

Laboratory CITCO-IDFC Testing Laboratory, Plot No. 182/40, 41, Industrial Area, Phase-1, Chandigarh
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number TC-6933 **Page 1 of 3**
Validity 20.02.2018 to 19.02.2020 **Last Amended on --**

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. METAL AND ALLOYS				
1.	Low alloy & Carbon steels	Carbon Sulphur Phosphorous Silicon Manganese Nickel Chromium	IS 8811-1998 (RA.2012) ASTM E415:2017	0.005% to 1.00 % 0.001% to 0.30% 0.001% to 0.25% 0.01% to 1.50% 0.02% to 2.0% 0.001% to 2.50% 0.001% to 2.50%
2.	Stainless Steels	Carbon Sulphur Phosphorous Silicon Manganese Nickel Chromium Molybdenum	IS 9879-1998 (RA.2015) ASTM E 1086-2014	0.005% to 0.30% 0.001% to 0.045% 0.001% to 0.045 % 0.15% to 2.50% 0.05% to 2.50 % 1.50% to 20.0% 5.0% to 25.5 % 0.15% to 2.50%

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Certificate Number **TC-6933** Page 2 of 3

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<u>MECHANICAL TESTING</u>				
I. MECHANICAL PROPERTIES OF METALS				
1.	Ferrous and Non-Ferrous Materials	Vickers Hardness	IS 1501 (Part 1): 2013	200 to 730 HV1 125 to 700 HV5 200 to 760 HV10 180 to 750 HV30
		Brinell Hardness	IS 1500 (Part 1): 2013	140 to 450 HBW (10mm/3000kgf) 140 to 450 HBW (5mm/750 kgf)
		Tensile strength	IS 1608:2005	200 MPa to 1500 MPa (25 kN to 1000 kN/ 0.05 kN to 0.25 kN)
		Yield strength	IS 1608:2005	50 MPa to 1350 MPa (25 kN to 1000 kN/ 0.05 kN to 0.25 kN)
		% of Elongation	IS 1608:2005	2 % to 60%
		% Reduction in Area	IS 1608:2005	2 % to 60%
		Bend test	IS 1599:2012	Qualitative (Mandrel Dia 20,24,32,40, 45,84,112,126,140,160)mm
2.	Ferrous Materials	Proof Load for Bolt	IS 1367 (Part 3):2002	Qualitative (25 kN to 200 kN)
		Tensile Strength Under Wedge Loading of Bolt	IS 1367 (Part 3):2002	400 MPa to 1500 Mpa (25 kN to 200 kN/ 0.05 kN)
		Proof Load for Nut (Coarse Thread)	IS 1367 (Part 6):1994	Qualitative (25 kN to 200 kN/ 0.05 kN)
		Weight per meter	IS 1786-2008, Amdt 2012	0.30 kg/m to 7.8 kg/m

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Page 3 of 3

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		Re-bend test	IS 1786-2008,Amdt 2012	Qualitative (Mandrel Dia 20,24,32, 40,45,84,112,126,140,160) mm