 3) – 1992 RA 2016	Qualitative
		Dimensions	IS 2185 (Part 3) - 1984 RA 2015	L : 400 mm to 600 mm W: 100 mm to 250 mm H: 200 mm to 300 mm
		Block Density	IS 6441 (Part 1) - 1972 RA 2017	450 kg/m ³ to 1000 kg/m ³
		Compressive Strength.	IS 6441 (Part 5) - 1972 RA 2017	0.5 N/mm ² to 10 N/mm ²
		Drying Shrinkage	IS 6441 (Part 2) - 1972 RA 2017	0.001% to 0.2%
7.	Paving Block	Water Absorption	IS 15658 – 2006, Annex-C RA 2017	3% to 10 %
		Compressive Strength.	IS 15658 – 2006, Annex-D RA 2017	20 N/mm ² to 70 N/mm ²
		Abrasion Resistance	IS 15658 – 2006, Annex-E RA 2017	3000 to 15000 mm ³ / 5000 mm ²
		Tensile Splitting Strength	IS 15658 – 2006, Annex-F RA 2017	1 N/mm ² to 5 N/mm ²
		Flexural Strength / Breaking Load	IS 15658 – 2006, Annex-G RA 2017	2 N/mm ² to 8 N/mm ²
		Dimension & Tolerance	IS 15658 – 2006, Annex-B RA 2017	50 mm to 300 mm
		Thickness of Wearing Layer	IS 15658 – 2006, Clause 6.2.3, RA 2017	5 mm to 30 mm
		Plan Area	IS 15658 – 2006, Annex-B RA 2017	200 cm ² to 500 cm ²
8.	Concrete Manhole Cover & Frame	Dimension	IS 12592-2002-Ammed. 1 – 2013 – Annex-B	20 cm to 90 cm
		Load Test	IS 12592-2002-Ammed. 1 – 2013 – Annex-C	1 to 50 T

Laboratory

Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat

Accreditation Standard ISO/IEC 17025: 2017

Certificate Number

TC-8053 (in lieu of T-2300, T-4248)

Page 4 of 10

Validity

31.10.2018 to 30.10.2020

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
9.	Cement			
	Cement – OPC, PPC, SRC, PSC	Fineness dry sieve	IS - 4031 – 1996 (Part 1) RA 2016	1 % to 10 %
		Fineness by Specific surface by Blain air permeability	IS - 4031 – 1999 (Part 2) RA 2013	2000 cm ² /g to 5000 cm ² /g
		Soundness by le-chatlier	IS - 4031 – 1988 (Part 3) - Amd.-1-2014	0 to 15 mm
		Consistency	IS - 4031 – 1988 (Part 4) RA 2014	25% to 35%
		Initial Setting Time	IS - 4031 – 1988 (Part 5) RA 2014	30 Min to 150 Min
		Final Setting Time	IS - 4031 – 1988 (Part 5) RA 2014	150 Min to 450 Min
		Compressive strength	IS - 4031 – 1988 (Part 6) RA 2014	10 N/mm ² to 65 N/mm ²
		Specific Gravity	IS - 4031 - 1988 (Part11), RA 2014	2.8 to 3.3
		Drying Shrinkage	IS - 4031 - 1988 (Part 10), RA 2014	0.001 % to 0.5%
10.	Construction Chemicals			
	Thin-bed Mortar for AAC Block	Splitting Tensile Strength	ASTM C1660-10	0.1 N/mm ² to 1.0 N/mm ²
11.	Concrete			
	Concrete – Fresh/Core/Cylinder/Cube	Compressive strength	IS 516-1959, RA 2013	5 N/mm ² to 70 N/mm ²
		Flexural Strength	IS 516-1959, RA 2013	2 N/mm ² to 8 N/mm ²
		Slump Test	IS 1199-1959, RA 2013	0 to 250 mm
		Split Tensile Strength	IS 5816-1999, RA 2013	1 N/mm ² to 5 N/mm ²
		Setting time of Concrete	IS 8142-1976, RA 2016	100 mins to 720 mins
		Comp. Strength by Accelerated Cured Concrete sample	IS 9013-1978 ,RA 2013	5 N/mm ² to 70 N/mm ²

Venugoapl C
Convenor

N. Venkateswaran
Program Manager

Laboratory

Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat

Accreditation Standard

ISO/IEC 17025: 2017

Certificate Number

TC-8053 (in lieu of T-2300, T-4248)

