

<b>Laboratory</b>	<b>Testing Laboratory, Institute for Machine Tools Technology, A-4, Focal Point, Batala, Punjab</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>29.06.2015</b>
<b>Certificate Number</b>	<b>T-0378</b>	<b>Valid Until</b>	<b>28.06.2017</b>
<b>Last Amended on</b>	<b>-</b>	<b>Page</b>	<b>1 of 4</b>

<b>S.No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>I.</b>	<b>METALS &amp; ALLOYS</b>			
<b>1.</b>	<b>Ferrous Metals &amp; Alloys (Carbon &amp; Alloy Steel)</b>	C	IS 8811: 1998 ASTM E 415: 2014	0.01 % to 1.30 %
		Si		0.03 % to 1.70 %
		S		0.005 % to 0.10 %
		P		0.004 % to 0.10 %
		Cr		0.10 % to 5.0 %
		Ni		0.10 % to 4.50 %
		Mn		0.10 % to 1.70 %
		Mo		0.05 % to 1.0 %
		W		0.1 % to 0.5 %
		V		0.01 % to 2.0 %
		Co		0.01 % to 0.50 %
		Al		0.25 % to 1.25 %
		Cu		0.05 % to 0.70 %
	Nb	0.005 % to 0.05 %		
<b>2.</b>	<b>Ferrous Metals &amp; Alloys (Cast Iron)</b>	C	ASTM E 1999: 2005	1.90 % to 4.00 %
		Si		1.75 % to 4.00 %

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<b>Last Amended on</b>	<b>-</b>	<b>Page</b>	<b>2 of 4</b>

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	<b>Ferrous Metals &amp; Alloys (Cast Iron)</b>	S	ASTM E 1999: 2005	0.005 % to 0.10 %
		P		0.005 % to 0.10 %
		Cr		0.05 % to 2.50 %
		Ni		0.05 % to 2.50 %
		Mn		0.10 % to 2.00 %
		Mo		0.05 % to 0.50 %
		V		0.05 % to 0.20 %
		Cu		0.01 % to 1.0 %
		Al		0.005 % to 0.10 %
<b>3.</b>	<b>Ferrous Metals &amp; Alloys (Stainless Steel)</b>	C	IS 9879: 1998 ASTM E 1086: 2014	0.010 % to 0.40 %
		Si		0.10 % to 1.50 %
		S		0.005 % to 0.10 %
		P		0.005 % to 0.10 %
		Cr		0.05 % to 25.0 %
		Ni		0.1 % to 36.0 %
		Mn		0.1 % to 2.5 %
		Mo		0.05% to 3.0 %
	Cu	0.05 % to 4.00 %		

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**Last Amended on** - **Page** 3 of 4

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4.	Carbon & Alloy Steels	C	ASTM E 1019: 11	0.005 % to 1.00 %
		S		0.005 % to 0.10 %
5.	Non Ferrous Metals (Copper & Its Alloy)	Fe	Issue no.: DC/01 TO DC/09 & Issue date: 10/02/01 BS EN 15079: 2007	0.005 % to 3.0 %
		Mn		0.007 % to 1.15 %
		P		0.001 % to 1.00 %
		S		0.001 % to 0.03 %
		Ni		0.005 % to 35.00 %
		Cr		0.001 % to 1.00 %
		Al		0.05 % to 15.00 %
		Sn		0.001 % to 10.00 %
		Co		0.001 % to 2.0 %
		Pb		0.005 % to 15.00 %
6.	Non Ferrous Metals (Aluminum and Its Alloy)	Zn	ASTM E 1251: 2005	0.01 % to 40.00 %
		Fe		0.001 % to 2.00 %
		Mn		0.001 % to 1.00 %
		Si		0.01 % to 13.00 %
		Cu		0.05 % to 10.00 %
	Ni	0.01 % to 2.50 %		

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**Last Amended on** - **Page** 4 of 4

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	<b>Non Ferrous Metals (Aluminum and Its Alloy)</b>	Cr	ASTM E 1251: 2005	0.01 % to 0.30 %
		Ti		0.01 % to 0.30 %
		Sn		0.01 % to 0.30 %
		Pb		0.01 % to 0.30 %
		Mg		0.01 % to 3.5 %
		Zn		0.01 % to 7.00 %

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