Laboratory	**Alfatek Services, Sapathagiri, Tripadapuram Hill, Kulathoor P.O. Trivandrum, Kerala**		
Accreditation Standard	**ISO/IEC 17025:2005**		
Discipline	**Mechanical Calibration**	**Issue Date**	**25.10.2016**
Certificate Number	**C-0361**	**Valid Until**	**24.10.2018**
Last Amended on	**-**	**Page**	**1 of 4**

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
I.	**WEIGHING SCALE AND BALANCE**			
1.	**MASS CALIBRATION OF ELECTRONIC BALANCE OF DENSIMETER & DIGITAL WEIGHING MACHINE♣ (Resolution= 0.0001 g)**	0 to 200 g	0.5 mg	Using E2 class standard weights (1 mg to 200 g) as per OIML - R 76
II.	**DIMENSION (Basic Measuring Instrument, Gauge ETC.)**			
1.	**CALIBRATION OF RAPID PLASTIMETER FOR TIME INDICATOR#**	15 s	0.74 s	Using Digital Stop watch as per ASTM D 3194-04
2.	**PRI AGEING CHAMBER AGEING TIME#**	30 min	0.74 s	Using Digital Stop watch as per ASTM D 3194-04
3.	**CALIBRATION OF RAPID PLASTIMETER LVDT# (Length)**	0.25 mm to 1 mm	1.9 µm	Using Gauge blocks 'O ' grade as per ASTM D 3194-04

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
III.	**TORQUE GENERATING DEVICES**			
1.	**TORQUE CALIBRATION OF MOONEY VISCOMETER BY KNOWN TORQUE♣**	100 Mooney Units (8.3 Nm)	0.084 Mooney units	Using certified weights, Dimensional Instruments as per ASTM D1646 clause 9
2.	**CALIBRATION OF OSCILLATING DISC RHEOMETER BY KNOWN TORQUE♣**	Specific Torques of 15.29 dN-m (13.53 lbs-in) @ **1°** arc 45.62dN-m (40.37 lbs-in) @ **3°** arc using Torque Std Sl.No. 12S593R Specific Torques of 20.75 dN-m(18.37 lbs-in) @ **1°** arc 62.02 dN-m (54.88 lbs-in) @ **3°** arc using Torque Std. Sl.No. 140601TQ	0.24 dNm	Using Certified ODR Torque Standard as per ASTM D2084-clause 10
3.	**CALIBRATION OF MOVING DIE RHEOMETER BY KNOWN TORQUE♣**	Specific torque of 23.84dN-m (21.10lbs-in) @ **0.5°** arc of oscillation, 47.66 dN-m (42.18lbs-in)@ **1°** arc of oscillation using Torque Std. Sl.No. EKT 1284R Specific torque of 20.89 dN-m (18.49 lbs-in) @ **0.5°** arc of oscillation, 41.72 dN-m (36.92 lbs-in) @ **1°** arc of oscillation using TS Sl.No. 130906	0.24 dNm	Using Certified MDR Torque Standard as per ASTM D5289-07a clause - 6.5

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
IV.	**HARDNESS TESTING MACHINES**			
1.	**CALIBRATION OF SHORE-A DUROMETER FOR SPRING FORCE**[$]	0 to 100 Shore A	0.93 Shore A	Using Durocalibrator as per ASTM D 2240-05 / ISO 18898-2006
	CALIBRATION OF SHORE-A DUROMETER FOR INDENTOR EXTENSION[#]	0 to 100 ShoreA	0.78 Shore A	Using Slip Gauges as per ASTM D 2240-05 / ISO 18898-2006
2.	**CALIBRATION OF IRHD MICRO HARDNESS TESTER (Method-M) INCREMENTAL INDENTATION DEPTH**[♣]	30 IRHD to 100 IRHD	0.18 IRHD	Using Dimensional Instruments based on ISO 18898/ISO 48
3.	**CALIBRATION OF IRHD MACRO HARDNESS TESTER (Method-N) INCREMENTAL INDENTATION DEPTH**[♣]	30 IRHD to 100 IRHD	0.32 IRHD	Using Dimensional Instruments based on ISO 18898/ISO 48

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
V. UTM, TENSION CREEP AND TORSION TESTING MACHINE			
1. CALIBRATION OF FORCE OF UTM IN COMPRESSION MODE$^{\clubsuit}$	2.5 kN to 100 kN	0.28 %	Using Certified Load cell with Indicator as per ISO 7500/ IS 1828-2005 (Part 1)
2. CALIBRATION OF FORCE OF UTM IN TENSION MODE$^{\clubsuit}$	250 N to 9000 N	0.28 %	Using Certified Load cell with Indicator as per ISO 7500/ IS 1828-2005 (Part 1)

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**
$ Only in Permanent Laboratory
$\clubsuit$ 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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