

Laboratory Spark Testing Services, B/G/SEI-11-05, MIDC Bhosari, Pune, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6839 (in lieu of T-0535, T-0536)

Page 1 of 5

Validity 28.02.2018 to 27.02.2020

Last Amended on --

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.	METALS & ALLOYS			
1.	Carbon and Low Alloy Steel	C	ASTM E 415 IS 8811	0.010 % to 1.70 %
		Si		0.010 % to 2.00 %
		Mn		0.030 % to 2.00 %
		P		0.002 % to 0.10 %
		S		0.002 % to 0.40 %
		Cr		0.030 % to 3.50 %
		Mo		0.020 % to 1.50 %
		Ni		0.030 % to 4.50 %
		Al		0.005 % to 0.20 %
		Co		0.050 % to 0.50 %
		Cu		0.010 % to 0.70 %
		Nb		0.005 % to 0.050 %
		Ti		0.050 % to 0.50 %
		V		0.010 % to 1.00 %
		W		0.050 % to 0.75 %
		Pb		0.010 % to 0.30 %
		B		0.0003 % to 0.0030 %
2.	Stainless Steel	C	ASTM E 1086 IS 9879	0.010 % to 0.40 %
		Si		0.030 % to 2.00 %
		Mn		0.10 % to 2.00 %
		P		0.003 % to 0.10 %
		S		0.003 % to 0.40 %
		Cr		10.00 % to 25.00 %

Iti Saxena
Convenor

Alok Jain
Program Director

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Page 2 of 5

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		Mo		0.050 % to 5.00 %
		Ni		0.10 % to 25.00 %
		Cu		0.050 % to 5.00 %
		Ti		0.010 % to 0.50 %
3.	Cast Iron	C	IS 15338	1.80 % to 4.50 %
		Si		1.50 % to 4.00 %
		Mn		0.10 % to 2.00 %
		P		0.005 % to 0.50 %
		S		0.005 % to 0.40 %
		Cr		0.10 % to 2.00 %
		Mo		0.050 % to 0.25 %
		Ni		0.10 % to 2.00 %
		V		0.010 % to 0.30 %
		Cu		0.010 % to 0.50 %
		Al		0.010 % to 0.20 %
		Mg		0.010 % to 0.50 %
4.	Tool Steel	C	STS / CHEM / TM / 06 Issue. 1 Dated 04.08.2015	0.50 % to 2.25 %
		Si		0.050 % to 2.00 %
		Mn		0.050 % to 0.50 %
		P		0.005 % to 0.050 %
		S		0.005 % to 0.050 %
		Cr		3.00 % to 12.50 %
		Mo		0.50 % to 10.00 %
		W		1.00 % to 20.00 %
		V		1.00 % to 3.50 %
		Co		0.050 % to 10.00 %
		Ni		0.050 % to 0.50 %

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Page 3 of 5

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5.	Copper Base Alloys	Zn	BS EN : 15079	0.10 % to 45.00 %
		Pb		0.050 % to 13.00 %
		Sn		0.050 % to 13.00 %
		Al		0.050 % to 12.00 %
		Mn		0.050 % to 2.00 %
		Fe		0.050 % to 5.00 %
		Ni		0.050 % to 6.00 %
		Sb		0.050 % to 0.50 %
		As		0.010 % to 0.15 %
		P		0.050 % to 0.50 %
6.	Aluminium Base Alloys	Zn	ASTM E : 1251 IS 11035	0.050 % to 0.50 %
		Pb		0.030 % to 0.25 %
		Mn		0.050 % to 1.00 %
		Fe		0.050 % to 1.50 %
		Ni		0.010 % to 0.25 %
		Cu		0.050 % to 6.00 %
		Si		0.050 % to 16.00 %
		Mg		0.050 % to 2.00 %
		Ti		0.050 % to 0.25 %
		Cr		0.050 % to 0.50 %
		Sn		0.005 % to 0.10 %

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Certificate Number TC-6839 (in lieu of T-0535, T-0536) **Page 4 of 5**
Validity 28.02.2018 to 27.02.2020 **Last Amended on** --

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous & Non – Ferrous Materials & Products (Carbon Steel, Low Alloy Steel, Stainless Steel, Tool Steel, Cast Iron, Aluminum & Its Alloys, Copper & Its Alloys, Nickel & Its Alloys)	Brinell Hardness	IS 1500 (Part 1)	100 HBW to 500 HBW
				10/3000
				100 HBW to 500 HBW
				5/ 750
		Rockwell Hardness	IS 1586 (Part 1)	
		HRA		50 HRA to 90 HRA
		HRB		40 HRB to 100 HRB
		HRC		20 HRC to 70 HRC
		Tensile Test	IS 1608	
		Ultimate Tensile Strength		100 N/mm ² to 2000 N/mm ²
		Yield Stress		100 N/mm ² to 1500 N/mm ²
		0.2 % Proof Stress		100 N/mm ² to 1500 N/mm ²
		% Elongation		2 % to 60 %
		% Reduction in area		10 % to 80 %
		Bend Test	IS 1599	Mandrel Diameter
				(Φ 4, 6, 8,10, 12, 16, 20, 24 mm)
		Micro – Vickers Hardness Test	IS 1501 (Part 1)	(50 to 1000) HV 0.3
				(50 to 1000) HV 0.5
				(100 to 1500) HV 1

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Page 5 of 5

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2.	Ferrous Materials & Products (Carbon Steel, Low Alloy Steel)	Impact Test Charpy "V" Notch	STS / MECH / TM / 11 Issue. 1 Dated 10.01.2007 (Based on IS 1757-1988)	5 J to 300 J Ambient Temperature
		Izod Impact Test	IS 1598	5 J to 160 J Ambient Temperature
II.	METALLOGRAPHY TEST			
1.	Ferrous Materials & Products (Carbon Steel, Low Alloy Steel & Stainless Steel)	Average Grain Size by Microscopic Comparison Method	ASTM E : 112 IS 4748	ASTM No. 1 to 10 100x Magnification
		Determination of Non – Metallic Inclusions by Method " A "	ASTM E : 45 IS 4163	Type A , B , C & D Thin & Heavy; 1 to 5 / 100x Magnification
2.	Ferrous Materials & Products (Carbon Steel & Low Alloy Steel)	Total Case Depth Measurement by Microscopic Method	IS 6416	0.1 mm to 3 mm 100x Magnification
3.	Ferrous & Non – Ferrous Materials & Products (Carbon Steel, Low Alloy Steel, Stainless Steel, Tool Steel, Cast Iron, Aluminum & Its Alloys, Copper & Its Alloys, Nickel & Its Alloys)	Micro structural Analysis	ASM Handbook Vol. 9 , 9 th Printing March 2000 Metallography & Microstructures	Magnification 50x , 100x & 450x