National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : M.M. ENGINEERS, A1/1, JAI BHAWANI MARG,MULUND COLONY,MULUND WEST MUMBAI, MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

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Validity 23/09/2024 to 22/09/2026 **Last Amended on** 04/10/2024

S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Brinell Microscope - Linear (L.C.: 0.01 mm)	Using Glass Scale by Comparison Method as per IS 1500 : Part 2 : 2021, ISO 6506-2:2017, ASTM E10-23	0 to 7 mm	7.7 µm
2	MECHANICAL-HARDNESS TESTING MACHINES	Leeb Hardness Tester	Using Standard Hardness Test Blocks by Indirect Method as per ASTM A956-22	D Scale	9.7 HLD

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Site Facility					
1	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Extensometer	Using Extensometer Calibrator by Comparison Method as per IS 12872 : 2021, ISO 9513:2012 & ASTM E 83-23	0 to 5 mm	10 µm
2	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Metallurgical Microscope - Magnification	Using Glass Scale & Eyepiece by Comparison Method as per ASTM E1951-14	1 X to 1000 X	1.1 %
3	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector - Angular (L.C.: 1 second of arc & Coarser)	Using Angular Glass Scale by Comparison Method as per JIS B 7184:2021	0 ° to 360 °	1.99 minute of arc
4	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector - Linear (L.C.: 0.001 mm & Coarser)	Using Linear Glass Scale by Comparison Method as per JIS B 7184:2021	0 to 200 mm	5.73 µm
5	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector - Magnification	Using Measuring Pins & Digital Caliper by Comparison Method as per JIS B 7184:2021	1 X to 100 X	0.2 %
6	MECHANICAL-HARDNESS TESTING MACHINES	Brinell Hardness Testing Machine	Using Load Cells by Direct Method as per IS 1500 : Part 2 : 2021, ISO 6506-2:2017 & ASTM E10-23	1838.75 N to 29.42 kN	0.5 %

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7	MECHANICAL-HARDNESS TESTING MACHINES	Brinell Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1500-2 : 2021, ISO 6506-2 : 2017, ASTM E10-23	HBW 10/3000	1.98 %
8	MECHANICAL-HARDNESS TESTING MACHINES	Brinell Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1500-2 : 2021, ISO 6506-2 : 2017, ASTM E10-23	HBW 2.5/187.5	2.5 %
9	MECHANICAL-HARDNESS TESTING MACHINES	Brinell Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1500-2 : 2021, ISO 6506-2 : 2017, ASTM E10-23	HBW 5/750	2.14 %
10	MECHANICAL-HARDNESS TESTING MACHINES	Brinell Hardness Testing Machine - Indentation Diameter (L.C.: 0.01 mm)	Using Glass Scale by Comparison Method as Per IS 1500 : Part 2 : 2021, ISO 6506-2:2017& ASTM E10-23	0 to 7 mm	0.5 %
11	MECHANICAL-HARDNESS TESTING MACHINES	Micro Vicker & Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM E92-23, ASTM-E384-22	HV 1	3.74 %

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12	MECHANICAL-HARDNESS TESTING MACHINES	Micro Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM-E384-22	HV 0.2	7.39 %
13	MECHANICAL-HARDNESS TESTING MACHINES	Micro Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM-E384-22	HV 0.3	4.62 %
14	MECHANICAL-HARDNESS TESTING MACHINES	Micro Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM-E384-22	HV 0.5	4.66 %
15	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Load Cells by Direct Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015 & ASTM E18-22	98.07 N to 1471 N	0.42 %
16	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015	HR15N	0.87 HR15N

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17	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015	HR15TW	1.04 HR15TW
18	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015	HR30N	0.91 HR30N
19	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015	HR30TW	1.1 HR30TW
20	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015, ASTM E18-22	HRA	0.73 HRA
21	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015, ASTM E18-22	HRBW	1.18 HRBW

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22	MECHANICAL-HARDNESS TESTING MACHINES	Rockwell Hardness Testing Machine	Using Standard Hardness Test blocks by Indirect Method as per IS 1586 : Part 2 : 2018, ISO 6508-2:2015, ASTM E18-22	HRC	0.57 HRC
23	MECHANICAL-HARDNESS TESTING MACHINES	Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM E92-23	HV 10	1.7 %
24	MECHANICAL-HARDNESS TESTING MACHINES	Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM E92-23	HV 30	1.74 %
25	MECHANICAL-HARDNESS TESTING MACHINES	Vicker Hardness Testing Machine	Using Standard Hardness Test Blocks by Indirect Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM E92-23	HV 5	2 %
26	MECHANICAL-HARDNESS TESTING MACHINES	Vicker Hardness Testing Machine - Indentation Diameter (L.C.: 0.001 mm)	Using Glass Scale by Comparison Method as per IS 1501-2: 2020, ISO 6507-2 : 2018, ASTM E92-23	0 to 1 mm	0.5 %

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27	MECHANICAL-IMPACT TESTING MACHINE	Impact Testing Machine (Charpy)	Using Load Cell, Clinometer and Height Master by Direct & Indirect Method for Metallic Materials as per ISO 148-2:2016 & ASTM-E23-23	0 to 300 J	0.4 %
28	MECHANICAL-IMPACT TESTING MACHINE	Impact Testing Machine (Izod)	Using Load Cell, Clinometer and Height Master by Direct & Indirect Method for Metallic Materials as per ASTM-E23-23	0 to 170 J	0.4 %
29	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Uniaxial Testing Machine - Compression Mode	Using Load Cell by Comparison Method as per IS 1828 (Part 1) : 2022, ISO 7500-1 : 2018	0.3 kN to 1000 kN	0.54 %
30	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Uniaxial Testing Machine - Compression Mode	Using Load Cell by Comparison Method as per as per ASTM E4-21	2 kN to 1000 kN	0.7 %

*** CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.**