Page 5 of 10

Validity

31.10.2018 to 30.10.2020

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
12.	Fly Ash / Pozzolanic Material			
	Fly Ash/Pozzolana	Fineness by Blain air permeability	IS – 1727-1967 AMD-1-2013	200 m ² /kg to 800 m ² /kg
		Lime Reactivity	IS – 1727-1967 RA 2013	0.5 N/mm ² to 6.0 N/mm ²
		Compressive strength	IS – 1727-1967 RA 2013	20 N/mm ² to 60 N/mm ²
		Specific Gravity	IS – 1727-1967 RA 2013	2.0 to 3.0
		Fineness by Sieving	IS – 1727-1967 RA 2013	1% to 20%
		Soundness by le-chatlier	IS – 1727-1967 RA 2013	0 to 15 mm
		Initial & Final Setting Time	IS – 1727-1967 RA 2013	15 min to 450 min
13.	Tiles			
	Plain & Chequered Concrete Tiles	Flatness of Surface	IS 1237-2012 Annex B RA 2017 IS 13801-2013, Annex B	0.1 mm to 1 mm
		perpendicularity	IS 1237-2012 Annex C RA 2017 IS 13801-2013, Annex C	0.1 mm to 2 mm
		Straightness	IS 1237-2012 Annex D RA 2017 IS 13801-2013 Annex D	0.1 mm to 2 mm
		Water Absorption	IS 1237-2012, Annex E RA 2017 IS 13801-2013, Annex E	2 % to 15 %
		Wet Transverse Strength	IS 1237-2012, Annex F RA 2017 IS 13801-2013, Annex F	1.0 N/mm ² to 8.0 N/mm ²
		Resistance to Wear	IS 1237-2012, Annex G RA 2017 IS 13801-2013, Annex G	0.2 mm to 4 mm

Laboratory **Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat**

Accreditation Standard **ISO/IEC 17025: 2017**

Certificate Number **TC-8053 (in lieu of T-2300, T-4248)** **Page 6 of 10**

Validity **31.10.2018 to 30.10.2020** **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
	Ceramic Tiles / Pressed Ceramic (Vitrified) Tiles	Water Absorption	IS-13630 - 2006 (Part 2) RA 2017	0 to 12 %
		Flexural Strength	IS-13630 – 2006 (Part 6) RA 2017	1 N/mm ² to 75 N/mm ²
		Breaking Strength	IS-13630 – 2006 (Part 6) RA 2017	200 N to 2000 N
		Dimension	IS-13630 – 1993 (Part 1) RA 2017	L: 30 mm to 600 mm W: 20 mm to 600 mm T: 6 mm to 12 mm
		Straightness	IS-13630 – 1993 (Part 1) RA 2017	0.1 mm to 1 mm
		Rectangularity	IS-13630 – 1993 (Part 1) RA 2017	0.1 mm to 2 mm
		Flatness	IS-13630 – 1993 (Part 1) RA 2017	0.1 mm to 2 mm
II.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous material, alloys and products			
	Reinforcement & Structural Steel	Ultimate Tensile strength	I S 1608 - 2005 RA 2017	50 N/mm ² to 700 N/mm ²
		Yield Stress / 0.2% Proof Stress	I S 1608 - 2005 RA 2017	50 N/mm ² to 650 N/mm ²
		Percentage Elongation	I S 1608 - 2005 RA 2017	5 %to 40 %
		Bend Test (Up to 32 mm dia)	IS -1599 - 1985 RA 2017	Qualitative
		Rebend Test (Up to 32 mm dia)	IS 1786 – 2008-Amd.-1-2012 RA 2013	Qualitative
III.	SOIL AND ROCK			
1.	Soil	Water content	IS – 2720 (Part 2) – 1973 RA 2015	1% to 50 %

Laboratory

Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat

Accreditation Standard

ISO/IEC 17025: 2017

Certificate Number

TC-8053 (in lieu of T-2300, T-4248)

Page 7 of 10

Validity

31.10.2018 to 30.10.2020

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
		Specific Gravity – Fine Grained Soil	IS – 2720 (Part 3/Sec I) – 1980 RA 2016	2.4 to 2.9
		Specific Gravity – Coarse Grained Soil	IS – 2720 (Part 3/Sec II) – 1980 RA 2016	2.5 to 3.1
		Grain size Analysis – 1) Dry 2) Wet 3) Hydrometer	IS – 2720 (Part 4) – 1985 RA 2015, Clause 3 & 4 & Clause 5.2	10 mm to 0.001 mm
		Liquid Limit	IS – 2720 (Part 5) – 1985 RA 2015, Cl. 6	20% to 350 %
		Plastic Limit	IS – 2720 (Part 5) – 1985 RA 2015	15% to 80 %
		Shrinkage limit	IS – 2720 (Part 6) – 1972 RA 2016	10% to 35 %
		Light Compaction	IS – 2720 (Part 7) – 1980 RA 2016	MDD 1.40g/cc to 2.00g/cc : OMC 10% to 35 %
		Heavy Compaction	IS – 2720 (Part 8) – 1983 RA 2015	MDD: 1.50g/cc to 2.50g/cc : OMC 05% to 30 %
		Unconfined Compression Strength	IS – 2720 (Part 10) – 1980 RA 2015	0.2 kg/cm ² to 4.0 kg/cm ²
		Triaxial (UU)	IS – 2720 (Part 11) – 1980 RA 2016	C : 0.0 to 2.0 kg/cm ² & Ø : 01 to 40
		Direct Shear test	IS – 2720 (Part 13) – 1986 RA 2016	C : 0.0 to 1.0 kg/cm ² & Ø : 01 to 45
		California Bearing Ratio	IS – 2720 (Part 16) – 1987 RA 2016	0.5 % to 100 %
		Consolidation Test	IS – 2720 (Part 15) – 1986 RA 2016	0.1 kg/cm ² to 08.0 kg/cm ²
		Free Swell Index	IS – 2720 (Part 40) – 1977 RA 2016	1% to 400 %

