

Laboratory **ELCA Laboratories, Plot No. A-444, Road No. 37, MIDC, Wagle Indl. Area, Tal. & Dist. Thane, Maharashtra**
Location 1 : Plot No. A-444, Road No. 37, MIDC, Wagle Indl. Area, Tal. & Dist. Thane, Maharashtra
Location 2 : W-361, TTC Industrial Area, MIDC, Rabale, Navi Mumbai, Maharashtra

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

Discipline **Chemical Testing** **Issue Date** **15.04.2015**

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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 (%)
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Location: 1

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1.	Low Alloy Steel, & Mild Steels	Carbon	ASTM E 1019: 2011	0.01 % to 1.00 %
		Silicon	IS 228 (Part 8): 1989 (RA 2009)	0.01 % to 5.00 %
			ASTM E 350: 2012	0.01 % to 3.50 %
		Manganese	IS 228 (Part 2): 1987 (RA 1997)	0.10 % to 1.50 %
			ASTM E 350: 2012	0.10 % to 1.50 %
		Sulphur	ASTM E 1019: 2011	0.001 % to 0.35 %
		Phosphorus	IS 228 (Part 3): 1987 (RA 2008)	0.02 % to 0.25 %
			ASTM E 350: 2012	
		Chromium	IS 228 (Part 6): 1987 (RA 2009)	0.05 % to 35.0 %
			ASTM E 350: 2012	0.05 % to 3.99 %
			ASTM E 350: 2012 AAS	0.006 % to 1.00 %
		Nickel	IS 228 (Part 5): 1987 (RA 2009)	0.1 % to 5 %
			ASTM E 350: 2012	0.1 % to 5.00 %
			ASTM E 350: 2012 AAS	0.003 % to 0.50 %
		Molybdenum	IS 228 (Part 7): 1990 (RA 2006)	0.1 % to 1 %
			ASTM E 350: 2012 AAS	0.1 % to 1 %
		Vanadium	ASTM E 350: 2012 AAS	0.006 % to 0.15 %

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Location: 1				
	Low Alloy Steel, & Mild Steels	Copper	ASTM E 350: 2012 AAS IS 228 (Part 15): 1992 (RA 2004)	0.004 % to 0.50% 0.05 % to 5.00 %
2.	Cast Iron	Carbon	ASTM E 1019: 2011	1.25 % to 4.5 %
		Silicon	IS 12308 (Part 6): 1991 (RA 2006) ASTM E 351: 2013	0.10 % to 6.00 % 0.10 % to 6.00 %
		Manganese	IS 12308 (Part 10): 1991 (RA 2006) ASTM E 351: 2013	0.1 % to 7.00 % 0.1 % to 3.50 %
		Sulphur	ASTM E 1019: 2011	0.005 % to 0.25 %
		Phosphorus	IS 12308 (Part 5): 1991 (RA 2006) ASTM E 351: 2013	0.01 % to 0.50 % 0.02 % to 0.90 %
		Chromium	IS 12308 1997 (Part 8) (RA 2007) ASTM E 351: 2013	0.10 % to 2.80 % 0.006 % to 30.00 %
		Nickel	IS 12308 (Part 7): 1991 (RA 2006) ASTM E 351: 2013 ASTM E 351: 2013 AAS	0.50 % to 36.00 % 0.10 % to 36.00 % 0.005 % to 0.10 %
		Molybdenum	ASTM E 351: 2013	0.01 % to 1.00 %
		Copper	IS 12308 (Part 12): 1992 ASTM E 351: 2013	0.01 % to 0.50 % 0.03to 7.50%

