

Laboratory Testing Laboratories, Vinir Engineering Private Limited, No. 102-104, Bommasandra Industrial Area, Bengaluru, Karnataka

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6443

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Validity 23.06.2018 to 22.06.2020

Last Amended on 12.07.2018

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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CHEMICAL TESTING

I.	METALS & ALLOYS			
1.	Stainless Steels	Carbon	IS 9879:1998 (RA 2015)	0.013 % to 0.407 %
		Manganese		0.171 % to 2.090 %
		Silicon		0.2358 % to 1.639 %
		Phosphorus		0.0153 % to 0.0495 %
		Sulphur		0.001 % to 0.0261 %
		Chromium		03.591 % to 25.000 %
		Molybdenum		0.0828 % to 4.532 %
		Nickel		0.360 % to 20.000 %
		Tin		0.004 % to 0.008 %
		Copper		0.063 % to 5.764 %
		Aluminium		0.002 % to 0.103 %
		Cobalt		0.047 % to 0.366 %
		Vanadium		0.038 % to 0.550 %
	Niobium	0.063 % to 0.333 %		
	Titanium	0.002 % to 0.550 %		
2.	Plain Carbon and Low Alloy Steels – Point to Plane Technique	Carbon	IS 8811:1998 (RA 2018)	0.002 % to 0.601 %
		Manganese		0.011 % to 2.288 %
		Silicon		0.003 % to 2.145 %
		Phosphorus		0.004 % to 0.099 %
		Sulphur		0.002 % to 0.081 %
		Chromium		0.019 % to 5.473 %
		Molybdenum		0.003 % to 1.753 %
		Nickel		0.022 % to 4.114 %
		Tin		0.001 % to 0.026 %
	Copper	0.007 % to 0.339 %		

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		Aluminium		0.002 % to 01.813 %
		Boron		0.0001 % to 0.2178%
		Cobalt		0.010 % to 0.366 %
		Vanadium		0.001 % to 0.583 %
		Niobium		0.006 % to 0.661 %
		Titanium		0.001 % to 0.424 %

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous materials alloys & products	Tensile Test	IS 1608:2005 (RA 2010) / ASTM A 370:2017 (at ambient temp.)	Load: 4 kN to 200 kN
		Proof Strength		Load: 4 kN to 200 kN
		Yield Strength		Load: 4 kN to 200 kN
		Tensile Strength		Up to 40 %
		Elongation		Up to 80 %
		Reduction in Area		
		Brinell Hardness HBW 10/3000	IS 1500-1:2013	120 HBW to 500 HBW
		Charpy Impact V-Notch	ASTM E 23:2016b IS 1757- Part 1:2014 (at ambient and temp. Up to (-)65°C	Up to 300 J
		U-Notch	IS 1499:1977 (RA 2009) (at ambient temp.)	Up to 300 J
		Lateral Expansion	ASTM E 23:2016b	Up to to 5 mm
Izod Impact	ASTM E 23:2016b IS 1598:1977 (RA 2009)	Up to 120 J		