

**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 1 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>ELECTRO-TECHNICAL CALIBRATION</u></b>				
<b>I.</b>	<b>SOURCE</b>			
1.	DC Voltage <sup>§</sup>	1 mV to 100 mV 100 mV to 1000 V	0.50 % to 0.005 % 0.005 % to 0.07 %	Using Multiproduct Calibrator Fluke 5502E By Direct Method
	DC Voltage <sup>*</sup>	1 mV to 1000 V	1.65 % to 0.13 %	Using 5½ Digit Multifunction Calibrator By Direct Method
2.	AC Voltage <sup>§</sup>	<b>45 Hz to 100 kHz</b> 1mV to 1 V 1V to 1000 V	0.25 % to 0.03 % 0.07 %	Using Multiproduct Calibrator Fluke 5502E By Direct Method
	AC Voltage <sup>*</sup>	<b>45 Hz to 1000 Hz</b> 10mV to 1000 V	0.50 % to 0.22 %	Using 5½ Digit Multifunction Calibrator By Direct Method
3.	DC Current <sup>§</sup>	100 $\mu$ A to 100 mA 100 mA to 10A	0.08 % 0.07%	Using Multiproduct Calibrator Fluke 5502E By Direct Method
		20 A to 1000A	0.7%	Using Multiproduct Calibrator Fluke 5502E with Current Coils By Direct Method
	DC Current <sup>*</sup>	1mA to 10 A	0.2% to 0.6%	Using 5½ digit Multifunction Calibrator By Direct Method

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page

2 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
4.	AC Current <sup>§</sup>	<b>45 Hz to 10 kHz</b> 30 $\mu$ A to 1 A 1 A to 20A	0.52 % to 0.075% 0.075% to 0.25%	Using Multiproduct Calibrator Fluke 5502E By Direct Method
		<b>45 Hz to 65 Hz</b> 20A to 1000A	0.5% to 0.7%	Using Multiproduct Calibrator Fluke 5502E with Current Coils By Direct Method
	AC Current <sup>*</sup>	<b>50 Hz</b> 20 $\mu$ A to 10 A	0.30 % to 0.40%	Using 5½digit Multifunction Calibrator By Direct Method
5.	DC Resistance <sup>§</sup>	1m $\Omega$ to 1 $\Omega$ 1 $\Omega$ to 11.1111M $\Omega$ 11M $\Omega$ to 1000 M $\Omega$ 1G $\Omega$ to 100G $\Omega$	1.0 % to 0.25 % 0.25% to 0.02% 0.25% to 0.75% 2.41% to 2.0%	Using Multiproduct Calibrator Fluke 5502E & Decade Box By Direct Method
	DC Resistance <sup>*</sup>	1 $\Omega$ to 11.1111 M $\Omega$ 11 M $\Omega$ to 1000 M $\Omega$	0.25 % 0.25% to 0.75%	Using Decade Box By Direct Method
6.	Capacitance <sup>§</sup>	<b>1 kHz</b> 100pF to 1000nF 1 $\mu$ F to 10mF	2.70% to 0.45% 0.45% to 0.65%	Using Multiproduct Calibrator Fluke 5502E & Decade Box By Direct Method
7.	Frequency <sup>§</sup>	50 Hz to 100 kHz	0.07%	Using Multiproduct Calibrator Fluke 5502E & Decade Box By Direct Method
	Frequency <sup>*</sup>	45 Hz to 1000 Hz	0.7% to 0.3%	Using Multifunction Calibrator Fluke 5502E By Direct Method

Shally Sharma  
Convenor

Avijit Das  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page

3 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
8.	AC Power/ Energy <sup>§</sup> (1 $\emptyset$ &3 $\emptyset$ )	50Hz 300VAC(L-N) 0.01 to 6.0 Amp.AC 0.5PF to UPF	1.5% to 2.5%	Using 3 Phase Source Energy / Power Base & Load Manager (Conzerv) By Direct Method
9.	Temperature Simulation <sup>§</sup> (Indicator/ Controller/Recorder)			
	RTD	(-) 200 °C to 600 °C	0.10 °C	Using Multiproduct Calibrator Fluke 5502E
	Thermocouple J Type	0 °C to 760 °C	0.15 °C	
	K Type	0 °C to 1350 °C	0.15 °C	
	R & S Type	400 °C to 1750 °C	0.20 °C	
	T Type	(-) 250 °C to 400 °C	0.15 °C	
	N Type	(-) 200 °C to 1200 °C	0.15 °C	
	Temperature Simulation* (Indicator /Controller/Recorder)			
	PT-100	(-) 200 °C to 600 °C	0.84 °C	Using Masibus 3001 Universal Calibrator
	Thermocouple J Type	0 °C to 760 °C	1.065 °C	
	K Type	0 °C to 1350 °C	1.108 °C	
	R & S Type	400 °C to 1750 °C	1.065 °C	
II.	<b>MEASURE</b>			
1.	DC Voltage <sup>§</sup>	10 mV to 1 V 1 V to 1000 V	0.06 % 0.60 %	Using 6½ Digital Multimeter Fluke 8845A By Direct Method
	DC High Voltage <sup>§</sup>	1 kV to 10 kV	0.2 kV	Using High Voltage Probe with DMM By Direct Method

