

Laboratory	Inspection Survey & Surveillance (India) Pvt. Ltd., 327, R. N. Guha Road, Dum Dum, Kolkata, West Bengal		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	06.07.2015
Certificate Number	T-0539	Valid Until	05.07.2017
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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
	Plain Carbon Steels, Low Alloy Steels	Tungsten	ASTM E-415: 99a (RA 2005)	0.01 % to 2.00 %
		Boron	IS 8811: 98	0.001 % to 0.010 %
		Nitrogen	INSURVEY/ WI-5.4/18/01 INSURVEY/WI-5.4/18/04	0.003 % to 0.033 %
		Calcium		0.001 % to 0.006 %
2.	Stainless Steels / High Alloy Steels & High Manganese Steels	Carbon	IS 9879: 98	0.01 % to 2.50 %
		Silicon	ASTM E-1086/08	0.01 % to 2.50 %
		Manganese	IS 228 (Part 23): 13 INSURVEY/ WI-5.4/18/02 INSURVEY/ WI-5.4/18/05	0.01 % to 14.50 %
		Sulphur		0.001 % to 0.10 %
		Phosphorus		0.001 % to 0.10 %
		Nickel		0.01 % to 40.00 %
		Chromium		0.01 % to 27.00 %
		Molybdenum		0.01 % to 4.00 %
		Copper		0.01 % to 3.00 %
		Aluminium		0.01 % to 1.00 %
		Vanadium		0.01 % to 0.13 %
		Titanium		0.01 % to 2.00 %
Boron		0.01 % to 1.00 %		

Rini Narayan
Convenor

N. Venkateswaran
Program Manager

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3.	Stainless Steels / High Alloy Steels & High Manganese Steels	Cobalt	IS 9879: 98 ASTM E-1086/08	0.01 % to 9.00 %
		Niobium	IS 228 (Part 23): 13 INSURVEY/ WI-5.4/18/02	0.01 % to 2.00 %
		Tungsten	INSURVEY/ WI-5.4/18/05	0.02 % to 18.00 %
		Nitrogen		0.01 % to 0.60 %
		Tantalum		0.02 % to 0.50 %
	Aluminium and Aluminium Alloys	Copper	ASTM E-1251: 2004 IS 7658: 75 (RA 2010)	0.01 % to 6.00 %
		Silicon	IS 11035: 85 (RA 2010) INSURVEY/WI-5.4/18/03	0.01 % to 16.00 %
		Iron	INSURVEY/ WI-5.4/18/06	0.01 % to 1.50 %
		Magnesium		0.01 % to 1.70 %
		Nickel		0.01 % to 0.50 %
		Manganese		0.01 % to 1.00 %
		Chromium		0.01 % to 0.50 %
		Zinc		0.01 % to 0.40 %
Lead		0.01 % to 0.20 %		
Tin		0.01 % to 0.40 %		
Titanium		0.01 % to 0.20 %		
Vanadium		0.01 % to 0.02 %		

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4.	Aluminium and Aluminium Alloys	Zirconium	ASTM E-1251: 2004	0.01 % to 0.03 %
		Stroncium	IS 7658: 75 (RA 2010)	0.01 % to 0.14 %
		Calcium	IS 11035: 85 (RA 2010) INSURVEY/WI-5.4/18/03 INSURVEY/ WI-5.4/18/06	0.001 % to 0.03 %
		Lithium		0.001 % to 0.05 %
		Bismuth		0.003 % to 0.3 %
		Cadmium		0.005 % to 0.02 %
	Copper and Copper Alloys	Tin	BS-EN15079: 07 ASTM E1507: 98 (RA 2003)	0.01 % to 14.0 %
		Lead	INSURVEY/WI-5.4/18/04 INSURVEY/ WI-5.4/18/07	0.003 % to 22.0 %
		Nickel		0.01 % to 6.00 %
		Manganese		0.01 % to 6.00 %
		Iron		0.001 % to 6.60 %
		Zinc		0.01 % to 45.00 %
		Phosphorous		0.005 % to 1.10 %
Silicon		0.01 % to 1.50 %		
Aluminium		0.015 % to 12.00 %		
Arsenic		0.005 % to 0.50 %		
Silver		0.005 % to 0.50 %		

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	Copper and Copper Alloys	Magnesium	BS-EN15079: 07	0.001 % to 0.20 %
		Sulphur	ASTM E1507: 98 (RA 2003) INSURVEY/WI-5.4/18/04	0.005 % to 0.15 %
		Cadmium	INSURVEY/ WI-5.4/18/07	0.005 % to 0.12 %
		Antimony		0.005 % to 0.50 %
		Zirconium		0.005 % to 0.30 %
		Selenium		0.005 % to 0.07 %
		Tellurium		0.005 % to 0.07 %
5.	Plain Carbon Steels, Low Alloy Steels	Carbon	IS 228 (Part 1 & Part 87) (RA 2008)	0.05 % to 1.50 %
		Silicon	IS 228 (Part 8 & Part 89) (RA 2009)	0.05 % to 3.00 %
		Manganese	IS 228 (Part 2): 1987 (RA 2008) IS 12308 (Part 10): 91 (RA 2006)	0.10 % to 2.50 %
		Sulphur	IS 228 (Part 9): 1989 (RA 2009)	0.01 % to 0.30 %
		Phosphorus	IS 228 (Part 3): 1987 (RA 2008)	0.01 % to 0.15 %
		Nickel	IS 228 (Part 5): 1987 (RA 2009)	0.10 % to 5.00 %
		Chromium	IS 228 (Part 6): 1987 (RA 2009)	0.10 % to 4.00 %

