

Laboratory **Mattest Engineering Services, A-39-40-41, City Industrial Estate,
Udhna Navsari Main Road, Udhana, Surat, Gujarat**

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

Certificate Number **TC-6202**

Page 1 of 5

Validity **05.05.2018 to 04.05.2020**

Last Amended on **08.05.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-----	----------------------------	-------------------------	---	--

MECHANICAL TESTING

1.	BUILDING MATERIAL			
1.	Cement (OPC)	Consistency	IS 4031 (Part 4)	25 % to 40 %
		Initial Setting Time	IS 4031 (Part 5)	30 Min. to 250 Min.
		Final Setting Time	IS 4031 (Part 5)	100 Min. to 600 Min.
		Compressive Strength	IS 4031 (Part 6)	10 to 80 N/mm ²
		Soundness by Le-Chatelier method	IS 4031 (Part 3)	0 to 10 mm
		Fineness by Specific Surface by Blain air permeability	IS 4031 (Part 2)	100 m ² /kg to 500 m ² /kg
2.	Hardened Concrete	Compressive Strength	IS 516	10 N/mm ² to 80 N/mm ²
		Flexural Strength	IS 516	0.5 N/mm ² to 10 N/mm ²
		Split Tensile Strength	IS 5816	1 N/mm ² to 5 N/mm ²
3.	Brick Clay/Fly-Ash/ Fly-Ash Lime	Compressive Strength	IS 3495 (Part 1)	2.5 N/mm ² to 15 N/mm ²
		Water Absorption	IS 3495 (Part 2)	10 % to 40 %
		Efflorescence	IS 3495 (Part 3)	Qualitative
		Dimension	IS 1077 IS 12894	Length: 4000 mm to 5000 mm Width: 2000 mm to 2500 mm Height: 1200 mm to 1600 mm
4.	Coarse Aggregate	Sieve Analysis	IS 2386 (Part 1)	4.75 mm to 125 mm
		Bulk Density	IS 2386 (Part 3)	1.2 kg/lit to 3 kg/lit
		Flakiness Index	IS 2386 (Part 1)	2 % to 40 %
		Elongation Index	IS 2386 (Part 1)	2 % to 40 %

Laboratory **Mattest Engineering Services, A-39-40-41, City Industrial Estate,
Udhna Navsari Main Road, Udhana, Surat, Gujarat**

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

Certificate Number **TC-6202**

Page 2 of 5

Validity **05.05.2018 to 04.05.2020**

Last Amended on 08.05.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Impact value	IS 2386 (Part 4)	1 % to 60 %
		Loss Angles Abrasion Value	IS 2386 (Part 4)	1 % to 60 %
		Crushing Value	IS 2386 (Part 4)	1 % to 60 %
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	0.1 % to 10 %
		Soundness Test	IS 2386 (Part 5)	0.1 % to 25 %
		Ten Percent Fines Value	IS 2386 (Part 4)	100 kN to 400 kN
		Alkali Aggregate Reactivity(a). Reduction of alkalinity (RC)	IS 2386 (Part 7)	10 mmoles/l to 1000 mmoles/l
		Alkali Aggregate Reactivity(b). Dissolved Silica(SC)	IS 2386 (Part 7)	2 mmoles/l to 500 mmoles/l
5.	Fine Aggregate	Sieve Analysis	IS 2386 (Part 1)	75 µm to 10 mm
		Bulk Density	IS 2386 (Part 3)	1.2 kg/lit to 3 kg/lit
		Specific Gravity	IS 2386 (Part 3)	2.5 to 3.5
		Water Absorption	IS 2386 (Part 3)	0.01 % to 10 %
6.	Concrete Paver Blocks	Compressive Strength	IS 15658	05 N/mm ² to 80 N/mm ²
		Water Absorption	IS 15658	0.5 % to 20 %
7.	Bitumen	Specific Gravity	IS 1202	0.99 to 1.102
		Ductility	IS 1208	75 cm to 100 cm
		Penetration	IS 1203	0 to 400 (1/10 th)
		Softening Point	IS 1205	40°C to 55°C
		Absolute Viscosity	IS 1206 (Part 2)	2000 Poise to 2600 Poise
		Kinematic Viscosity	IS 1206 (Part 3)	200 cSt to 500 cSt
8.	Bitumen-Mix	Binder Content	ASTM D 2172IRC SP-11-Annexure 5	1 % to 10 %