Shally Sharma  
Convenor

Avijit Das  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page

4 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
	DC High Voltage*	1 kV to 20 kV 20 kV to 100 kV	1.16% 3.30%	Using High Voltage Divider with kV Meter By Direct Method
2.	AC Voltage <sup>§</sup>	<b>50 Hz</b> 100 mV to 1 V 1 V to 750 V	0.12 % 0.12 %	Using 6½ Digital Multimeter Fluke 8845A By Direct Method
	AC High Voltage <sup>§</sup>	<b>50 Hz</b> 1 kV to 10 kV	0.20 kV	Using High Voltage Probe with DMM By Direct Method
	AC High Voltage*	<b>50 Hz</b> 1 kV to 20 kV 20 kV to 100 kV	1.16% 3.30%	Using High Voltage Divider with kV Meter By Direct Method
3.	DC Current <sup>§</sup>	10mA to 1A 1A to 10A	0.10% 0.10%	Using 6½ Digital Multimeter Fluke 8845A by Direct Method
4.	AC Current <sup>§</sup>	<b>50 Hz</b> 1mA to 1A 1A to 10A	0.12% 0.27%	Using 6½ Digital Multimeter Fluke 8845A By Direct Method
5.	Resistance <sup>§</sup>	10 $\Omega$ to 100 k $\Omega$ 100k $\Omega$ to 100 M $\Omega$	1.0 % to 0.015 % 0.87%	Using 6½ Digital Multimeter Fluke 8845A By Direct Method
6.	Frequency <sup>§</sup>	50Hz to 1MHz	0.15% to 0.003%	Using 6½ Digital Multimeter Fluke 8845A By Direct Method
7.	Timer /Stop Watch <sup>#</sup>	1sec to 60sec 1min to 24hrs.	1.01 sec 1.01 sec	Using Digital Timer/Stop Watch By Direct Method

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 5 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
8.	AC Power/ Energy (1 $\emptyset$ &3 $\emptyset$ )*	<b>50Hz</b> 240/415 VAC 0.01to120Amp.AC 0.5 PF to UPF	0.5% to 1.4%	Using Accucheck with CT along with Power Source By Direct Method
9.	Power Factor Lag-UPF-Lead*	<b>50Hz</b> UPF to 0.5PF 0.01 to 5Amp. AC 240VAC	0.020PF	Using Accucheck with CT along with Power Source By Direct Method

---

**Shally Sharma**  
Convenor

---

**Avijit Das**  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page

6 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>MECHANICAL CALIBRATION</u></b>				
<b>1.</b>	<b>DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)</b>			
1.	Caliper <sup>§</sup> (Vernier, Dial, Electronics) L.C.: 0.01 mm	Up to 1000 mm	16.0 $\mu$ m	Using Caliper Checker/ Length Bars/ Slip Gauges
2.	Height Gauge <sup>§</sup> (Vernier, Dial, Electronics) L.C.: 0.01 mm	Up to 1000 mm	20.5 $\mu$ m	Using Caliper Checker/ Length Bars/ Slip Gauges
3.	Depth Gauge <sup>§</sup> (Vernier, Dial, Electronics) L.C.: 0.01 mm	Up to 450 mm	17.4 $\mu$ m	Using Slip Gauge Set
4.	External Micrometer <sup>§</sup> L.C.: 0.01 mm	0 to 150 mm >150 mm to 300 mm >300 mm to 600 mm >600 mm to 1000 mm	5.0 $\mu$ m 7.0 $\mu$ m 12.0 $\mu$ m 19.0 $\mu$ m	Using Slip Gauge Set & Length Bars
	L.C.: 0.001 mm	0 to 600 mm	11.0 $\mu$ m	
5.	Inside Dial Caliper Two Point <sup>§</sup> L.C.: 0.001 mm	10 mm to 150 mm	7.0 $\mu$ m	Using Caliper Checker/ Length Bars
6.	Depth Micrometer <sup>§</sup> L.C.: 0.01 mm	Up to 300 mm	12.0 $\mu$ m	Using Caliper Checker and Holding Fixture