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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 (%)
Location: 1				
3.	Stainless Steels	Carbon	ASTM E 1019: 2011	0.010 % to 1.50 %
		Silicon	ASTM E 353: 93 (2006)	0.05 % to 4.00 %
		Manganese	ASTM E 353: 93 (2006)	0.10 % to 2.00 %
		Sulphur	ASTM E 1019: 2011	0.002 % to 0.050 %
		Phosphorus	ASTM E 353: 93 (2006)	0.020 % to 0.50 %
		Chromium	ASTM E 353: 93 (2006)	0.10 % to 35.00 %
		Nickel	ASTM E 353: 93 (2006)	0.10 % to 48.0 %
		Molybdenum	ASTM E 353: 93 (2006)	0.01 % to 3.0 %
		Copper	ASTM E 353: 93 (2006)	0.01 % to 5.00 %
4.	Aluminium & Its Alloys	Silicon	IS 504 (Part 1): 2002 ASTM E 34: 2011	0.30 % to 15 % 0.050 % to 20.00 %
		Copper	IS 504 (Part 3): 2002 ASTM E 34: 2011	Above 0.10 % 0.50 % to 20.00 %
		Magnesium	IS 504 (Part 6): 2002	0.01 % to 12.00 %
		Iron	IS 504 (Part 2): 2002	Above 0.10 %
		Manganese	IS 504 (Part 5): 2002	0.10 % to 1.50 %
		Zinc	IS 504 (Part 6): 2002	Above 0.10 %
		Chromium	IS 504 (Part 8): 2002	0.01 % to 1.00 %

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Location: 1				
5.	Aluminium & Its Alloys	Nickel	IS 504 (Part 7): 2002	0.1 % to 4 %
		Lead	IS 504 (Part 1): 2002	0.05 % to 0.3 %
		Aluminium	WI/CHE/43/Al1 (AAS)	50.00 % to 99.95 %
	Copper & Its Alloys	Copper	IS 3685: 1966 (RA 2006) ASTM E 478: 2008	10.00 % to 99.00 %
			IS 4027 (Part 1): 1987 (RA 2006)	40 % to 85 %
			IS 440: 1964 (2006)	99.20 % to 99.99 %
			ASTM E 53: 07	99.75 % to 99.95 %
		Phosphorous	ASTM E 478: 2008	0.05 % to 0.60 %
		Tin	IS 440: 1964 (RA 2006)	0.10 % to 20.00 %
		Lead	IS 4027 (Part 1): 1987 (RA 2006)	2.00 % to 30.00 %
			IS 3685: 1966 (RA 2006)	2.00 % to 35.00 %
			ASTM E478: 2008	2.00 % to 30.00 %
		Zinc	IS 3685: 1966 (RA 2006)	1.00 % to 50.00 %
			ASTM E 478: 2008, ASTM E 53: 07	1.00 % to 50.00 %
		Silicon	IS 3685 1966: 2006	0.1 % to 1.0 %
			IS 4027 (Part10): 2000	0.1 % to 1.0 %

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Location: 1				
6.	Copper & Its Alloys	Iron	IS 4027 (Part 8): 1991 (RA 2007)	0.05 % to 6 %
			IS 440: 1964 (RA 2006)	0.05 % to 6 %
			IS 3685: 1966 (RA 2006)	0.05 % to 6 %
		Aluminium	IS 3685: 1966 (RA 2006)	0.1 % to 12.0 %
		Manganese	IS 3187: 1965	0.1 % to 6 %
	Nickel & Cobalt Alloys	Nickel	IS 3685: 1966 (RA 2006)	0.5 % to 10 %
			IS 440: 1964 (RA 2006)	0.10 % to 5 %
			ASTM E 478: 2008	4.00 % to 50.0 %
		Aluminium	ASTM E 1473: 09	0.005 % to 0.7 %
		Carbon	ASTM E 1019: 2011	0.001 % to 1.10 %
		Chromium	ASTM E 1473: 09	0.10 % to 33 %
		Cobalt	ASTM E 1473: 09	0.10 % to 75.00 %
		Copper	ASTM E 1473: 09	0.01 % to 35 %
		Iron	ASTM E 1473: 09	0.01 % to 50.0 %
		Manganese	ASTM E 1473: 09	0.01 % to 3.00 %
		Molybdenum	ASTM E 1473: 09	0.01 % to 30.0 %
		Niobium	ASTM E 1473: 09	0.01 % to 6.0 %
		Nickel	ASTM E 1473: 09	0.10 % to 99.99 %
		Phosphorus	ASTM E 1917: 08	0.002 % to 0.08 %

