Laboratory	**Shanmukha Laboratories (& Allied Services), K-34, M.I.D.C., Ambad, Nashik, Maharashtra**			
Accreditation Standard	**ISO/IEC 17025: 2005**			
Discipline	**Mechanical Testing**	**Issue Date**	**11.03.2014**	
Certificate Number	**T-1053**	**Valid Until**	**10.03.2016**	
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. MECHANICAL PROPERTIES OF MATERIAL				
1.	**Metal & Alloys**	Tensile Test UTS YS 0.2 % Proof Test	IS 1608: 2005	0.01 kN to 25 kN L.C.: 0.0025 kN, 0.01 kN to 600 kN L.C.: 0.01 kN
		% Elongation	IS 1608: 2005	0.5 to 70 %
		% RA	IS 1608: 2005	0.5 to 80 %
		Hardness Rockwell Scale - B	IS 1586 :2012	HRBW 20 to 100
		Rockwell Scale - C	IS 1586 :2012	HRC 20 to 65
		Brinell Hardness - 187.5 kg 2.5 mm Steel Ball	IS 1500: 2005	HBW 50 to 500
		Vickers 30 kg	IS 1501:2002	HV 100 to 800
		Vickers 10 kg	IS 1501:2002	HV 50 to 1000
		Vickers 5 kg	IS 1501:2002	HV 50 to 1000
2.	**Metal & Alloys (Plate, Rod & Sheet)**	Bend Test	IS 1599 :2012	Upto 40 mm (Thickness/Round) Load Capacity Upto 600 kN Mandrel Dia.: 2 mm to 120 mm

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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Metal & Alloys (Tubes / Pipes)**	Flattening	IS 2328 :2005	Upto 400 mm in Ferrous Tube Upto 300 in Non Ferrous Tubes
		Drift Expansion Test	IS 2335 : 2005 45° cone Mandrel	Tube OD: Upto 100 mm Thickness: Upto 12 mm
4.	**Metal & Alloys (Sheets & Plates)**	Erichsen Cupping Test	IS 10175:1993	Thickness: Upto 2 mm
5.	**Welded Ferrous & Non Ferrous Metals**	Tensile Test UTS, YS	ASME Sec. IX, 2011a	0.01 kN to 600 kN L.C.: 0.01 kN
		Bend Test	ASME Sec. IX, 2011a	Mandrel Dia.: 2 mm to 120 mm
6.	**Ferrous Metals**	Impact Test		
		a) Charpy Impact	IS 1757 :1988, RA 2003	2 J to 300 J U Notch Charpy (Ambient to -50°C)
			IS 1499 :1988, RA 2003	2 J to 300 J U Notch Charpy (Ambient to -50°C)
		b) Izod Impact	IS 1598:1977, RA 2003	2J to 170 J Izod
7.	**Stainless Steel**	IGC Practice A, B, E	ASTM A 262 : 2013	No Specific Range

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S.No.	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.	**Ferrous Metals**	Inclusion Content in Steel by Microscopic Method	IS 4163 : 2004 Comparison Method 'A'	Magnification: 100 X
		Grain Size Measurement	IS 4748 : 2009 Comparison Method	Magnification: 100 X IS 1 No. to 10 No.
		Determination of De-carburised Depth of Steel	IS 6396 : 2000	Magnification: 100 X
		Case depth Measurement of Steel	IS 6416 : 1988	Magnification: 10 X, 100 X
		Macro Etch of Steel	IS 11371 : 1985	Magnification: 10 X
2.	**Metal & Alloys**	Micro Structures	ASM Metals Handbook Vol. 7 & 8, 8th Edition, IS 7739:1975	Magnification: 100 X, 200 X, 450 X, 1000 X

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