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

**Laboratory**

**Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat**

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

**Certificate Number**

**CC-2478**

**Page**

**7 of 17**

**Validity**

**06.12.2017 to 05.12.2019**

**Last Amended on 20.02.2018**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
7.	Dial Gauge / Indicator <sup>s</sup> (Plunger) L.C.: 0.001mm	Up to 50 mm	5.90 $\mu$ m	Using Dial Calibration Tester and Universal Length Measuring Machine
8.	Lever Type Dial Gauge <sup>s</sup>	0 to 2 mm	4.6 $\mu$ m	Using ULM
9.	Dial Calibration Tester <sup>s</sup> L.C.: 0.001mm	Up to 25 mm	1.2 $\mu$ m	Using Dial Calibration Tester & Slip gauge set & Electronic probe with DRO
10.	Bore Gauge <sup>s</sup> (For transmission accuracy check only)	Up to 1 mm	3.6 $\mu$ m	Using Dial Caliper Tester and Universal Length Measuring Machine
11.	Dial Thickness Gauge <sup>s</sup> L.C.: 0.001mm L.C.: 0.01mm	Up to 1 mm Up to 10 mm	1.2 $\mu$ m 33.2 $\mu$ m	Using Slip Gauge Set
12.	Pistol Caliper Gauge <sup>s</sup> L.C.: 0.01 mm	Up to 150 mm	58.0 $\mu$ m	Using Slip Gauge Set
13.	Measuring Scale <sup>s</sup> L.C.: 0.5 mm <sup>Φ</sup>	Up to 1000 mm	120 $\sqrt{L}$ $\mu$ m (L in m)	Using Scale and Tap Calibrator
14.	Measuring Tape/Pie Tape <sup>s</sup> L.C.: 1 mm	Up to 50 m	142 $\sqrt{L}$ $\mu$ m (L in m)	Using Scale and Tap Calibrator
15.	Coating Thickness Meter <sup>s</sup>	0 to 2 mm	2.4 $\mu$ m	Using Master Foils

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

**Laboratory**

**Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat**

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

**Certificate Number**

**CC-2478**

**Page 8 of 17**

**Validity**

**06.12.2017 to 05.12.2019**

**Last Amended on 20.02.2018**

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
16.	Electronic Probe with DRO <sup>§</sup> L.C.: 0.0001 mm L.C.: 0.001 mm	Up to 0.2 mm Up to 2 mm	1.1 $\mu$ m 2.10 $\mu$ m	Using Slip Gauge Set
17.	Feeler Gauge/ Shims (foils) of Coating Thickness Gauge <sup>§</sup>	Up to 2mm	2.0 $\mu$ m	Using Digimetric Micrometer
18.	Ultrasonic Thickness Gauge <sup>§</sup> L.C.: 0.10 mm	5 mm to 100 mm	64.0 $\mu$ m	Using Slip Gauge Set
19.	Micrometer Setting Standard / Length Bar/ Long Gauge Block <sup>§</sup>	25 mm to 600 mm >600 mm to 1000 mm	8.7 $\mu$ m 10.0 $\mu$ m	Using Slip Gauge Set & Electronic Probe with DRO
20.	Dial Snap Gauge Plane Snap Gauge <sup>§</sup>	Up to 200 mm >200 mm to 600 mm	3.4 $\mu$ m 6.0 $\mu$ m	Using Slip gauge set and Length Bar
21.	Plane Plug Gauge <sup>§</sup>	0 to 100 mm	3.0 $\mu$ m	Using Universal Length Measuring Machine
22.	Thread Plug Gauge <sup>§</sup> Major & Effective Diameter Only	Up to 100 mm	4.0 $\mu$ m	Using Universal Length Measuring Machine with Thread Measuring Wire
23.	Plain/Master Setting Ring Gauge <sup>§</sup>	3 mm to 100 mm	2.0 $\mu$ m	Using Universal Length Measuring Machine with Thread Measuring Wire
24.	Thread Ring Gauge <sup>§</sup> Minor & Effective Diameter Only	Up to M100 mm 2.5 mm pitch only	2.40 $\mu$ m	Using Universal Length Measuring Machine with Setting Ring Gauge

