

Laboratory Chemical & Physical Testing Laboratory, Electrotherm (India) Ltd.,
Survey No. 325, NH 8, Samakhiyali, Taluka Bhachau, Dist. Kutch, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 04.09.2015

Certificate Number T-1953 **Valid Until** 03.09.2017

Last Amended on - **Page** 1 of 3

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	METALS & ALLOYS			
1.	Ferro Chrome	Chromium	IS 1559: 1961 (RA 1997)	50 % to 75 %
2.	Ferro Manganese	Manganese	IS 1559: 1961 (RA 1997)	65 % to 90 %
3.	Silicon Manganese	Carbon	IS 1559: 1961 (RA 1997)	0.1 % to 2.28 %
		Silicon	IS 1559: 1961 (RA 1997)	10 % to 25 %
		Manganese	IS 1559: 1961 (RA 1997)	50 % to 75 %
4.	Ferro Silicon	Silicon	IS 1559: 1961 (RA 1997)	15 % to 75 %
		Carbon	IS 1559: 1961 (RA 1997)	0.05 % to 1.5 %
5.	Sponge Iron (DRI) Produced by Direct Reduce iron process	Metallic Iron	IS 15774: 2007	60 % to 90 %
6.	Plain Carbon Steel, Low Alloy Steel	Carbon	ASTM-E415: 2014	0.08 % to 1.03 %
		Manganese		0.30 % to 1.49 %
		Silicon		0.043 % to 1.72 %
		Sulfur		0.005 % to 0.070 %
		Phosphorus		0.010 % to 0.074 %
		Chromium		0.055 % to 2.00 %
		Nickel		0.060 % to 2.00 %

Laboratory Chemical & Physical Testing Laboratory, Electrotherm (India) Ltd.,
Survey No. 325, NH 8, Samakhiyali, Taluka Bhachau, Dist. Kutch, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 04.09.2015

Certificate Number T-1953 **Valid Until** 03.09.2017

Last Amended on - **Page** 2 of 3

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Plain Carbon Steel, Low Alloy Steel	Molybdenum	ASTM-E415: 2014	0.04 % to 0.98 %
		Copper		0.10 % to 0.38 %
		Aluminum		0.010 % to 0.074 %
		Vanadium		0.005 % to 0.500 %
7.	Stainless Steel	Carbon	IS 9879: 1998	0.014 % to 0.153 %
		Manganese		0.23 % to 1.38 %
		Silicon		0.21 % to 0.48 %
		Sulfur		0.005 % to 0.035 %
		Phosphorus		0.010 % to 0.037 %
		Chromium		11.50 % to 18.00 %
		Nickel		0.26 % to 10.2 %
		Molybdenum		0.10 % to 2.78 %
		Aluminum		0.013 % to 0.026 %
		Vanadium		0.035 % to 0.100 %
	Nitrogen	0.050 % to 0.20 %		
II. ORES & MINERALS				
1.	Limestone & Dolomite	Loss On Ignition	IS 1760 (Part 1): 1991 (RA 2001)	30 % to 50 %
		Silica	IS 1760 (Part 2): 1991 (RA 2001)	0.1 % to 20 %

Laboratory Chemical & Physical Testing Laboratory, Electrotherm (India) Ltd.,
Survey No. 325, NH 8, Samakhiyali, Taluka Bhachau, Dist. Kutch, Gujarat

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 04.09.2015

Certificate Number T-1953 **Valid Until** 03.09.2017

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

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Limestone & Dolomite	Calcium Oxide	IS 1760 (Part 3): 1991 (RA 2001)	10 % to 56 %
		Magnesium Oxide	IS 1760 (Part 3): 1991 (RA 2001)	1.0 % to 52 %
2.	Iron Ore	Total Iron	IS 1493 (Part 1): 1981 (RA 1996)	45 % to 70 %
III. COAL, COKE & OTHER SOLID FUEL				
1.	Coal/Coke	Total Moisture	IS 1350 (Part 1): 1992	1 % to 50 %
		Inherent Moisture	IS 1350 (Part 1): 1992	0.1 % to 20 %
		Volatile Matter	IS 1350 (Part 1): 1992	0.1 % to 50 %
		Ash	IS 1350 (Part 1): 1992	0.1 % to 50 %
		Fixed Carbon	IS 1350 (Part 1): 1992 (By calculation)	30 % to 90 %

-X-X-X-X-X-X-X-X-X-X-X-X-