

<b>Laboratory</b>	<b>Skipper Limited (Technical Service Department), N.H.-6, Village - Madhavpur, P.O. Mahishrekhya, Dist-Howrah, West Bengal</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Mechanical Testing</b>	<b>Issue Date</b>	<b>29.10.2015</b>
<b>Certificate Number</b>	<b>T-2642</b>	<b>Valid Until</b>	<b>28.10.2017</b>
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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
<b>I.</b>	<b>MECHANICAL PROPERTIES OF MATERIALS</b>			
<b>1.</b>	<b>Ferrous Metals &amp; Alloys Tube/ Bar/ Flat/ Plate/ Strip/ Structural Section</b>	<b>Tensile test:</b> Yield Strength	IS 1608: 2005(RA 2011)	5 kN to 600kN
		Tensile Strength		5 kN to 600 kN
		% Elongation		1 % to 80 %
		Dimension & Sectional Weight	IS 2062:2011 IS 808: 1989, IS 1239 (Part 1): 2004 IS 1239(Part 2): 2011 IS 1161: 1998 (RA 2003) IS 3601: 2006 IS 9295: 1983 IS 4923: 1997 IS 10748: 2004, IS 1730: 1989 (RA 2004)	ID: 15 mm to 200 mm OD: 21 mm to 222mm Thick: 4 mm to 25 mm Pipe Thick: 2 mm to 6.5 mm Length: 3000 mm to 7000mm Weight: 200 g to 100 kg
		Bend Test Bar/ Flat/ Plate/ Strip through Bend Angle 90 <sup>0</sup> & 180 <sup>0</sup>	IS 1599: 2012	4 mm to 25 mm Thick Mandrel (Grooved bend former) Dia: 220 mm, 320 mm, 400 mm, 503 mm, 576 mm, 718 mm, 950 mm
	Bend Test of full section tube through Bend Angle 90 <sup>0</sup> & 180 <sup>0</sup> ,	IS 2329: 2005	NB 15 mm to NB 50 mm Mandrel (Grooved bend former) Dia: 220 mm, 320 mm, 400 mm, 503 mm, 576 mm, 718 mm, 950 mm	
<b>2.</b>	<b>Ferrous Tube</b>	Flattening Test	IS 2328: 2005 (RA 2011)	OD: 76.1 to 219.1 Thick: 3.2 mm to 5.9 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.	Ferrous Tube & Socket	Drift Expansion Test	IS 2335:1985 (RA 2011)	OD: 21.3 mm to 219.2mm Thick: 2 mm to 6.5 mm
4.	Ferrous Metals & Alloys	Vickers Hardness Test	IS 1501(Part 1): 2013	90 HV5 to 120 HV5 350 HV30 to 700 HV30
		Impact Test Charpy (V-notch)	IS 1757: 1988 (RA 2009)	Upto 300 J (At Room Temp.)
5.	Bolts (Carbon & Alloy Steel)	Tensile, Proof & Wedge Loads, Head Soundness	IS 1367 (Part 3): 2002 (RA 2007)	5000 N to 60000 N M12,M14,M16,M18, M20,M22,M24
		Vickers Hardness	IS 1501(Part 1): 2013	120 HV10 to 220 HV10
		Shear Strength	IS 5242: 1979 (RA 2010)	5 kN to 600 kN
6.	Nuts (Carbon & Alloy Steel)	Proof Load	IS 1367(Part 6) (RA 2010)	5000 N to 6000 N M12, M14, M16, M18, M20,M22, M24
		Vickers Hardness	IS 1501(Part 1): 2013	140 to 302 HV30
7.	Nuts & Bolts (Carbon & Alloy Steel)	Dimensions (Washer)	IS 1363 (Pt.1&3):2002	Go & No - Go Gauging M12, M14, M16, M18, M20, M22, M24
8.	Nuts & Bolts (Galvanized)	Dimensions (Nut & Bolt)	IS 12427:2001	Go & No - Go Gauging M12, M14, M16, M18, M20, M22, M24
9.	Steel Washer	Dimensions	IS 2016: 1967 (RA 2001)	M12 to M24 24 mm to 44 mm ID 2.5 mm to 4.0 mm thick

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