

Laboratory	MatLabs India, Plot 3B & 4, Gat No. 2340, 4 Sai Satyam Park, Pune Nagar Road, Wagholi, Pune, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Mechanical Testing	Issue Date	07.11.2016
Certificate Number	T-3026	Valid Until	06.11.2018
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous / Non-Ferrous Metals & Welded Joints	Hardness by Micro Vickers Method	IS 1501 (Part 1): 2013, ASTM E384 : (2016)	50 HV to 2500 HV /HV(0.1, 0.3, 0.5, 1)
2.	Steels, Ferrous & Non Ferrous & Welded Joints	Effective Case Depth by Micro Hardness	IS 6416: 1988 (RA 2012)	0.01 mm to 25 mm HV (0.1, 0.3, 0.5, 1 kg)
3.	Ferrous & Non Ferrous	Coating Thickness	IS 3203: 1982 (RA 2014)	0.001 mm to 25 mm
4.	Steels	Determination of Inclusion Rating Method A (Microscopic and Image Analysis method)	ASTM E 45: 2013 IS 4163: 2004 (RA 2010)	0.0 to 4.0 for type A, B, C, D Thin and Heavy Inclusions.
		Determination of Depth of Decarburization	IS 6396: 2000 (RA 2012)	0.001 mm to 10 mm
5.	Multiphase Metals / Alloys	Determination of Volume Fraction of Phases	ASTM E 562: 2011	0.1 % to 99.99 %
6.	Ductile Iron, Nodular/SG Iron	Nodularity and Nodule Count by Image Analysis	ASTM A 247: 2016a IS 7754: 1975 (RA 2012) ASTM E 562: 2016a ASTM E 2567: 2016a	Nodule Type 5 % to 100 %, Count 5 count/mm ² to 1500 count/mm ²
7.	Steel, Cast iron, Al-Al alloys, Cu-Cu alloys	Tensile Test: Ultimate Tensile Stress, Yield Stress, Elongation, Reduction in Area	IS 1608: 2005 (RA 2011)	8 kN to 400 kN Yield Strength: 100 Mpa to 1500 Mpa %Elongation: 5 % to 80 % %Reduction in Area: 10 % to 80 %

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8.	Ferrous / Non Ferrous Plates, Rods and Torsteel	Bend Test	IS 1599: 2012 (RA 2015)	8 kN to 400 kN max, Upto 100 mm mandrel dia
9.	Ferrous and Non Ferrous Metals	Izod Imapct Test	IS 1598: 1977 (RA 2015)	10 J to 164 J max
		Charpy Impact Test V Notch Ambient temperature and Sub-zero upto -40±2°C 300 Jmax	IS 1757: 1988 (RA 2009)	10 J to 300 J max
		Charpy Impact Test U Notch	IS 1499: 1977 (RA 2015)	10 J to 300 J max
		Hardness by Brinell Method	IS 1500 (Part 1): 2013	50 HBW to 400 HBW
		Hardness by Rockwell Method	IS 1586 (Part 1): 2012	20 HRA to 88 HRA LC = 1 HRA 20 HRB to 100 HRB LC = 1 HRB 25 HRC to 65 HRC LC = 1 HRC
10.	Ferrous	Jominy Test	IS 3848: 1981 (RA 2009) ASTM A 255-10 (2014)	Hardness Values 25 HR to 65 HR
II. METALLOGRAPHY TEST				
1.	Ferrous & Non Ferrous Metals	Estimation of Grain Size by Microscopy method (using chart) Estimation of Grain Size by Image Analysis	ASTM E 112: 2013 IS 4748: 2009 ASTM E 1382 -97 (RA 2015)	0.0 to 10 ASTM number
2.	Ferrous & Non Ferrous Metals and Alloys, Steel Bars, Billets, Blooms, Forging	MacroStructure Analysis	IS 11371: 1985 (RA 2007) IS 13015: 1991 (RA 2012)	Magnification: 3.75X, 5X, 10X, 15X, 20X, 25X, 30X, 35X, 40X, 45X, 50X

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3.	Ferrous & Non Ferrous	MicroStructure Analysis	IS 7739: 1975 (RA 2010) Various Parts ASM Handbook Vol. 9	Magnification 50x, 100x, 200x, 500x, 1000x
4.	Cast Irons: White/Gray Iron, Malleable Iron, Ductile Iron, Nodular/SG Iron	Microstructure Analysis	ASTM A 247 – 16a IS 7754: 1975 (RA 2012)	Magnification 50x, 100x, 200x, 500x, 1000x
5.	Gray Iron	Flake Type and Size Analysis	ASTM A 247 – 16a IS 7754: 1975 (RA 2012)	Magnification 100X is 0 to 8 for type A, B, C, D & E
6.	Welds in Metallic Material	MacroStructure Analysis	ISO 5817: 2014 ISO 17639: 2003	Magnification: 3.75X, 5X, 10X, 15X, 20X, 25X, 30X, 35X, 40X, 45X, 50X
7.	Filter Paper	Cleanliness Study by Particle size and count Analysis	ISO 16232-7: 2007 ISO 4406: 1999 ISO 4407: 2002	Magnification 50x , 100X

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