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director



Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page 9 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
25.	Bevel Protector <sup>§</sup> Resolution 1 minute	0° to 90° to 0°	4.5 min of arc	Using Angle Gauge
26.	Combination Set/ Degree Protector <sup>§</sup> Resolution 1°	0° to 90° to 0°	45 min of arc	Using Angle Gauge
27.	Taper Scale <sup>§</sup>	Up to 60 mm	58.0 $\mu$ m	Using Vision Measuring Machine
28.	Test Sieve <sup>§</sup>	30 $\mu$ m to 50 mm >50 mm to 125 mm	6.6 $\mu$ m 97.8 $\mu$ m	Using Vision Measuring Machine & Digital Caliper
29.	Radius Gauge <sup>§</sup>	0.6 mm to 25 mm	35.7 $\mu$ m	Using Vision Measuring Machine with Software
30.	Spirit Level/ Frame Level/ Electronic Level <sup>§</sup> L.C. 0.01 mm/m	Base Length Up to 300 mm	0.18 $\mu$ m/m	Using Electronic Level Surface Profile with Tilting Setup
31.	Precision Ball <sup>§</sup>	Up to 25 mm	6.6 $\mu$ m	Using Vision Measuring Machine with software
32.	Surface Plate* Granite/Cast Iron	Up to 1000 mm X 2000 mm	$3.8 \sqrt{\frac{L+W}{125}}$ $\mu$ m L & W in m	Using Electronic Level
33.	Straight Edge* Width >25mm	Up to 5000 X	$3.9 \sqrt{\frac{L+W}{125}}$ $\mu$ m L & W in m	Using Electronic Level

Shally Sharma  
Convenor

Avijit Das  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page 10 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
34.	Internal Micrometer Two Points <sup>§</sup> L.C.0.01 mm (with inter changeable setting rod)	50mm to 2100mm In steps of 300mm	0.65 $\sqrt{L}$ $\mu$ m where L in mm	Using Slip Gauge Set accessories, Caliper Checker & Electronic Probe with DRO.
35.	Measuring Pins <sup>§</sup>	0.17 mm to 20 mm	1 $\mu$ m	Using Universal Length Measuring Machine
36.	Thread Measuring Wire <sup>§</sup>	0.17 mm to 7.35 mm	1 $\mu$ m	Using Universal Length Measuring Machine
II.	<b>DIMENSION (PRECISION INSTRUMENTS)</b>			
1.	Profile Projector, Optical Microscope, Tool Maker Microscope, Vision Measuring machine*. Linear L.C.: 0.0001mm Angular L.C.: 1min <sup>Φ</sup> Magnification	0 to 200 mm 0 to 360° Up to 100X	12.0 $\mu$ m 8.6 sec of arc 2.6 %	Using Glass Scale, Angle Gauge, Angular Gratitude, Linier Glass Scale & Digital Calibrator
III.	<b>PRESSURE INDICATING DEVICES</b>			
1.	Pressure Gauge (Digital/Dial)/ Transmitters/ Magnehelic / Manometer / Barometer <sup>§</sup>	0 to 7 bar  0 to 70 bar 0 to 700 bar	0.06 bar  0.14 bar 0.22 bar	Using Digital Pressure Gauge & Pneumatic Pressure Pump By Comparison Method as per DKD R-6-1  Using Digital Pressure Gauge & Hydraulic Pressure Pump By Comparison Method as per DKD R-6-1

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 11 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
		0 to 19.51 mbar 0.3 to 2 bar (abs)	0.035 mbar 0.0052 bar	Using Digital Pressure Gauge & Pneumatic Pressure & Vacuum Pump By comparison method (DKD-R6-01)
2.	Negative Pressure Gauge (Digital/Dial/ High Vacuum Transmitters/ McLeod Gauge / Pirani Gauge <sup>\$</sup>	(-) 0.98 bar to 0 bar (-)0.0094 bar to 1.01 bar	0.006 bar 0.0002 bar	Using Pirani Gauge with Vacuum Pump & Digital Vacuum Gauge By Comparison Method (DKD-R6-01)
3.	Pressure Gauge* (Digital/Dial)	0 to 70 bar 0 to 700 bar	0.20 bar 0.60 bar	Using Digital Pressure Gauge & Hydraulic Pressure Pump By Comparison Method (DKD-R6-01)
<b>IV.</b>	<b>ACOUSTIC</b>			
1.	Sound Level Meter <sup>\$</sup>	<b>1 kHz</b> 40 dB to 120 dB	1.04 dB	Using Sound Level Meter & Reference Sound Level Source By Comparison
<b>V.</b>	<b>ACCELERATION &amp; SPEED</b>			
1.	Tachometer/Speed Indicator/ RPM Meter/ Centrifuge <sup>#</sup>	20 RPM to 30000 RPM	4.7 RPM to 50 RPM	Using Digital Tachometer, RPM Generator Source By Comparison Method