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	Copper and Copper Alloys	Phosphorous	IS 4027 (Part 3): 1987 (RA 2006) IS 3685: 1966 (RA 2006)	0.01 % to 1.00 %
		Silicon	IS 3685: 1966 (RA 2006) IS 4027 (Part 10): 2000 (RA 2006)	0.10 % to 1.00 %
		Aluminium	IS 3685: 1966 (RA 2006)	0.10 % to 12.00 %
9.	Aluminium and Aluminium Alloys	Copper	IS 504 (Part 3): 2002	0.10 % to 6.00 %
		Silicon	IS 504 (Part 1): 2002	0.30 % to 15.00 %
		Iron	IS 504 (Part 2): 2002	0.10 % to 2.00 %
		Magnesium	IS 504 (Part 6): 2002	0.05 % to 12.00 %
		Nickel	IS 504 (Part 7): 2002	0.10 % to 1.00 %
		Manganese	IS 504 (Part 5): 2002	0.10 % to 1.50 %
		Chromium	IS 504 (Part 8): 2002	0.05 % to 1.00 %
		Zinc	IS 504 (Part 4): 2002	0.10 % to 4.00 %
II.	ORES & MINERALS			
1.	Iron Ore	Total Iron	IS 1493 (Part 1): 1981 (RA 2006)	30.00 % to 70.00 %
		Silica	IS 1493 (Part 1): 1981 (RA 2006)	0.10 % to 10.00 %
		Phosphorous	IS 1493 (Part 1): 1981 (RA 2006)	0.01 % to 0.10 %

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	Iron Ore	Alumina	IS 1493 (Part 1): 1981 (RA 2006) IBM June 2004 Para 1.2.1.4	0.01 % to 0.10 %
2.	Limestone and Dolomite	Loss on Ignition	IS 1760 (Part 1): 1991 (RA 2006)	20.00 % to 50.00 %
		Silica	IS 1760 (Part 2): 1991 (RA 2006)	0.10 % to 20.00 %
		Calcium Oxide	IS 1760 (Part 3): 1992 (RA 2006)	10.00 % to 55.00 %
		Magnesium Oxide	IS 1760 (Part 3): 1992 (RA 2006)	0.20 % to 40.00 %
III.	METALLIC COATING S AND TREATMENT SOLUTIONS			
1.	Metallic Coatings			
a.	Metallic & Coated Products	Corrosion Test	ISO 9227: 1990 ASTM.B 117 / 2011	Qualitative
b.	Anodic Coatings on Aluminium and Its Alloys	Anodizing	IS 6012: 1992 (RA 2010)	5.00 µm to 50.00 µm
c.	Zinc Coatings on Steel Products	Mass of Coating	IS 6745: 1972 (RA 2010) IS 1367 (Part 13): 1983 (RA 2011) BS 729/71/Appx.A/Nov,86 IS 1573: 1986 (RA 2010)	20.00 gm/m ² to 2000.00 gm/m ² 10.00 gm/m ² to 500.00 gm/m ²

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	Zinc Coatings on Steel Products	Thickness of Coating	IS 1573: 1986 (RA 2010) Appx E	0.70 Micron to 75.00 Micron
			IS 3203: 1982 (RA 2010) (By Elcometer)	5.00 Micron to 300.00 Micron
		Uniformity of coating	IS 2633: 1986 (RA 2010) BS.729/71/Appx.B/Nov,1986	Qualitative
		Adhesion Test	IS 2629: 1985 (RA 2010)	Detectibility of adhesiveness of Zinc coating
d.	Metallic & Coated Products	Corrosion Test	ISO 9227/90 ASTM.B 117	Qualitative
e.	Anodic Coatings On Aluminium And Its Alloys	Anodizing	IS 6012: 1992 (RA 2010)	5.00 µm to 50.00 µm
IV.	RUBBER & SYNTHETIC RUBBER			
1.	Moulded and Extruded Rubber & Polymeric Products	Water Absorption	IS 13360 (Part 8) /Sec.1/97 (RA 2008) IS 2221: 1962 (RA 2010) IS 5382: 1985 IS 2036: 1995 (RA 2010) ISO 62/82 E IRS T-44/95	1.0 % to 5.0 %

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	Moulded and Extruded Rubber & Polymeric Products	Glass content	IS 13411: 1992 (RA 2008)	5 % to 80 %
		Glass Filler	IRST-44/95	
		Total Filler	ISO 1172/75	5 % to 80 %
		Specific Gravity/ Density	IS 10192: 1982 (RA 2010)	0.98 gm/cc to 5 gm/cc
			IS 3400 (Part 9): 2003 (RA 2010)	
			IS 2221: 1962 (RA 2010)	
			IS 13360 (Part 3) / Sec.1/95/ (RA 2008)	
		Density	IS 2712: 1998	0.98 gm/cc to 5 gm/cc
		Inherent Viscosity	IRS. S-40/84/cl-VI	1.0 dl/gm to 1.50 dl/gm
		Flammability/ Burning Test	IS 10810 (Part 53 & Part 84) (RA 2011)	Qualitative
	RDSO.C-8409			
	RDSO.MP.0.2800.14 (Riv-0.01)/July-2003			
	Determination of effect of liquid	IS 3400 (Part 6): 2012	(-) 10 % to +80 %	
		IS 13360 (Part 8) Sec.3/97		
	Ash Content	IS 3400 (Part 22 & Part 84) (RA 2008)	5 % to 50 %	

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