Laboratory	**Met Chem Laboratory Services, 51, Sapphire Tower, Ground Floor, Shapar (Veraval), Ta. Kotda Sangani, Dist. Rajkot, Gujarat**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-7650**	**Page 1 of 3**	
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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
		CHEMICAL TESTING		
I.	**METALS & ALLOYS**			
1.	**Carbon and Low Alloy Steel**	Carbon	IS 8811	0.060 % to 1.50 %
		Silicon		0.150 % to 1.50 %
		Manganese		0.310 % to 2.00 %
		Phosphorous		0.009 % to 0.10 %
		Sulfur		0.004 % to 0.35 %
		Chromium		0.040 % to 1.90 %
		Molybdenum		0.006 % to 0.30 %
		Nickel		0.270 % to 2.00 %
		Copper		0.012 % to 0.30 %
2.	**Austenitic Stainless Steel**	Carbon	ASTM E-1086 IS 9879	0.020 % to 0.50 %
		Silicon		0.200 % to 0.80 %
		Manganese		0.300 % to 2.00 %
		Phosphorous		0.009 % to 0.50 %
		Sulfur		0.009 % to 0.50 %
		Chromium		5.000 % to 25.00 %
		Molybdenum		0.080 % to 3.00 %
		Nickel		5.000 % to 25.00 %
		Copper		0.110 % to 0.50 %
		Cobalt		0.012 % to 0.20 %
		Vanadium		0.072 % to 0.10 %
3.	**Cast Iron**	Carbon	ASTM E-1999 IS 15338	0.050 % to 3.50 %
		Silicon		0.200 % to 3.00 %
		Manganese		0.300 % to 2.00 %
		Phosphorous		0.009 % to 0.50 %
		Sulfur		0.005 % to 0.50 %
		Chromium		0.050 % to 5.00 %

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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 METALS**			
1.	**Ferrous Materials**	**Hardness Test**	ASTM E18	
		Rockwell B		B scale: 20 to 100
		Rockwell C		C scale: 20 to 70
		Jominy and Quench test	ASTM A 255/IS 3848	20 HRC to 70 HRC
II.	**METALLOGRAPHY TEST**			
1.	**Ferrous Materials, Alloys & Products**	Grain size	ASTM E-112 (Comparison method)	Qualitative ASTM GS No.1 to 10
		Microstructure Examination	ASMT E-407, ASM Volume-9	Qualitative 100 x to 1000 x
		Graphite Micro Structure in Cast iron	IS 7754	100 x to 400 x
		Case Depth	IS 6416 (Microscopic Method)	10 µm to 900 µm
		Quantitative Metallography	ASTM E-562	0.5 % to 90 %
		Decarburization Depth	ASTM E-1077/IS 6396 (Microscopic Method)	10 µm to 900 µm
		Carbide Structure (Bearing Steel)	SEP.1520 (DIN)	Qualitative 100 x to 1000 x

Amit Kumar
Convenor

Anuja Anand
Program Manager

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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
		Macro etch Test for Flow lines	ASTM E-340, ASTM-E-381-01	Qualitative
		Inclusion rating	ASTM E-45 IS 4163	Qualitative 100 x
		Inter -metallic phase	ASTM A923-Method-A	Qualitative 1000 x
		Coating Thickness	ASTM B-487-85	1 µm to 1 mm

Amit Kumar
Convenor

Anuja Anand
Program Manager