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Location: 1				
	Nickel & Cobalt Alloys	Sulphur	ASTM E 1019: 2011	0.002 % to 0.10 %
		Silicon	ASTM E 1473: 09	0.01 % to 5 %
		Titanium	ASTM E 1473: 09	0.01 % to 5 %
		Tungsten	ASTM E 1473: 09	0.01 % to 18 %
		Vanadium	ASTM E 1473: 09	0.01 % to 2.00 %
		Zinc	WI/CHE/43/Ni1 (AAS) Issue No. 3, date. 27.01.09	0.05 % to 1.00 %
7.	Coated Material	Zinc coating	IS 6745: 1972 (RA 2006)	10 gm/m ² to 1000 gm/m ²
		Tin coating	IS 1327: 1988 (RA 2006) IS 1359: 92 (RA 2006)	10 gm/m ² to 1000 gm/m ²
		Phosphate Zinc Coating	IS 3618: 1966 (RA 2007)	20 gm/m ² to 1000 gm/m ²
		Adherence of Coating test	IS 9567: 2001 (RA 2007)	Qualitative
		Continuity of Coating Test	IS 9567: 2001 (RA 2007)	Qualitative
		Preece Test	IS 2633: 2006	Qualitative
		Knife Test	IS 2629: 1985 (RA 2001)	Qualitative
8.	Low Alloy & Carbon Steel (by Spectrometry)	Carbon	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.01 % to 1.50 % 01 % to 1.50 %
		Silicon	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.05 % to 2.00 %

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Location: 1				
	Low Alloy & Carbon Steel (by Spectrometry)	Manganese	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.05 % to 2 % 0.010 % to 2.0 %
		Phosphorus	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.005 % to 1.10 %
		Sulphur	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.005 % to 1.10 %
		Chromium	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.05 % to 5.0 %
		Nickel	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.05 % to 5.0 %
		Aluminium	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.005 % to 0.15 %
		Copper	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.010 % to 0.50 %
		Titanium	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.01 % to 0.25 %
		Molybdenum	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.001 % to 1.5 %
		Vanadium		0.001 % to 1.0 %
		Niobium	IS 8811: 1998 (RA 2006) ASTM E 415: 2008	0.008 % to 0.085 %

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Location: 1				
9.	Stainless Steels (by Spectrometry)	Carbon	ASTM E 1086: 2008	0.005 % to 0.25 %
		Silicon	ASTM E 1086: 2008	0.01 % to 0.90 %
		Manganese	ASTM E 1086: 2008	0.01 % to 2.0 %
		Phosphorus	ASTM E 1086: 2008	0.003 % to 0.15 %
		Sulphur	ASTM E 1086: 2008	0.003 % to 0.065 %
		Chromium	ASTM E 1086: 2008	17.0 % to 23.0 %
		Nickel	ASTM E 1086: 2008	7.5 to 13.0
		Copper	ASTM E 1086: 2008	0.01 % to 0.30 %
		Molybdenum	ASTM E 1086: 2008	0.01 to 3.0
		Titanium	ASTM E 1086: 2008	0.05 % to 0.50 %
		Nitrogen	ASTM E 1086: 2014	0.010 % to 0.20 %
10.	Austenitic & Ferritic Steel (by Spetrometry)	Carbon	IS 9879: 98	0.005 % to 0.30 %
		Silicon	IS 9879: 98	0.1 % to 2.0 %
		Manganese	IS 9879: 98	0.1 % to 5.0 %
		Phosphorus	IS 9879: 98	0.002 % to 0.10 %
		Sulphur	IS 9879: 98	0.002 % to 0.10 %
		Chromium	IS 9879: 98	5.00 % to 20.0 %

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Location: 1				
11.	Austenitic & Ferritic Steel (by Spetrometry)	Nickel	IS 9879: 98	2.0 % to 15.0 %
		Copper	IS 9879: 98	0.05 % to 0.50 %
		Molybdenum	IS 9879: 98	0.01 to 4.0 %
		Nitrogen	IS 9879: 1998	0.01 % to 0.20 %
		Carbon	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 2.50 %
		Silicon	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.010 % to 1.50 %
		Manganese	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 2.00 %
		Phosphorus	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 0.060 %
		Sulphur	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 0.050 %
		Chromium	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 15.00 %
		Molybdenum	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 12.00 %
	Tool Steel (by Spectrometry)	Vanadium	WI/CHE/03b Issue No.3, Issue date: 27.02.2009 Rev. date: 25.02.2015	0.002 % to 5.00 %
		Tungsten	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.015 % to 25.00 %