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page

12 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
2.	Vibration Amplitude <sup>§</sup> Acceleration Velocity	0.5 m/s <sup>2</sup> to 30 m/s <sup>2</sup> (pk) 0.5 mm/s to 30mm/s(pk)	4.50 % 4.72%	Using Vibration Meter with Shaker
VI.	<b>DUROMETER</b>			
1.	Force Verification <sup>§</sup> Shore A & Shore D	0 to 100 Shore A 0 to 100 Shore D	1.75 Shore A 1.74 Shore D	Using Durometer Calibrator As per ASTM D2240
VII.	<b>HARDNESS TESTING MACHINES</b>			
1.	Verification of Rockwell Hardness Tester*	HRA HRB HRC HRN	1.4 HRA 1.4 HRBW 1.6HRC 1.6 HR 15N	Using Standard Hardness Block as per IS1586 Indirect Verification
VIII.	<b>UTM, TENSION CREEP AND TORSION TESTING MACHINE</b>			
1.	Verification of Uniaxial Testing Machine* (Universal, Tensile - Compression Testing Machine)	Tension >50 N to 10 kN  Compression 20 kN to 1000 kN	0.40%  0.90%	Using S-Type/ Uniaxial Load Cell with Indicator as per IS 1828-2
IX.	<b>TORQUE GENERATING DEVICES</b>			
1.	Torque Wrench <sup>§</sup> Type-I Class A, B, C, D, E Type-II Class A, B, C, D, E, F, G.	3 Nm to 1000 Nm	1.23 %	Using Digital Torque Calibrator Based on ISO 6789

Shally Sharma  
Convenor

Avijit Das  
Program Director

Laboratory

Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number

CC-2478

Page 13 of 17

Validity

06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
X.	<b>WEIGHTS</b>			
1.	Weights of E2-Class and Coarser <sup>s</sup>	1mg 2mg 5mg 10mg 20mg 50mg 100mg 200mg 500mg 1g 2g 5g 10g 20g 50g 100g 200g  500g 1kg 2kg 5kg 10kg 20kg	0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.004 mg 0.005 mg 0.007 mg 0.008 mg 0.01 mg 0.01 mg 0.02 mg 0.02 mg 0.03 mg 0.06 mg 0.06 mg 0.11 mg  0.009 g 0.009 g 0.009 g 0.009 g 0.017 g 0.088 g	Using E1 Class Standard Mass & Digital Balance of Readability 1mg to 22g d=0.001mg 1mg to 105g d=0.01mg 105g to 200g d=0.1mg Based on ABBA Method As per OIML R-111-1  Using E2 Class Standard Mass & Digital Balance of Readability Up to 10kg d=0.01g Up to 30kg d=0.1g Based on ABBA Method As per OIML R-111-1

Shally Sharma  
Convenor

Avijit Das  
Program Director

**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 14 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b>XI.</b>	<b>WEIGHING SCALE AND BALANCE</b>			
<b>1.</b>	Weighing Balance#  d=0.001mg & coarser d= 0.01mg & coarser d= 0.1mg & coarser  d= 10mg & coarser d= 100 mg & coarser	Up to 22g >22g to 200g >200g to 500g  >200g to 10kg >10kg to 30kg	0.03mg 0.50mg 0.180mg  92mg 280mg	Using E1 Class Standard Weights Based on OIMLR-76-1  Using E2 Class Standard Weights Based on OIMLR-76-1
<b>2.</b>	Weighing Balance* d= 100 mg & coarser	>30kg to 150 kg	340g	Using F1 Class Standard Weights Based on OIMLR-76-1
<b>XII.</b>	<b>VOLUME</b>			
<b>1.</b>	Single/Multi Channel Piston Micro Pipettes <sup>s</sup>	10 $\mu$ l to 1000 $\mu$ l	0.1 $\mu$ l	Using E1 Class standard mass & Electronic balance (d=0.001mg) Based as per ISO 8655 Part 6
<b>2.</b>	Measuring or Volumetric Glass Burette, Pipette, Beaker, Density Bottle, Cylinder, Flask <sup>s</sup>	>1ml to 20ml >20ml to 100ml >100ml to 1000ml >1000 to 2000ml	0.2 $\mu$ l 0.01ml 9.5ml 9.5ml	Using E1, E2 & F1 Class Standard Weights & Digital Balance of readability 1mg to 22g d=0.001mg Up to 105g d=0.01mg Up to 200g d=0.1mg Up to 10kg d=0.01g By Gravimetric and ISO 4787 method

