

Laboratory Senior Quality Assurance Establishment (Metals), Ambarnath,
 Dist. Thane, Maharashtra
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-6694 (in lieu of T-0019) **Page 1 of 2**
Validity 21.12.2017 to 20.12.2019 **Last Amended on** 03.01.2018

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

I.	MECHANICAL PROPERTIES OF MATERIALS			
1.	Metallic Material (Copper and Aluminium Based Alloys & Steel)	Tensile Strength and Yield Stress 0.1 to 1% Proof Stress % Elongation % Reduction in area	IS 1608	Load: 1 kN to 20 kN 4 kN to 200 kN 2 % to 70 % 2 % to 80%
		Brinell Hardness	IS 1500 (Part 1)	200 HBW ₁₀ to 653 HBW ₁₀ 200 HBW ₅ to 653 HBW ₅
		Vickers Hardness	IS 1501 (Part 1)	50 HV ₅ to 229 HV ₅ 50 HV ₁₀ to 459 HV ₁₀ 50 HV ₃₀ to 850 HV ₃₀
		Bend	IS 1599 JSS-9535-2	Qualitative (Mandrel Diameter: 10 mm and 24 mm)
		Reverse Bend	JSS-9535-2 IS 1403-1	Qualitative (Mandrel Diameter: 1 mm, 2 mm, 3 mm, 5 mm, 10 mm Former diameter: 1.24 mm, 1.29 mm, 1.41 mm, 1.63 mm, 2.13 mm, 2.17 mm and 2.44 mm)
II.	METALLOGRAPHY TEST			
1.	Steels	Macro Structure	IS 13015 IS 11371	Qualitative (Magnification: 1 X to 10 X)
2.	Aluminium Base Alloys	Macro Structure	IS 12573	Qualitative (Magnification: 1 X to 10 X)
3.	Copper Base Alloys	Macro Structure	IS 13484	Qualitative (Magnification: 1 X to 10 X)

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4.	Metallic Material (Copper and Aluminium Based Alloys & Steel)	Microstructure	ASM Metal Handbook Vol-9 (Ninth Edition)	Qualitative (Magnification: 100 X, 200 X, 500 X, 1000X)
5.	Metallic Material (Low Carbon Steel and Copper Base)	Estimation of Grain Size (Comparison Method)	IS 4748 ASTM E112	Grain Size 1 to 10 (Untwined Grain, Magnification: 100 X), Grain Size 1 to 8 (Twined Grain, Magnification: 75 X)