Laboratory	**Prompt Metallurgical Services, Sharma Chamber, Flat No. 5, Nal Stop, Karve Road, Pune, Maharashtra** **Location 1:Sharma Chamber, Flat No. 5, Nal Stop, Karve Road, Pune, Maharashtra** **Location 2:B-8 & B-9, Samartha Complex, Sr. No. 37/5, Dhankawadi, Pune, Maharashtra**		
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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		CHEMICAL TESTING		
LOCATION 1				
I.	**METAL & ALLOYS**			
1.	**Ferrous Metals & Alloys- Low Alloy Steel & Free Cutting Steels**	C	ASTM-E-415-2017 for Carbon & Low Alloy Steel JIS G 1253:2013 for Free Cutting Steel and Iron & Steel	0.001% to 1.10%
		Si		0.002% to 3.00%
		Mn		0.003% to 2.00%
		Cr		0.02% to 2.25%
		Mo		0.01% to 6.00%
		Ni		0.02% to 5.00%
		S		0.001% to 0.50%
		P		0.001% to 0.10%
		V		0.004% to 0.50%
		Co		0.008% to 0.18%
		Al		0.01% to 1.50%
		Cu		0.01% to 0.50%
		W		0.20% to 1.00%
		Ti		0.03% to 0.20%
		Pb		0.04% to 0.40%
		B		0.0003% to 0.11%
2.	**Ferrous Metals & Alloys- Stainless Steel, Tool Steel, HCHCr**	C	ASTM-E-1086-2014 for Stainless Steel JIS G 1253-2013 for Iron & Steel, Tool Steel and HCHCr	0.01% to 2.50%
		Si		0.02% to 3.00%
		Mn		0.01% to 11.00%
		Cr		0.01% to 29.00%
		Mo		0.05% to 10.00%
		Ni		0.05% to 25.00%
		S		0.001% to 0.45%

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		P		0.001% to 0.15%
		V		0.01% to 3.00%
		Co		0.01% to 12.00%
		Cu		0.01% to 5.00%
		W		0.30% to 20.00%
		Ti		0.05% to 0.80%
		Nb		0.01% to 0.50%
3.	**Copper & Copper Alloys**	Zn	BS EN-15079:2015	0.01% to 45.00%
		Pb		0.01% to 17.00%
		Sn		0.01% to 12.00%
		Al		0.01% to 12.00%
		Mn		0.01% to 5.00%
		Fe		0.01% to 6.00%
		Ni		0.01% to 7.00%
		Si		0.01% to 1.00%
		Sb		0.01% to 1.60%
		As		0.005% to 0.30%
		P		0.01% to 1.00%
4.	**Aluminium & Alluminium Alloys**	Zn	ASTM-E-1251-11	0.02% to 5.70%
		Pb		0.02% to 0.25%
		Sn		0.01% to 0.40%
		Mn		0.01% to 1.20%
		Fe		0.01% to 1.00%
		Ni		0.005% to 2.30%
		Si		0.07% to 16.00%
		Cr		0.005% to 0.40%
		Cu		0.01% to 6.00%
		Mg		0.03% to 5.40%
		Ti		0.001% to 0.18%

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		Sr		0.02% to 0.10%

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		MECHANICAL TESTING		
LOCATION 1				
I.	**MECHANICAL PROPERTIES OF MATERIAL**			
1.	**Steel & Cast Iron Specimen & Components**	Brinell Hardness Test	IS 1500 (Part 1)-2013	(95 to 500) HBW 2.5 mm dia /187.5 kg load
		Rockwell Hardness Scale-A	IS 1586 (Part 1)-2012	(55 to 88) HRA
		Rockwell Hardness Scale-B	IS 1586 (Part 1)-2012	(30 to 100) HRBW
		Rockwell Hardness Scale-C	IS 1586 (Part 1)-2012	(20 to 65) HRC
		Vickers Hardness (HV1)	IS 1501(Part 1)-2013	(100 to 900) HV1
2.	**Copper & copper alloys**	Rockwell Hardness Scale-B	IS 1586 (Part 1)-2012	(20 to 100) HRBW
		Brinell Hardness Test	IS 1500 (Part 1)-2013	(90 to 250) HBW 2.5 mm Dia/ 62.5 kg Load
		Vicker Hardness (HV1)	IS-1501(Part 1)-2013	(50 to 300) HV1
3.	**Aluminum & Aluminum alloys**	Rockwell Hardness Scale-B	IS 1586 (Part 1)-2012	(30 to 120) HRBW
		Brinell Hardness Test	IS 1500 (Part 1)-2013	(30 to 150) HBW 2.5 mm Dia/ 62.5 Kg Load
		Vicker Hardness (HV1)	IS 1501(Part 1)-2013	(50 to 400) HV1
II.	**METALLOGRAPHY TEST**			

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	**Steel & Cast Iron Specimen & Components**	Microstructure-	ASM Handbook Vol-9:2004 Atlas of Microstructure of Industrial Alloys	Magnification (100 X, 200X, 500X, 1000 X)
		Determination of Graphite Type & Size in Cast Iron	IS-7754-1975 (RA 2012) For Cast Iron.	100 X
		Grain Size	IS-4748-2009 (Comparison Method)	100 X Grain Size (1 to 10)
		Non Metallic Inclusion Rating	IS 4163-2004 (RA 2012) ASTM-E-45 - 2013	100 X
		Effective Case Depth	IS 6416-1988 (RA 2012) (By Drop of Hardness)	400 X 0.1 mm to 5 mm

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		MECHANICAL TESTING		
LOCATION 2				
I.	**MECHANICAL PROPERTIES OF MATERIAL**			
1.	**Ferrous Material (Steel & Cast Iron), Aluminum Alloy, Copper Alloy**	Ultimate Tensile Strength	IS 1608:2005 (RA 2011)	0.02 kN to 400 kN Least Count:20 N 100 MPa to 2800 MPa
		Yield Strength		100 MPa to 1500 MPa
		% Elongation		1% to 60%
		% Reduction in Area		20% to 80%
		Bend Test	IS 1599:2012 (RA 2015)	Qualitative (30 mm Diameter Mandrel)

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