

Laboratory	Testing Laboratory, Institute for Machine Tools Technology, A-4, Focal Point, Batala, Punjab		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Mechanical Testing	Issue Date	29.06.2015
Certificate Number	T-0377	Valid Until	28.06.2017
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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
I. MECHANICAL PROPERTIES OF MATERIALS				
1.	Ferrous & Non ferrous Metals	Breaking Load	IS 1608: 2005 (RA 2006)	500 kN (Least Count : 0.01 kN)
		Tensile test		
		Tensile strength		20 MPa to 2500 MPa
		Yield strength		20 MPa to 2000 MPa
		proof stress		20 MPa to 2000 MPa
		% Elongation		2 % to 70 %
		% Reduction in area		5 % to 80 %
		BHN hardness test	IS 1500: 2005	95 BHN to 450 BHN
		Rockwell C hardness test	IS 1586 (Part 1, 2, 3): 2012	20 HRC to 70 HRC
		Micro Vickers hardness test	IS 1501: 2002	100 HV to 700 HV 0.1 100 HV to 800 HV 0.3
2.	Metals	Bend test	IS 1599: 1985 (RA 2006)	Qualitative (Mandrel dia: 32, 40, 72, 80, 96, 120 & 150 mm)
II. METALLOGRAPHY TEST				
1.	Ferrous & Non ferrous Metals	Micro structural analysis	ASM Vol 9: 1998	Qualitative (50x to 1500x)
		Designation of micro- structure of graphite in cast iron	IS 7754: 1975 (RA 2003)	Qualitative (50x to 1500x)
2.	Metals & Alloy	Estimation of grain size by Microscopic comparison method	IS 4748: 2009	Qualitative (G S no 3 to 10 100 x / 75 x)

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	Metals & Alloy	Automatic image Analysis method	ASTM E 1382: 1991	10 µm to 200 µm
		Plating/coating thickness Measurement by microscopic Method	IS 3203: 1982 (RA 2006)	10 µm to 500 µm
3.	Steel	Determination of inclusion rating by Microscopic method	IS 4163: 2004 ASTM E 112-95	Qualitative 100 x A, B, C, D (0.5 to 3.0)
		Determination of decarburised/ carburized layer by microscopic method /image analyzer	IS 6396: 2000	10 µm to 1000 µm
		Determination of case depth by Microscopic method Hardness method	IS 6416: 1988 (RA 2003)	10 µm to 1000 µm 500 HV to 800 HV

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