

Laboratory

Anand Testing Machine Services, "Shree Samarth Krupa", Plot No. 1507/18 A, (New No. 2416), Gat No. 83, Off Kabnur-Jawahar Nagar Road, Tiranga Colony, Lane No. 4, Kabnur, Ichalkaranji, Dist Kolhapur, Maharashtra

Accreditation Standard

ISO/IEC 17025: 2005

Certificate Number

CC-2150

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Validity

21.12.2017 to 20.12.2019

Last Amended on 03.01.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I. DIMENSION (BASIC MEASURING INSTRUMENTS, GAUGES ETC.)				
1.	Height Gauge ^s L.C. 0.01 mm	Up to 600 mm	14.1 μ m	Using Caliper Checker & Surface Plate
2.	Digital Height Gauge ^s (Electronic Scale) L.C. 0.01 mm	Up to 300 mm	13.3 μ m	Using Slip Gauges & Surface Plate
3.	Depth Gauge ^s L.C. 0.01 mm	Up to 300 mm	15.9 μ m	Using Caliper Checker, Slip Gauges & Surface Plate
4.	Calipers ^s L.C. 0.01 mm	Up to 600 mm	16.3 μ m	Using Caliper Checker
5.	External Micrometer ^s L.C. 0.001 mm	0 to 25 mm Up to 200 mm	1.3 μ m 2.6 μ m	Using Slip Gauges
6.	Plain Plug Gauge ^s	Up to 200 mm	4.0 μ m	Using Slip Gauges, Electronic Probe, Comparator Stand
7.	Dial Gauge ^s L.C. 0.001 mm	Up to 25 mm	2.5 μ m	Using Electronic Dial Calibration Tester

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8.	Bore Gauge ^s (For transmission check only) L.C. 0.001 mm	Up to 1 mm	2.5 μ m	Using Electronic Dial Calibration Tester
9.	Feeler Gauge ^s	Up to 1 mm	2.7 μ m	Using Electronic Probe, Comparator Stand
10.	Clinometer ^s	0 – 360°	0.81 min	Using Angle Slip Gauges
11.	Radius Gauges ^s	0.05 to 50 mm	18.6 μ m	Using Vision Inspection System
12.	Snap Gauge ^s	Up to 200 mm	2.5 μ m	Using Slip Gauges
13.	Bevel Protractor/Combination Set ^s L.C. : 1 minute	0 – 360°	0.74 min	Using Vision Inspection System
14.	Rockwell Diamond Cone Indenter ^s	Included Angle : 120°	16.2 min	Using Vision Inspection System as per IS 1586-2, ASTM E 18, ISO 6508-2
		Axis Angle : 90° \pm 0.5°	22.6 min	
		Radius : 0.2 mm	5.6 μ m	
15.	Vickers Indenter ^s	Angle : 136°	9.74 min	Using Vision Inspection System as per IS 1501-2, ASTM E 92, ASTM E384, ISO 6507-2
		Axis Angle : 90° \pm 0.5°	1.1 min	

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16.	Impact Test Specimen ^s	Linear : upto 120 mm	7.8 μ m	Using Vision Inspection system as per ISO 148, ASTM E 23
		Angular : 0 to 360°	4.8 min	
17.	Setting Rod / Setting Standard ^s	0 to 200 mm	4.3 μ m	Using Slip Gauges, Electronic Probe, Comparator Stand
18.	Ocular Micrometer / Glass Scale ^s L.C. 0.01 mm L.C. 0.1 mm	0 to 10 mm	18.0 μ m	Using Vision Inspection System
		0 to 200 mm	29.3 μ m	
19.	Notch Profile Template ^s	Linear : upto 225 mm Angular : 0 to 360°	49 μ m 3.0 min	Using Vision Inspection System
20.	Support Of Self Centering Tong ^s	Linear : upto 40 mm Angle : upto 45°	44 μ m 16.0 min	using vision inspection system as per ASTM E 23 – 16 b, ISO 148
21.	Extensometer [#]	Up to 5 mm – extension 5 mm to 25 mm – extension	2.3 μ m 3.0 μ m	Using Electronic Dial Calibration Tester, Digital Caliper as per IS 12872, ISO 9513, ASTM E 83
22.	Vision Inspection System [#] L.C.: Linear : 0.1 μ m Angular : 1 sec	X-Y Travel 0 to 200 mm	4.4 μ m	Using Slip Gauges
		Angular : 0 - 360°	15.0 sec	Using Angle Slip Gauges

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23.	Profile Projector [#]	X-Y Travel 0 to 200 mm Magnification 10 – 400 X Angular :0 - 360°	40 μ m 0.20 % 5.4 min	Using Glass Scale
24.	Depth measuring device of Rockwell Hardness tester [*]	Up to 0.2 mm	3.1 μ m	Using Electronic Probe S 1586-2, ASTM E 18, ISO 6508-2
25.	Indentation measuring device of Brinell Hardness tester [*]	Up to 7 mm	14.8 μ m	Using Slip Gauges as per IS 1500-2, ASTM E 10, ISO 6506-2
26.	Indentation measuring device of Vickers Hardness tester [*]	Up to 1.2 mm	18.0 μ m	Using Ocular Micrometer IS 1501 – 2, ASTM E92, ASTM E 384, ISO 6507-2
27.	Displacement measuring systems of material testing machines [*]	0 to 300 mm	66.0 μ m	Using Electronic Linear Scale as per ASTM E 2309 – 16

