Laboratory	**Shabri Enterprises, 143-D, Light Industrial Area, Bhilai, Chhattisgarh**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-5642**	**Page 1 of 4**	
Validity	**18.05.2017 to 17.05.2019**	**Last Amended on 13.04.2018**	

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.	**Plain and Low alloy steels**	C	ASTM E 415 IS 8811 IS 228 Part-23: (For Nitrogen only)	0.006 % to 1.1 %
		Si		0.004 % to 1.5 %
		Mn		0.1 % to 2.0 %
		P		0.004 % to 0.1 %
		S		0.004% to 0.1 %
		Cr		0.005% to 1.45 %
		Ni		0.01 % to 2.0 %
		Mo		0.001 % to 0.5%
		V		0.002% to 0.5 %
		Cu		0.008% to 0.5%
		Nb		0.001% to 0.05%
		Ti		0.001% to 0.05%
		Al		0.001% to 0.1 %
		N		0.002% to 0.03%
		Sn		0.001% to 0.05%
		B		0.0001% to 0.02%
		Co		0.001% to 0.05%
		Zr		0.001% to 0.05%
		As		0.001% to 0.01%
2.	**Stainless Steel**	C	ASTM E 1086 IS 9879	0.005% to 0.30%
		Si		0.1% to 1 %
		Mn		0.1% to 2%
		P		0.004% to 0.1%
		S		0.004% to 0.1%
		Cr		5.0% to 27%
		Ni		0.2% to 25%
		Mo		0.01% to 3%
		Cu		0.01%to 0.50%
3.	**Cast Iron**	C	ASTM E 1999 IS 15338	1.50 % to 4.0 %
		Si		0.15% to 2.5%

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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
		Mn		0.2% to 2%
		P		0.004% to 0.30%
		S		0.004% to 0.15%
		Cr		0.02% to 1%
		Ni		0.025% to 2%
		Mo		0.01% to 1%
4.	**Copper Base alloys**	Al	BS EN 15079	0.001 % to 10 %
		Sb		0.001 % to 0.4%
		As		0.001 % to 0.1%
		Fe		0.001 % to 0.5%
		Pb		0.001 % to 10%
		Mg		0.001 % to 0.1%
		Ni		0.001 % to 10%
		P		0.001 % to 0.3%
		Sn		0.001 % to 10%
		Zn		0.001 % to 40%
		Ag		0.001 % to 0.1%
		Si		0.001 % to 1.0%
		S		0.001 % to 0.3%
		Bi		0.001 % to 0.2%
		C		0.001% to 0.1%

Laboratory	**Shabri Enterprises, 143-D, Light Industrial Area, Bhilai, Chhattisgarh**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-5642**	**Page 3 of 4**	
Validity	**18.05.2017 to 17.05.2019**	**Last Amended on 13.04.2018**	

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.	**Metals & Alloys (Ferrous & Non-ferrous)**	1) Tensile Testing		
		Tensile Strength	IS:1608	20 kN to 1000 Load
		Yield Strength	IS 1786	20 kN to 1000 Load
		0.2%Proof Stress	ASTM A 370	20 kN to 1000 Load
		% of Elongation	BS EN ISO 6892 -1	5% to 70 %
		% of Reduction Area		10% to 80 %
2.	**Weld in Metal (Ferrous)**	Reduce Sample Tensile Strength	ASME Sec IX QW-150,	20 kN to1000 Load
		All Weld Tensile Strength	AWS D 1.1 (4.9.3.4, 4.9.3.6)	20 kN to 1000Load
		All weld Elongation		5% to 70 %
3.	**Metals & Alloys**	Bend Test	IS:1599 IS 1786 ASTM A 370 BS EN ISO 7438	Mandrels Dia 6, 8, 10, 12, 20, 24, 32, 36, 38, 40, 42, 48, 54, 60, 66, 75, 80, 84, 100, 112, 120, 125, 224 mm
4.	**Weld in Metal (Ferrous)**	Face Bend Test Root Bend Test Side Bend Test	ASME Sec IX QW-160 AWS D 1.1 (4.9.3.1)	12, 20, 24, 32, 38.1, 40 mm
5.	**TMT Steel Bar**	Rebend Test	IS 1786	Mandrels Dia 20, 24, 32, 36, 40, 42, 48, 60, 84, 112 mm
		Weight/Meter	IS 1786	0.10 to 10 kg/m
6.	**Metals & Alloys (Steel)**	Charpy Impact Test 'V' Notch	IS:1757 Part-1 (KV2)	2 J to 240 J (Room Temp to -70ºC)
		Rockwell Hardness Test HRC HRB	IS 1586 Part-1 ASTM A370 ISO 6508 Part-1	 20 HRC to 70 HRC 20 HRC to 100 HRB

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Validity	**18.05.2017 to 17.05.2019**	**Last Amended on 13.04.2018**	

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7.	**Steel Plates**	Through Thickness Tension test (%RA)	ASTM A 770 M BS EN 10164	Plate thickness from 15mm to 350mm 10% to 80 %
8.	**Ferrous (Tubes/Pipes)**	Flattening Test	IS 2328 ASTM A 370	Up to 600 mm dia Pipe/Tubes Qualitative

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