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director

Laboratory Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2478

Page 15 of 17

Validity 06.12.2017 to 05.12.2019

Last Amended on 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
XIII.	DENSITY AND VISCOSITY			
1.	Hydrometer <sup>s</sup>	0.600 g/ml to 2.000 g/ml @ 20°C	0.0013 g/ml	Using Standard Hydrometer and Liquid of known densities by Comparison method as per ISO 3104 Part 2

---

Shally Sharma  
Convenor

---

Avijit Das  
Program Director

**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 16 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>THERMAL CALIBRATION</u></b>				
<b>1.</b>	<b>TEMPERATURE</b>			
1.	Temperature Gauge, Glass Thermometer, Dial Thermometer <sup>§</sup>	(-) 80°C to 40°C 40°C to 200°C	0.69°C 0.52°C	Using 6½ Digit Multimeter, RTD, Liquid Bath By Comparison Method
2.	Temperature Indicator/ Controller/ Recorder/Data logger with RTD or Thermocouples, RTD / Thermocouples, Temperature Transmitter <sup>§</sup>	(-) 80°C to 40°C 40°C to 400°C  400°C to 1000°C	0.4°C 0.5°C  2.3°C	Using 6½ Digit Multimeter, RTD, Wet/ Dry Bath By Comparison Method  Using 6½ Digit Multimeter, R-Type Thermocouple, Fluid Less Temp. Bath, Muffle Furnace By Comparison Method
3.	Infrared Thermometer, Pyrometer, Laser Gun <sup>§</sup>	35°C to 400°C 400°C to 1000°C	1.63°C 3.69°C	Using Standard Pyrometer Laser Gun And Black Body Source By Comparison Method
4.	Temperature / Humidity Meter with Sensor, Temperature/ Humidity Indicator with Inbuilt Sensor, Data Logger, Thermo Hygrometer <sup>§</sup>	5°C to 50°C @≈ 50%RH  10% to 90%RH @≈25°C	0.83°C  1.38%RH	Using Temperature / Humidity Generator along with Temperature and Humidity Indicator By Comparison Method

**Shally Sharma**  
Convenor

**Avijit Das**  
Program Director



**Laboratory** Hi-Tech Calibration, Gala No. 060, Royal Industrial Hub,  
At & Post: Valvada, Taluka: Umbergaon, Dist.: Valsad, Gujarat

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

**Certificate Number** CC-2478

**Page** 17 of 17

**Validity** 06.12.2017 to 05.12.2019

**Last Amended on** 20.02.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
5.	Temperature Indicator/ Controller/ Recorder/Data Logger with RTD or Thermocouples, Only RTD/ Thermocouples, Temperature Transmitter*	30°C to 400°C 400°C to 1000°C	0.5°C 3.51°C	Using RTD with Indicator, Dry Block Bath By Comparison Method  Using R-Type Sensor with Indicator, Dry Block Bath by Comparison Method
6.	Indicator of Bath, Oven, Furnace, Chamber, Freezer, Incubator*	40°C to 200°C 200°C to 1000°C	1.65°C 3.46°C	Using RTD/R-Type Thermocouple with Temperature indicator by Single Position Calibration
7.	Bath, Oven, Furnace, Chamber, Freezer, Incubator, Room*	(-) 20°C to 50°C (-) 20°C to 300°C 300°C to 1000°C	0.95°C 3.0°C 5.6°C	Using RTD/ Thermocouple with Multi Channel or Wireless Data Logger By Multi Position Calibration
8..	Humidity Chamber, Environment Chamber*	20% to 90% RH @ $\approx$ 25°C	2.1% RH	Using Wireless Data Loggers By Multi Position Calibration

\* 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.

Ⓟ Laboratory can also calibrate instruments/devices of coarser resolution / least count within the accredited range using same reference standard/ master equipment under the scope of accreditation.

Shally Sharma  
Convenor

Avijit Das  
Program Director