

Laboratory Sai Industrial & Metallurgical Labs, S.No. 5-7-9/6A, Sangeet Nagar,  
Kukatpally, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6515 (in lieu of T-2019 & T-2020)

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Validity 01.11.2017 to 31.10.2019

Last Amended on 15.11.2017

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.	Low Alloy Steels	C	IS 8811:1998 (RA 2012)	0.02% to 1.10%
		Si	ASTM E 415-2017	0.10% to 1.15%
		Mn	(Spectrometric method)	0.01% to 2.00%
		P		0.006% to 0.085%
		S		0.001% to 0.25%
		Cr		0.01% to 5.00%
		Mo		0.001% to 0.95%
		Ni		0.01% to 5.00%
		Al		0.005% to 1.50%
		Cu		0.01% to 0.65%
		V		0.010% to 0.80%
2.	Cast Iron	C	ASTM E 1999-2011	1.90% to 3.80%
		Si	(Spectrometric method)	0.50% to 2.50%
		S		0.01% to 0.08%
		P		0.005% to 0.40%
		Mn		0.030% to 1.80%
3.	Aluminium Alloy	Cu	ASTM E 1251-2011	0.01% to 5.00%
		Mg	IS 7658:1975 (RA 2014)	0.01% to 3.00%
		Si	(Spectrometric method)	0.01% to 14.00%
		Mn		0.01% to 1.50%
		Zn		0.001% to 3.00%
		Pb		0.001% to 0.10%
		Sn		0.025% to 0.25%
		Cr		0.010% to 0.50%
		Fe		0.050% to 1.00%
4.	Cu Base Alloy	Ti		0.01% to 0.25%
		Sn	BS EN 15079:2015	0.001% to 12.00%
		Pb	(Spectrometric method)	0.1% to 10.0%
		Zn		30.0% to 45.0%

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		Ni		0.001% to 5.0%
		Fe		0.001% to 5.0%
		Si		0.001% to 0.1%
		Mn		0.001% to 0.5%
		Al		0.01% to 11.0%
5.	Austenitic Stainless Steel	C	IS 9879:1998 (RA 2015)	0.008% to 0.150%
		Si	ASTM E 1086-14	0.01% to 1.00%
		Mn		0.10% to 2.50%
		P		0.005% to 0.050%
		S		0.005% to 0.050%
		Cr		11.0% to 25.0%
		Ni		8.0% to 20.0%
		Cu		0.001% to 1.0%
		Mo		0.15% to 4.50%
		Ti		0.001% to 0.50%

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**MECHANICAL TESTING**

I.	<b>MECHANICAL PROPERTIES OF METALS</b>				
1.	<b>Ferrous &amp; Non-Ferrous Materials , Alloys &amp; Products</b>	<b>Tensile Test</b>	ASME Sec.II Part-A SA 370-2017 ASTM A 370-2017 ASTM B557M -2015 IS 1608:2005 (RA 2017)	Load: 8 kN to 400 kN 80 to 1300 N/mm <sup>2</sup> 80 to 1500 N/mm <sup>2</sup> 80 to 2500 N/mm <sup>2</sup>	
		0.2% proof stress			
		Yield strength			
			% of Elongation		2% to 80%
			% of Reduction of Area		2% to 80%
			Bend	IS 1599:2012 (RA 2015)	(Qualitative) (Bend angle 180° Mandrel Size : (4,6,8,12,16,18,24,32, 36,40,60)mm)
	Brinell hardness	IS 1500 - 1 – 2013	100 HBW to 300 HBW 2.5/187.5		
	Rockwell hardness	IS 1586 Part-1- 2012	20 HRC to 70 HRC 20HRBW to 100 HRBW		
2.	<b>Ferrous materials, alloys &amp; products (Clad Plates)</b>	<b>Tensile Test</b>	ASME Sec.II Part-A SA 370-2017	100 to 1500 N/mm <sup>2</sup>	
		Shear		8 kN to 400 kN	
		Bend	ASTM A 370-2017	(Qualitative) (Bend angle 180° Mandrel Size: (4,6,8,12,16,18,24,32, 36,40,& 60)mm)	
3.	<b>Ferrous materials, alloys &amp; products (Seamless, ERW Pipe and Tubes)</b>	Flattening	ASTM A 513 / 513M -2015 IS 2328:2005 (RA: 2017)	Qualitative (10 mm to 300 mm OD)	

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4.	Welds & welded test specimens (Plate, Sheet, Pipe & Tube)	Transverse Tensile Test Root Bend, Face Bend & Side Bend	ASME Sec. IX 2017 AWS D1.1 2015	80 to 1700 N/mm <sup>2</sup> (Qualitative) (Bend angle 180° Mandrel Size: (4,6,8,12,16,18,24,32, 36,40,& 60)mm)
5.	Steel Fasteners (Bolts & Nuts)	Proof Load	IS 1367-Part 3 :2017 IS 1367- Part 6: 1994 (RA 2015)	(Qualitative) (M3 to M30 12 kN to 400 kN)