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II UTM, IMPACT, CREEP TESTING MACHINES				
1.	Force Universal / Compression Testing Machine*	4 N to 1000 kN compression	0.42 %	Using Class 1 Range Of Force Proving Instruments As per IS 1828 – 1, ISO 7500 – 1
		4 N to 50 kN tension	0.19 %	
2.	Force Universal / Compression Testing Machine*	20 N to 2000 kN compression	0.44 %	Using Class A Range Of Force Proving Instruments as per ASTM E 4
		20 N to 50 kN tension	0.25 %	
3.	Force Creep Testing Machine*	4 N to 50 kN tension	0.40 %	Using Class 1 Range Of Force Proving Instruments As per IS 1828 – 2 ISO 7500 – 2
		20 N to 50 kN tension	0.40 %	Using class A range of force proving instruments As per ASTM E 4
4.	Impact Testing Machine* (Izod & Charpy)	0 to 750 J	0.45 %	EN 10045, ASTM E 23 : 16 b, ISO 148-2 , IS 3766, BS 131 – Part 4 : 1972, IS 15420 (Clause No. 8.1-Annex A) – Direct Verification Using traceable clinometer, measuring tape, load cell and other equipment.

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5.	Impact Testing Machine * (Izod & Charpy)	< 40 J 40 to 750 J	0.3 J 3.0 %	Using traceable clinometer, measuring tape, load cell and standard reference test pieces EN 10045, ASTM E 23 : 16 b, ISO 148-2 , IS 3766, BS 131 – Part 4 , IS 15420 (Clause No. 8.1-Annex A) – Indirect Verification
6.	Plastic Impact Testing Machine *	0 to 50 J	0.25 %	Using traceable clinometer, measuring tape, weighing scale and other equipment. ISO 13802 , DIN 51222 , ASTM D 256 – 10, ASTM D 6110 - 10 & ASTM D 1822 – 13
7.	Verification Of Speed Of Material Testing Machines*	0.2 to 2500 mm / min	0.05 mm / min	Using electronic stop watch & linear scale ASTM E 2658 – 15,

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III. HARDNESS TESTING MACHINES				
1.	Hardness Calibration Of Rockwell Hardness Tester*	HRA, HRBW, HRC HREW HRFW HR15 N, HR 30 N HR 45N HR 15 T HR 30 T HR 45 T	0.5 HRA 0.6 HRBW 0.5 HRC 0.66 HREW 0.87 HRFW 0.63 HRN 0.7 HRT	Using calibrated standard hardness test blocks Indirect Verification as per IS 1586- 2 , ASTM E 18 – 17, ISO 6508 – 2
2.	Hardness Calibration Of Test Force Of Rockwell Hardness Tester*	29.42 N to 1471 N	0.41 %	Using force proving instruments Direct Verification as per IS 1586- 2 , ASTM E 18 – 17, ISO 6508 – 2
3.	Hardness Verification Of Machine Hysteresis (Recovery) Of Rockwell Hardness Tester*	130 HR units 100 HR units	0.2 HR units 0.2 HR units	As per IS 1586- 2, ASTM E 18 – 17, ISO 6508 – 2

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4.	Hardness Verification Of Testing Cycle – Hardness Testing Machine * (Rockwell / Brinell & Vickers)	0 to 50 sec	0.53 sec	Using electronic stop watch and load cells IS 1586- 2, ASTM E 18 – 17, ISO 6508 – 2, IS 1501-2, ASTM E 384 – 17, ASTM E 92 – 17 ISO 6507 – 2, IS 1500 – 2, ASTM E 10, ISO 6506-2
5.	Hardness Calibration Of Brinell Hardness Tester*	HBW 2.5 / 31.25 HBW 2.5 / 62.5, HBW 2.5 / 187.5 HBW 5 / 250 HBW 5 / 750 HBW 10 / 500, HBW 10 / 1000, HBW 10 / 1500, HBW 10 / 3000	4.4 % 4.3 % 4.4 % 3.0 % 2.7 % 1.7 % 1.64 % 1.6 % 1.66 %	Using calibrated standard hardness test blocks Indirect Verification as per IS 1500- 2, ASTM E 10 – 17, ISO 6506 – 2
6.	Hardness Calibration Of Test Force Of Brinell Hardness Tester*	98.07 N to 29.42 kN	0.13 %	Using force proving instruments Direct Verification as per IS 1500 – 2 , ASTM E 10 , ISO 6506-2

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7.	Hardness Calibration of Vickers / Micro Vickers Hardness Tester*	HV 0.1 HV 0.2 HV 0.3 HV 0.5 HV 1 HV 2 HV 3 HV 5 HV 10 HV 20 HV 30 HV 50	4.7 % 4.72 % 4.80 % 3.44 % 5.9 % 2.0 % 2.0 % 2.3 % 2.0 % 0.8 % 0.9 % 0.7 %	Using calibrated standard hardness test blocks Indirect Verification as per IS 1501- 2, ASTM E 384 – 17, ASTM E 92 – 17, ISO 6507 – 2
8.	Hardness Calibration of Test force of Vickers / Micro Vickers Hardness Tester*	4.90 N to 1176.8 N	0.38 %	Using force proving instruments Direct Verification as per IS 1501 – 2 , ASTM E 384 , ASTM E 92 – 17, ISO 6507-2

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

§ Only in Permanent Laboratory

* Only for Site Calibration

The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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