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Location: 1				
12.	Tool Steel (by Spectrometry)	Copper	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.002 % to 1.00 %
		Cobalt	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.08 % to 30.00 %
		Titanium	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.002 % to 1.00 %
		Nickel	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 5.00 %
		Aluminium	WI/CHE/03b Issue No.3, Issue date: 27.02.2009	0.005 % to 0.40 %
	Copper Base (by Spectrometry)	Tin	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.001 % to 15.00 %
		Phosphorus	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.005 % to 1.20 %
		Lead	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.0001 % to 12.00 %
		Nickel	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.0002 % to 35.00 %
		Zinc	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.010 % to 15.00 %
		Copper	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	50.00 % to 99.99 %
		Silicon	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.005 % to 7.00 %

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Location: 1				
	Copper Base (by Spectrometry)	Iron	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.001 % to 6.50 %
		Aluminium	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.002 % to 12.00 %
		Antimony	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.005 % to 0.50 %
		Bismuth	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.0001 % to 5.00 %
		Sulphur	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.002 % to 0.15 %
		Cadmium	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.0005 % to 1.50 %
		Chromium	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.001 % to 2.00 %
		Silver	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.001 % to 1.00 %
		Cobalt	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.005 % to 3.50 %
		Beryllium	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.050 % to 2.50 %
		Zirconium	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.002 % to 0.50 %
		Manganese	WI/CHE/03d Issue No. 3, Issue date: 27.01.2009	0.0007 % to 5.00 %

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Location: 1				
13.	Aluminium and Its Alloys	Silicon	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.07 % to 16.0 %
		Copper	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.001 % to 5.50 %
		Magnesium	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.03 % to 5.40 %
		Zinc	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.002 % to 5.70 %
		Nickel	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.005 % to 2.60 %
		Tin	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.03 % to 7.50 %
		Iron	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.2 % to 0.50 %
		Manganese	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.001 % to 1.2 %
		Chromium	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.001 % to 0.23 %
		Lead	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.04 % to 0.6 %
		Titanium	IS 11035: 84 (RA 2010) ASTM E 1251: 2011	0.001 % to 0.12 %

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Location: 1				
14.	Titanium & Alloys (by Spectrometry)	Titanium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	50 % to 99.90 %
		Aluminium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.005 % to 8.00 %
		Chromium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.005 % to 7.00 %
		Copper	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 2.5 %
		Iron	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.005 % to 2.5 %
		Molybdenum	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 8.00 %
		Silicon	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 1.00 %
		Vanadium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.005 % to 10.00 %
		Manganese	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 2.00 %
		Zirconium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 5.00 %
		Tin	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 2.5 %
		Niobium	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.01 % to 5.00 %

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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 (%)
Location: 1				
15.	Titanium & Alloys (by Spectrometry)	Nickel	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.005 % to 0.50 %
		Tungsten	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 0.50 %
		Carbon	WI/CHE/03f Issue No.3, Issue date: 27.01.2009	0.001 % to 0.025 %
	Nickel Base (by Spectrometry)	Carbon	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.002 % to 0.25 %
		Sulphur	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.001 % to 0.13 %
		Manganese	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.001 % to 3.00 %
		Silicon	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.001 % to 5.00 %
		Iron	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 20.00 %
		Molybdenum	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 35.00 %
		Copper	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.001 % to 35.00 %
		Aluminium	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 5.00 %
		Cobalt	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.002 % to 20.00 %

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Location: 1				
	Nickel Base (by Spectrometry)	Niobium	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.050 % to 5.00 %
		Titanium	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.001 % to 5.00 %
		Tungsten	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 15.00 %
		Nickel	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	40.0 % to 99.0 %
		Chromium	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 35.00 %
		Tantalum	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.010 % to 5.00 %
		Phosphorus	WI/CHE/03c Issue No.3, Issue date: 27.01.2009	0.005 % to 0.050 %
	16. Austenitic and Stainless Steel (by PMI)	Carbon	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Silicon	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Manganese	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Phosphorus	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative

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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 (%)
Location: 1				
	Austenitic and Stainless Steel (by PMI)	Sulphur	WI/PMI/02, PMI Arc met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Chromium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Nickel	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Cobalt	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Aluminium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Copper	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Titanium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Vanadium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Molybdenum	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Niobium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative

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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 (%)
Location: 1				
17.	Low Alloy Steels (by PMI)	Carbon	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Silicon	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Manganese	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Phosphorus	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Sulphur	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Chromium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Molybdenum	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Nickel	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative

