Laboratory	**Lucid Laboratories Pvt. Ltd., B-1/A T. I. E, Phase- II, Balanagar, Hyderabad, Telangana**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Mechanical Testing**	**Issue Date**	**24.04.2015**
Certificate Number	**T-1529**	**Valid Until**	**23.04.2017**
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.	**MECHANICAL PROPERTIES OF MATERIALS**			
1.	**Tensile Test on Ferrous & Non Ferrous Material**	Tensile Strength (0.2% Proof Stress, Proof load, Modulus of elasticity)	IS 1608: 2005 IS 1786: 2008 (RA 2013) ASTM A370: 2014	0.1 kN to 600 kN
		Yield Strength	ASTM E 8: 2013a	0.2 kN to 600 kN
		% Elongation,		1% to 70%
		% Reduction in Area,		2% to 70%
		Mass per Running meter		0.01 kg to 20 kg
2.	**Shear Test on Ferrous Material**	Shear Strength	IS 5242: 1979	0.1 kN to 200 kN Bush Size: 5.0, 8.0, 12.0, 16.0 mm.
3.	**Hardness Test on Ferrous & Non Ferrous Material**	Rockwell	IS 1586: 2000 IS 1586 (Part 1,2,3): 2012 ASTM E 18: 2014 ASTM A 370: 2014	HRB 10 to 100 HRC 20 to 70
		Brinell	IS 1500: 2005	(20 HBW 2.5 to 450 HBW 2.5) /187.5
		Vickers	IS 1501: 2002 IS 1501 (Part 1,2,3,4): 2013 ASTM E 92: 82 (03)	20 HV5 to 400 HV5 100 HV30 to 900 HV30
4.	**Bend Test on Ferrous Material**	Bend Test Rebent Test	IS 1599: 2012 IS 1786: 2008 (RA 2013) ASTM A 370: 2014	Qualitative (Mandrels –dia 11, 12 16, 21, 32, 44; 50, 120, 140, 166 & 168) mm

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5.	**Flattening Test on Tubes**	Flattening Test	IS 2328: 2005	Diameter 50 mm to 300 mm
6.	**Impact Test on Ferrous & Non ferrous Material**	Izod Impact Test	IS 1598: 1977	2 J to 168 J, Room Temp.
		Charpy Impact Test-V notch	IS 1757: 1988	2 J to 300 J, Room Temp
		Charpy Impact Test- U-notch	IS 1499: 1977	2 J to 300 J, Room Temp
7.	**Corrosion Tests on Ferrous, Coated and plated Material**	Neutral Salt Spray Test	IS 9844: 1981 ASTM B 117: 2011	Qualitative
		Salt Fog Test	JSS 55555: 2000 Revision 2 JSS 0256-01: 1992 MIL-STD-810G	Qualitative
		Inter Granular Attack (Corrosion) IGC Test A& E IGC Test B IGC Test C IGC Test F	ASTM A262: 2013	Visual & Microscopy Minimum 0.100 mm month
II.	**METALLOGRAPHY TEST**			
1.	**Ferrous & Non Ferrous Material**	Macro Structural Analysis	ASTM E340: 2013 ASTM E381: 2012 IS 13015: 1991	Qualitative (10 x & 20 x)
		Micro Structural Analysis	IS 7739 (Part 1,3, 4, 6, 7, 8) : 1975 IS 7739 (Part 5 & 11): 1976. ASTM E 3: 2011, ASTM E 407: 2007, B 657: 2011 ASM Handbook Vol. 9	25.6 x, 50.4 x, 78.75 x, 100 x, 200 x, 250 x,500 x, 800 x, 1000 x, 1250 x, 1600 x & 2000 x

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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
	Ferrous & Non Ferrous Material	Grain Size by comparison Method except copper and copper Alloys	ASTM E 112: 1996 IS 4748: 2009	ASTM No. 1 to 10 at 100 x
		Non metallic Inclusion Rating	IS 4163: 2004/ ASTM E45: 05e3	0.5 to 5.0 at 100 x
2.	**Cast Iron**	Graphite Flake - Type & size By comparison Method.	ASTM A247: 2010 & IS 7754: 1975	Class 1 to 8 at 100 x
		Decarburization depth by Microscope Method	ASTM E 1077: 2014	10 µm to 1000 µm at 100 x
		Estimation of total case depth by microscopic Method	IS 6416: 1988	10 µm to 1000 µm at 100 x
3.	**Measurement of Coating Thickness by Microscopic Method on Ferrous & Non Ferrous Material**	Mass of Zinc Coating	IS 6745: 1972	5 g/m² to 600 g/m²
		Plating thickness by Microscope Method.	IS 3203: 1982	1 µ to 1000 µ at 100 x
		Metal and oxide Coating thickness by Microscope Method	ASTM B 487: 1985	1 µ to 1000 µ at 100 x
		Anodic Coating thickness by microscopic Method.	IS 5523: 1983	1 µ to 1000 µ at 100 x
		Electroplated Zinc Coating thickness by Microscope Method	IS 1573: 1986 Appendix E	1 µ to 1000 µ at 100 x

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