

Laboratory SV Metallurgical Labs, Shop No. 5 & 6, A-17, C.I.E, Balanagar, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6316

Page 1 of 5

Validity 27.09.2017 to 26.09.2019

Last Amended on 11.12.2018

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

CHEMICAL TESTING

I.	METALS & ALLOYS			
1.	Carbon & Low Alloy Steel	Carbon	IS 8811	0.09 % to 0.936 %
		Manganese	ASTM E 415	0.37 % to 1.117 %
		Phosphorus		0.011 % to 0.043%
		Sulphur		0.0062 % to 0.047 %
		Silicon		0.075 % to 0.916 %
		Copper		0.010 % to 0.177 %
		Nickel		0.010 % to 1.378 %
		Chromium		0.068 % to 2.12 %
		Molybdenum		0.0047 % to 0.758 %
		Vanadium		0.0087 % to 0.29 %
		Aluminum		0.013 % to 0.599 %
		Cobalt		0.0024% to 0.550 %
		Niobium		0.01% to 0.347 %
	Titanium		0.001% to 0.303 %	
2.	Cast Iron	Carbon	ASTM E 1999	1.9% to 4.00 %
		Manganese		0.03 % to 1.00 %
		Phosphorus		0.005 % to 0.40 %
		Sulphur		0.005 % to 0.08 %
		Silicon		0.15 % to 2.5 %
3.	Stainless Steel	Carbon	ASTM E 1086	0.0254 % to 0.63 %
		Manganese	IS 9879	0.596 % to 1.84 %
		Phosphorus		0.0199 % to 0.352 %
		Sulphur		0.004 % to 0.312 %
		Silicon		0.402 % to 0.503 %
		Copper		0.0259 % to 0.174 %
		Nickel		3.52 % to 19.34 %
		Molybdenum		0.333 % to 2.089 %
	Chromium		13.0 % to 24.48 %	

Laboratory SV Metallurgical Labs, Shop No. 5 & 6, A-17, C.I.E, Balanagar, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6316

Page 2 of 5

Validity 27.09.2017 to 26.09.2019

Last Amended on 11.12.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	Aluminum and Aluminum Alloys	Magnesium	ASTM E 1251	0.093 % to 1.70 %
		Silicon		0.099 % to 9.36 %
		Copper		0.111 % to 4.41 %
		Nickel		0.0046 % to 0.41 %
		Chromium		0.0007 % to 0.083 %
		Titanium		0.0053 % to 0.128 %
		Tin		0.0065 % to 0.11 %
		Lead		0.0022% to 0.114 %
		Manganese		0.154 % to 1.27 %
		Zinc		0.113 % to 0.864%
		Vanadium		0.0097 % to 0.0148 %
		Iron		0.086 % to 0.71 %

Ramprasath.R
Convenor

Nitan Garg
Program Manager

Laboratory **SV Metallurgical Labs, Shop No. 5 & 6, A-17, C.I.E, Balanagar, Hyderabad, Telangana**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-6316**

Page 3 of 5

Validity **27.09.2017 to 26.09.2019**

Last Amended on **11.12.2018**

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

MECHANICAL TESTING

I. MECHANICAL PROPERTIES OF METALS				
1.	Ferrous & Non Ferrous Alloys	Tensile Test	IS 1608 ASTM A 370 ASTM E 8 / E 8M IS 1786	4 KN to 400 KN
		0.2% Proof strength		
		Yield Strength		
		Transverse & longitudinal Tensile Strength		
		% Elongation		
% Reduction Area	5.0 % to 60 %			
		Rockwell Hardness Test	IS 1586 Part 1	20 HRC to 70 HRC 20 HRB to 100 HRBW
2.	Ferrous & Non Ferrous Alloys (Base Plate, Bars, Strips, Sections)	Bend Test,	IS 1599 ASTM A 370 ASTM E 290	Qualitative Bend Angle: 180 & Closed (Mandrel Dia 12, 15, 20, 25, 32, 40, 50, 60, 70 mm)
3.	Ferrous Alloys Pipe Tubes	Flattening Test	IS 2328 ASTM A 370	Qualitative
4.	Fusion Weld Joints Ferrous Materials Carbon Steel & Stainless Steel	Transverse Tensile Test	ASME (Sec IX): ASTM E 190 AWS D 1.1 - D 1.1M	4 kN to 400 kN
		All Weld Tensile Test		Qualitative
		Transverse Root & Face Bend Test		
		Transverse Side Bend Test		
		Fillet Weld Fracture Test		

Laboratory SV Metallurgical Labs, Shop No. 5 & 6, A-17, C.I.E, Balanagar,
Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6316

Page 4 of 5

Validity 27.09.2017 to 26.09.2019

Last Amended on 11.12.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
II.	METALLOGRAPHY TEST			
1.	Carbon, Alloy & Stainless Steel	Microstructure	ASM Vol.9-2004	Qualitative
		Average Grain Size (Ferritic)	IS 4748 ASTM E112 Comparison Method	Grain Size No. 1 to 10
2.	Grey Cast Iron	Microstructure	IS 7754	Qualitative

Laboratory SV Metallurgical Labs, Shop No. 5 & 6, A-17, C.I.E, Balanagar, Hyderabad, Telangana

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6316

Page 5 of 5

Validity 27.09.2017 to 26.09.2019

Last Amended on 11.12.2018

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

NON-DESTRUCTIVE TESTING

I.	ULTRASONIC TESTING FACILITY			
1.	Metals & Alloys Weld Joint (Steel and Aluminium) Forgings Casting Rolled Products	Ultrasonic Testing	ASME Sec-V Article 4,5,23; API 1104 IS 4260 IS 7343 ASTM A 609 IS 4225 ASTM B 594 SAE AMS 2630 B / 2632 B	Detection of internal flaws Weld Thickness 8 mm to 100 mm Castings Forgings Rolled Products Up to 400 mm
II.	PENETRANT TESTING FACILITY			
1.	Metals & Alloys Weld Joint Casting Forging	Penetrant Testing - Solvent removable visible and fluorescent technique	ASME Sec-V Article 6 and 24 ASTM E 165-09 IS 3658 ASTM E 1417-95a	Defects open to the Surface
III.	MAGNETIC PARTICLE TESTING			
1.	Welds & Alloys Welds, Casting Forging	Magnetic Particle Testing-Wet & dry, Fluorescent and non-fluorescent, Yoke technique	ASME Sec-V Article 7 and 25 ASTM E-709-08 IS 5334	Detection of flaws Up to 3 mm Depth