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Location: 1				
	Low Alloy Steels (by PMI)	Aluminium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Copper	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Vanadium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Tungsten	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
		Titanium	WI/PMI/02 PMI Arc-met 8000 (Spark) Issue No.3, date: 27.01.2009	Qualitative
18.	Metals by XRF			
a)	Ferrous	Chromium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Manganese	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Nickel	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative

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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 (%)
Location: 1				
	Ferrous	Molybdenum	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Vanadium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Niobium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Columbium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Titanium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
b)	Copper Alloys	Tin	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Manganese	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Nickel	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative

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Location: 1				
c)	Copper Alloys	Iron	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Zinc	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Lead	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
	Nickel Alloys	Chromium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Iron	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Cobalt	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Tungsten	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Molybdenum	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative

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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 (%)
Location: 1				
d)	Nickel Alloys	Titanium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Copper	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
	Titanium Alloys	Iron	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Molybdenum	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
e)	Cobalt Alloys	Chromium	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Iron	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Cobalt	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative Segregation
		Tungsten	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative
		Molybdenum	ASTM E 1476: 94 (2010) XRF - For Material Verification and Sorting	Qualitative

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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 (%)
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Location: 1

19.	Restriction of Hazardous Substances [ROHS]	Cadmium	IEC 62321: 2005	10 ppm to 500 ppm
		Mercury	IEC 62321: 2005	10 ppm to 2000 ppm
		Chromium	IEC 62321: 2005	10 ppm to 2000 ppm
		Lead	IEC 62321: 2005	10 ppm to 2000 ppm
		Bromine	IEC 62321: 2005	10 ppm to 2000 ppm
20.	Bulk Materials Including Loose Fill Insulations, Acoustic and Thermal Sprays, Pipe and Boiler Wraps, Plasters, Paints, Flooring Products, Roofing Materials, Gaskets, Cementitious Products	Identification / Detection of Asbestos	NIOSH Method 9002, Issue 2 NMAM (4 th Edition): 15/08/1994 HSG 248: 2006 (PLM Method)	Detected/Not Detected (Min Detection Limit <0.15 m/m)

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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 (%)
Location: 2				
1.	Low Alloy & Carbon Steel (by Spectrometry)	Carbon	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.01 % to 1.5 %
		Silicon	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.05 % to 2.0 %
		Manganese	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.01 % to 2.0 %
		Phosphorus	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.005 % to 0.10 %
		Sulphur	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.005 % to 0.10 %
		Chromium	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.02 % to 5.0 %
		Nickel	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.02 % to 5.0 %
		Aluminium	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.005 % to 0.15 %
		Molybdenum	IS 8811: 98 (RA 2006) ASTM E 415: 2008	0.01 % to 1.50 %
		Vanadium	IS 8811: 98 (RA 2006) ASTM E 415: 2014	0.001 % to 1.00 %
		Copper	IS 8811: 98 (RA 2006) ASTM E 415: 2014	0.01 % to 1.50 %

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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 (%)
Location: 2				
2.	Stainless Steels (by Spectrometry)	Carbon	IS 9879: 98 ASTM E 1086: 2014	0.005 % to 0.30 %
		Silicon	IS 9879: 98 ASTM E 1086: 2014	0.1 % to 2.0 %
		Manganese	IS 9879: 98 ASTM E 1086: 2014	0.01 % to 5.0 %
		Phosphorus	IS 9879: 98 ASTM E 1086: 2014	0.002 % to 0.15 %
		Sulphur	IS 9879: 98 ASTM E 1086: 2014	0.002 % to 0.10 %
		Chromium	IS 9879: 98 ASTM E 1086: 2014	5.00 % to 23.0 %
		Nickel	IS 9879: 98 ASTM E 1086: 2014	2.0 % to 15.0 %
		Copper	IS 9879: 98 ASTM E 1086: 2014	0.01 % to 0.50 %
		Molybdenum	IS 9879: 98 ASTM E 1086: 2014	0.01 % to 3.0 %
		Titanium	IS 9879: 98 ASTM E 1086: 2014	0.05 % to 0.50 %
		Nitrogen	IS 9879: 98 ASTM E 1086: 2014	0.010 % to 0.20 %

