Laboratory	**Raipur Metallurgical Lab, Village - Jarwah, Bana Guma Road, P. O. Hirapur, Raipur, Chhattisgarh**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-6083** ***(in lieu of T-2058, T-2059)***	**Page 1 of 2**	
Validity	**29.09.2017 to 28.09.2019**	**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

CHEMICAL TESTING

I.	**METALS & ALLOYS**			
1.	**Low Alloy & Mild Steel**	Carbon	ASTM E 415	0.01% to 1.40%
		Silicon	IS 8811	0.01% to 2.00%
		Manganese		0.30% to 1.7%
		Phosphorus		0.005% to 0.10%
		Sulphur		0.005% to 0.10%
		Chromium		0.0015% to 1.348%
		Nickel		0.0025% to 4.13%
		Molybdenum		0.002% to 0.5%
		Aluminum		0.001% to 0.45%
		Copper		0.001% to 0.75%
		Cobalt		0.009% to 0.415%
		Titanium		0.001% to 0.4%
		Niobium		0.005% to 0.32%
		Vanadium		0.001% to 0.41%
		Boron		0.0005% to 0.01%
		Arsenic		0.005% to 0.05%
2.	**Stainless Steel**	Carbon	ASTM E 1086	0.01% to 0.3%
		Silicon	IS 9879	0.01% to 1.1%
		Manganese		0.30% to 2.00%
		Phosphorus		0.003% to 0.100%
		Sulphur.		0.003% to 0.100%
		Chromium		10% to 26%
		Nickel		2% to 20%
		Molybdenum		0.09% to 0.3%
		Aluminum		0.02% to 0.4%
		Copper		0.02% to 0.3%
		Cobalt		0.02% to 0.116%
		Titanium		0.01% to 0.4%
		Vanadium		0.03% to 0.4%
		Boron		0.0006% to 0.002%

Nikhil Kumar
Convenor

N. Venkateswaran
Program Director

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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 MATERIALS**			
1.	**Ferrous Materials**	Tensile Test UTS YS % Elongation % RA	IS 1608 ASTM A 370 IS 1786	 12 kN to 600 kN 12 kN to 600 kN 1% to 80% 1% to 80%
		Bend	IS 1599 ASTM A 370	Qualitative (Mandrel Diameter: 12 mm to 160 mm)
		Re-bend	IS 1786	Qualitative (Mandrel Diameter : 24 mm to 160 mm)
2.	**Metallic Material**	Brinell Hardness	IS 1500 (Part 1)	100 HBW to 450 HBW (Dia/Force: 5 mm/750 kgf)
				100 HBW to 500 HBW (Dia/Force: 10 mm/3000 kgf)
3.	**Ferrous Material**	Charpy Impact V-notch	IS 1757 (Part 1)	2 J to 300 J (Temperature: Ambient to (-)50 ºC)

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Convenor

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Program Director