Laboratory **Mattest Engineering Services, A-39-40-41, City Industrial Estate, Udhna Navsari Main Road, Udhana, Surat, Gujarat**

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

Certificate Number **TC-6202**

Page 3 of 5

Validity **05.05.2018 to 04.05.2020**

Last Amended on 08.05.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Marshall Stability	ASTM D 6927	0.1 kN to 25 kN
		Flow Test	ASTM D 6927	1 mm to 10 mm
		Density	ASTM D 2726	2 gm/cc to 3 gm/cc
9.	Concrete Manhole Cover & Frame	Dimension	IS 12592	300 mm to 900 mm
		Load	IS 12592	25 kN to 500 kN
10.	High Strength Deformed Steel Bars & Reinforcement Bar (8 mm to 32 mm)	Mass per meter	IS 1786	0.01 kg/m to 9.5 kg/m
		Ultimate Tensile Strength	IS 1608	100 N/mm ² to 800 N/mm ²
		Yield Stress	IS 1608	100 N/mm ² to 800 N/mm ²
		Elongation	IS 1608	10 % to 40 %
		Bend Test	IS:1599	Mandrel Dia. in mm (24, 30, 32, 36, 48, 60, 64, 80, 84, 100, 112, 125, 128, 140, 150, 160, 175, 192, 224)
II.	SOIL & ROCK			
1.	Soil	Hydrometer analysis	IS 2720 (Part 4)	2 Mic to 75 Mic.
		Grain Size analysis (Wet & Dry analysis)	IS 2720 (Part 4)	75 Mic. to 10 mm
		California Bearing Ratio	IS 2720 (Part 16)	1 % to 60 %
		Light Compaction	IS 2720 (Part 7)	MDD: 1-2.1 gm/cc OMC 5-40%
		Heavy Compaction	IS 2720 (Part 8)	MDD: 1.4-2.6 gm/cc OMC 5-40%
		Direct Shear Test (DUU)	IS 2720 (Part 13)	C=0 -0.4 kg/cm ² ϕ 5-50°
		Consolidation Test	IS 2720 (Part 15)	Cc= 0.02 to 0.5
		Free Swell Index	IS 2720 (Part 10)	10 % to 300 %

Laboratory **Mattest Engineering Services, A-39-40-41, City Industrial Estate,
Udhna Navsari Main Road, Udhana, Surat, Gujarat**

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

Certificate Number **TC-6202**

Page 4 of 5

Validity **05.05.2018 to 04.05.2020**

Last Amended on 08.05.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Specific Gravity	IS 2720 (Part 3)	2.4 to 3.0
		Shrinkage Limit	IS 2720 (Part 4)	7.0 % to 25 %
		Liquid limit	IS 2720 (Part 5)	25 % to 80 %
		Plastic Limit	IS 2720 (Part 5)	5 % to 50 %
		Unconfined Compression Strength	IS 2720 (Part 10)	0.1 kg/cm ² to 5.0 kg/cm ²
		Swelling Pressure	IS 2720 (Part 41)	0.1 kg/cm ² to 2.0 kg/cm ²
		Relative Density	IS 2720 (Part 14)	1.1 g/cc to 2.5 g/cc
		Triaxial (UU) Cohesion Friction Angle	IS 2720 (Part 11)	Upto 2.0 kg/cm ² 5 ° to 40 °

**Ramprasath R
Convenor**

**N. Venkateswaran
Program Director**

Laboratory **Mattest Engineering Services, A-39-40-41, City Industrial Estate,
Udhna Navsari Main Road, Udhana, Surat, Gujarat**

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

Certificate Number **TC-6202**

Page 5 of 5

Validity **05.05.2018 to 04.05.2020**

Last Amended on 08.05.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-----	----------------------------	-------------------------	---	--

MECHANICAL TESTING

AT SITE				
I.	SOIL & ROCK			
1.	Soil Field Test	Determination of Dry Density of Soil in Place by Core-Cutter Method	IS 2720 (Part 29)	1.2 g/cc to 2.4 g/cc 6 % to 30 %
		Determination of Dry Density of Soil in Place by Sand Replacement Method	IS 2720 (Part 28)	1.2 g/cc to 2.4 g/cc 2 % to 15 %
		Field CBR test	IRC 37-2012, Read with ASTM D 6951 M	2 % to 50 %
		Benkelman Beam Deflection	IRC 81	0.1 mm to 5.0 mm

Ramprasath R
Convenor

N. Venkateswaran
Program Director