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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 (%)
Location: 2				
3.	Tool Steel (by Spectrometry)	Carbon	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 2.50 %
		Silicon	WI/CHE/03b Issue No.3, date:25.02.2015	0.010 % to 1.50 %
		Manganese	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 2.00 %
		Phosphorus	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 0.060 %
		Sulphur	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 0.050 %
		Chromium	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 15.00 %
		Molybdenum	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 12.00 %
		Vanadium	WI/CHE/03b Issue No.3, date:25.02.2015	0.002 % to 5.00 %
		Tungsten	WI/CHE/03b Issue No.3, date:25.02.2015	0.015 % to 25.00 %
		Copper	WI/CHE/03b Issue No.3, date:25.02.2015	0.002 % to 1.00 %
		Cobalt	WI/CHE/03b	0.08 % to 30.00 %

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Location: 2				
4	Tool Steel (by Spectrometry)	Titanium	WI/CHE/03b Issue No.3, date:25.02.2015	0.002 % to 1.00 %
		Nickel	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 5.00 %
		Aluminium	WI/CHE/03b Issue No.3, date:25.02.2015	0.005 % to 0.40 %
	Copper Base (by Spectrometry)	Tin	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 15.00 %
		Phosphorus	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.005 % to 1.20 %
		Lead	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.0001 % to 12.00 %
		Nickel	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.0002 % to 35.00 %
		Zinc	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 15.00 %

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Location: 2				
	Copper Base (by Spectrometry)	Copper	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	50.00 % to 99.99 %
		Silicon	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.005 % to 7.00 %
		Iron	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001% to 6.50 %
		Aluminium	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.002 % to 12.00 %
		Antimony	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.005 % to 0.50 %
		Bismuth	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.0001 % to 5.00 %

Laboratory **ELCA Laboratories, Plot No. A-444, Road No. 37, MIDC, Wagle Indl. Area, Tal. & Dist. Thane, Maharashtra**
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Location 2 : W-361, TTC Industrial Area, MIDC, Rabale, Navi Mumbai, Maharashtra

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

Discipline **Chemical Testing** **Issue Date** **15.04.2015**

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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 (%)
Location: 2				
	Copper Base (by Spectrometry)	Sulphur	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.002 % to 0.15 %
		Cadmium	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.0005 % to 1.50 %
		Chromium	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 2.00 %
		Silver	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 1.00 %
		Cobalt	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.005 % to 3.50 %
		Beryllium	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.050 % to 2.50 %

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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 (%)
Location: 2				
5	Copper Base (by Spectrometry)	Zirconium	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.002 % to 0.50 %
		Manganese	WI/CHE/03d Issue No. 3 Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.0007 % to 5.00 %
	Aluminium and Its Alloys	Silicon	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.07 % to 16.0 %
		Copper	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.001 % to 5.50 %
		Magnesium	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.03 % to 5.40 %
		Zinc	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.002 % to 5.70 %
		Nickel	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.005 % to 2.60 %
		Tin	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.03 % to 7.50 %
		Iron	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.2 % to 0.50 %

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Location: 2				
6	Aluminium and Its Alloys	Manganese	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.001 % to 1.2 %
		Chromium	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.001 % to 0.23 %
		Lead	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.04 % to 0.6 %
		Titanium	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	0.001 % to 0.12 %
		Aluminium	ASTM E 1251: 2011 IS 11035: 84 (RA 2010)	Remainder
	Nickel base (by Spectrometry)	Carbon	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.002% to 0.25 %
		Sulphur	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 0.13 %
		Manganese	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 3.00 %

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Location: 2				
	Nickel base (by Spectrometry)	Silicon	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 5.00 %
		Iron	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 20.00 %
		Molybdenum	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 35.00 %
		Copper	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 35.00 %
		Aluminium	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 5.00 %
		Cobalt	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.002 % to 20.00 %
		Niobium	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.050 % to 5.00 %

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Location: 2				
	Nickel base (by Spectrometry)	Titanium	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.001 % to 5.00 %
		Tungsten	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 15.00 %
		Nickel	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	40.0 % to 99.0 %
		Chromium	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 35.00 %
		Tantalum	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.010 % to 5.00 %
		Phosphorous	WI/CHE/03c Issue No. 3, Issue Date: 27/01/2009, Revision 1 dtd.25/02/2015	0.005 % to 0.050 %

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