Laboratory **Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat**

Accreditation Standard **ISO/IEC 17025: 2017**

Certificate Number **TC-8053 (in lieu of T-2300, T-4248)**

Page 8 of 10

Validity **31.10.2018 to 30.10.2020**

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
		Swelling Pressure	IS – 2720 (Part 41) – 1977 RA 2016	0.1 kg/cm ² to 2.0 kg/cm ²
		Relative Density Test	IS – 2720 (Part 14) – 1983 RA 2015	1.1 g/cc to 2.5 g/cc
		Laboratory Permeability	IS – 2720 (Part 17) – 1986 RA 2016	10 ⁻¹ cm/sec to 10 ⁻⁸ cm/sec
2.	Stones Rock	Compressive Strength	IS 9143 - 1979 RA 2016	1 N/mm ² to 125 N/mm ²
		Water Content, Density & Porosity	IS 13030 - 1991 RA 2016	0.5% to 15%
		Point Load Index Test	IS 8764 - 1998 RA 2014	1 N/mm ² to 50 N/mm ²
		Modulus of Elasticity	IS 9221 – 1979 RA 2016	10000 N/mm ² to 70000 N/mm ²
		Slake Durability Index	IS 10050 - 1981 RA 2016	2 % to 80%
		Brazilian Test	IS 10082 – 1981 RA 2016	0.5 N/mm ² to 15 N/mm ²
3.	Building Stone	Water absorption, apparent specific gravity and porosity	IS 1124 – 1974 RA 2013	0.5 % to 15%
		Transverse Strength	IS 1121 (Part 2) - 2013	0.5 N/mm ² to 50 N/mm ²
		Compressive Strength	IS 1121 (Part 1) - 2013	1 N/mm ² to 125 N/mm ²
IV.	SOIL AND ROCK			
1.	Clays and Soils Soil (Field)	Determination of Dry Density of soil in place by Core-cutter Method	IS 2720-1975 (Part-29) – RA 2015	1.2 g/cc to 2.6 g/cc 5% to 50%
		Determination of Dry Density of soil in place by Sand Replacement Method	IS 2720-1974 (Part-28) – RA 2015	1.2 g/cc to 2.4 g/cc 5% to 50%
		Plate Load Test	IS 1888 – 1992 RA 2016	1 T/m ² to 100 T/m ²
		Cyclic Plate Load Test	IS 5249-1992 RA 2015	1 T/m ² to 100 T/m ²

Laboratory Unique Engineering Testing & Advisory Services, 216, Bridge Road
No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat

Accreditation Standard ISO/IEC 17025: 2017

Certificate Number TC-8053 (in lieu of T-2300, T-4248) **Page 9 of 10**

Validity 31.10.2018 to 30.10.2020 **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
		Pile Load Test A--Vertical Load (Compression)	IS 2911-2013 (Part-4)	1 T to 60 T
		B - Lateral Load		1 T to 25 T
		C - Pull Out Test (Uplift)		1 T to 60 T
		Field CBR test (Soak &Unsoak)	IS 2720 – (Part-31) RA 2015	Upto 50%
		Modulus of Subgrade Reaction	IS 9214-1979, RA 2016	2 kg/cm ³ to 8 kg/cm ³
		Electrical Resistivity	IS 15736-2007, RA 2012	0.0001 K Ohms to 19.99 K Ohms
		Standard Penetration Test	IS 2131 – 1981 RA 2016	1 Ns to 100 Ns
		Dynamic Cone Penetration Test	IS 4963 (Part 1) – 1976 RA 2016	1 Ns to 100 Nc

Laboratory Unique Engineering Testing & Advisory Services, 216, Bridge Road
 No. 6-F, New Estate, Udhog Nagar, Udhna, Surat, Gujarat
Accreditation Standard ISO/IEC 17025: 2017
Certificate Number TC-8053 (in lieu of T-2300, T-4248) **Page 10 of 10**
Validity 31.10.2018 to 30.10.2020 **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
<u>NON-DESTRUCTIVE TESTING</u>				
I.	BUILDING MATERIALS - REINFORCED CONCRETE STRUCTURES			
1.	Hardened Concrete	Rebound Hammer Test	IS 13311 (Part 2)-1992 RA 2013	10 RN to 100 RN
		Ultrasonic Pulse Velocity Test	IS 13311 (Part 1)-1992 RA 2013	0.1 km/sec to 6.0 km/sec
		Cover thickness	BS 1881-Part 24-1988	1 mm to 75 mm
		Half Cell Potential	ASTM C876-15	(-)750 mV to (+)500 mV
2.	Concrete Pile	Pile Integrity Testing	ASTM D5882-16	2 m to 50 m