

Laboratory Mineral & Metal Testing Services, Plot No. C-18/2, Hingna MIDC, Nagpur, Maharashtra
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-7245 **Page 1 of 4**
Validity 25.07.2018 to 24.07.2020 **Last Amended on** 04.05.2019

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

I.	METAL & ALLOYS			
1.	Plain Carbon, Low Alloy Steel	C	ASTME 415-2017	0.04 % to 1.3 %
		Si		0.02 % to 1.50 %
		Mn		0.3 % to 2.0 %
		P		0.005 % to 0.030 %
		S		0.005 % to 0.100 %
		Cr		0.02 % to 2.0 %
		Mo		0.01 % to 0.50 %
		Ni		0.05 % to 5.00 %
		Al		0.005 % to 1.0 %
		Cu		0.01 % to 0.300 %
		V		0.002 % to 0.050 %
		Ti		0.001 % to 0.05 %
2.	Stainless Steel	C	ASTME 1086-2014	0.01 % to 0.20 %
		Si		0.3 % to 1.80 %
		Mn		0.3 % to 2.0 %
		P		0.01 % to 0.15 %
		S		0.001 % to 0.065 %
		Cr		10.0 % to 26.0 %
		Mo		0.03 % to 5.0 %
		Ni		6.0 % to 21.0 %
		Al		0.002 % to 0.15 %
3.	Cast Iron	C	ASTM E 1999-2018	2.50 % to 3.0 %
		Si		0.10 % to 0.80 %
		Mn		0.5 % to 1.0 %
		P		0.05 % to 0.50 %
		S		0.1 % to 0.25 %
4.	Aluminium & Aluminium Alloys	Si	ASTM E1251-17a	0.4 % to 10.0 %
		Fe		0.1 % to 0.50 %
		Cu		0.03 % to 4.0 %

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		Mn		0.2 % to 1.00 %
		Mg		0.1 % to 1.00 %
		Cr		0.01 % to 0.23 %
		Ni		0.01 % to 0.20 %
		Zn		0.05 % to 2.50 %
		Ti		0.01 % to 0.15 %
		Pb		0.060 % to 0.90 %
5.	Copper & Copper Alloys	Zn	MMTS/VAL/01 Issue No.-02, Issue Dt.-06.07.2018	2.5 % to 40.0 %
		Pb		0.13 % to 8.00 %
		Sn		0.15 % to 12.0 %
		Fe		0.015 % to 0.45 %
		Ni		0.03 % to 0.30 %
		P		0.02 % to 0.100 %

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous & Non Ferrous	Tensile Strength	IS 1608-1:2018, ASTM E 8/E8M-16a ASTM A 370-18	12 kN to 600 kN Load
		Yield Strength		
		Proof Stress		
		% Elongation		1 % to 70 %
		% Reduction in Area		10 % to 80 %
2.	Weld in Ferrous	Tensile Strength, All weld tensile strength	ASME SEC IX-2017, AWS D1.1/D1.1 M-2015	12 kN to 600 kN Load
		All weld elongation		5 % to 75 %
3.	Metals & Alloys	Bend Test	IS 1599:2012 IS 1786:2008 ASTM A 370-18	Qualitative (Mandrel Diameter: 16, 20, 32, 40, 45 & 50 in mm)
4.	Weld in Metal (Ferrous)	Face Bend Test Root Bend Test Side Bend Test	ASME SEC IX-2017 AWS D1.1/D1.1 M-2015	Qualitative (Mandrel Diameter: 16, 20, 32, 40, 45 & 50 in mm)
5.	TMT Steel	Rebend Test	IS 1786:2008	Qualitative (Mandrel Diameter: 16, 20, 32, 40, 45 & 50 in mm) (Max Load: 20 Tons)
6.	Metallic Materials	Charpy V-Notch Impact Test	IS 1757 (Part 1): 2014	(-) 196 °C and (-) 80 °C to 35 °C 2 J to 240 J (KV2)
		Vickers hardness Test	IS 1501 (Part 1): 2013, ASTM E 92-17	HV (1, 5, 10, 20, 30, 50) 150 HV to 750 HV
		Rockwell hardness Test	IS 1586 (Part 1): 2018 ASTM E 18:2018a, ASTM A 370-18	20 HRA to 88 HRA 20 HRB to 100 HRB 20 HRC to 70 HRC

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				70 HR 15N to 94 HR 15N 42 HR30 N to 90 HR30 N 29 HR30TW to 82 HR30TW
		Brinell Hardness Test	IS 1500-1:2013 ASTM E 10-2017	95.5 to 653 HBW 10/3000 & HBW 5/750