

Laboratory **Quality Control Laboratory, Lal Baba Seamless Pipes Pvt. Ltd.,  
Khasberia, Bardhanyaghata, Haldia, East Midnapur, West Bengal**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7909**

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Validity **26.09.2018 to 25.09.2020**

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.	METALS & ALLOYS			
1.	<b>Carbon Steel &amp; Low Alloy Steel For Steel Tube &amp; Pipe</b>	C	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.10 % to 0.920 %
		Si	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.10 % to 1.20 %
		Mn	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.300 % to 1.60 %
		P	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.010 % to 0.065 %
		S	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.010 % to 0.050 %
		Cr	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.100 % to 1.50%
		Mo	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.030 % to 0.40 %
		Ni	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.050 % to 1.50 %
		Al	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.010 % to 0.050 %
		Cu	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.100 % to 0.20 %

**Vivek Vardhan**  
Convenor

**Alok Jain**  
Program Manager

Laboratory

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		V	ASTM E 415: 2017, JIS G 1253 : 2013 & IS 8811 : 1998 (RA 2018)	0.050 % to 0.250 %
2.	Stainless Steel (Tube & Pipe)	C	JIS G 1253 : 2013	0.017 % to 0.44 %
			IS 9879 : 1998 (RA 2015)	0.017 % to 0.30 %
			ASTM E 1086: 2014	0.017 % to 0.25 %
		Si	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.100 % to 0.500 %
		Mn	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.500% to 2.00 %
		P	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.010 % to 0.035 %
		S	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.005 % to 0.065 %
		Cr	JIS G 1253 : 2013	0.97 % to 20.30 %
			ASTM E 1086: 2014 & IS 9879 : 1998 (RA 2015)	17.00 % to 20.00 %
		Mo	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.100 % to 0.500 %
		Ni	JIS G 1253 : 2013	1.00 % to 11.20 %
			ASTM E 1086: 2014 & IS 9879 : 1998 (RA 2015)	7.50 % to 11.12 %
		Cu	ASTM E 1086: 2014 , JIS G 1253 : 2013 & IS 9879 : 1998 (RA 2015)	0.200 % to 0.500 %

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<b><u>MECHANICAL TESTING</u></b>				
<b>I.</b>	<b>MECHANICAL PROPERTIES OF METALS</b>			
<b>1.</b>	<b>Steel Tube &amp; Pipe</b>	Yield Stress	ASTM A 370 :2017 & IS1608 : 2018	100 N/mm <sup>2</sup> to 1500 N/mm <sup>2</sup>
		Tensile Strength	ASTM A 370 :2017 & IS1608 : 2018	100 N/mm <sup>2</sup> to 2000 N/mm <sup>2</sup>
		Elongation	ASTM A 370 :2017 & IS1608 : 2018	2 % to 65 %
		Brinell Hardness	IS 1500:Part 1- 2013 & ASTM E10 : 2017	100 HBW 5/750 to 450 HBW 5/750
		Rockwell Hardness HRBW HRC	ASTM A 370 :2017 & IS 1586:2018	50 HRBW to 100 HRBW 20 HRC to 62 HRC
		Bend test	IS 2329 : 2005	Upto 180° (Pipe & Tube OD 17.10 mm to 60.30 mm)
		Flattening	ASTM A 370 : 2017	Pipe & Tube OD 6 mm to 114.30 mm
		Flaring	ASTM A 370 : 2017	Pipe & Tube OD 6 mm to 114.30 mm
		Grain Size	ASTM E 112: 2013 (Comparison Procedure)	Qualitative 1.0 – 10.0 (at (magnification 100X)
		Inclusion rating	ASTM E45 : 2018 (Microscopic Test)	Qualitative Type A to Type D (0.0 to 2.0) (magnification 100X)

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