

Laboratory	Becquerel Industries Pvt. Ltd., A-36, MIDC, Butibori, Nagpur, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	24.09.2015
Certificate Number	T-1677	Valid Until	23.09.2017
Last Amended on	-	Page	1 of 6

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.	Plain Carbon, Low Alloy Steel	C	ASTM E 415: 2014	0.04 % to 1.44 %
		Si	ASTM E 415: 2014	0.10 % to 1.89 %
		Mn	ASTM E 415: 2014	0.21 % to 1.85 %
		P	ASTM E 415: 2014	0.009 % to 0.081 %
		S	ASTM E 415: 2014	0.007 % to 0.076 %
		Cr	ASTM E 415: 2014	0.041 % to 1.122 %
		Ni	ASTM E 415: 2014	0.021 % to 0.55 %
		Mo	ASTM E 415: 2014	0.009 % to 0.545 %
		V	ASTM E 415: 2014	0.004 % to 0.546 %
		Cu	ASTM E 415: 2014	0.02 % to 0.47 %
		Nb	ASTM E 415: 2014	0.001 % to 0.022 %
		Ti	ASTM E 415: 2014	0.002 % to 0.006 %
		Al	ASTM E 415: 2014	0.013 % to 0.363 %
		N	ASTM E 415: 2014	0.004 % to 0.010 %
		Sn	ASTM E 415: 2014	0.004 % to 0.013 %
		B	ASTM E 415: 2014	0.0002 % to 0.00033 %
		CO	ASTM E 415: 2014	0.004 % to 0.017 %

Jitendra B. Vispute
Convenor

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Certificate Number	T-1677	Valid Until	23.09.2017
Last Amended on	-	Page	2 of 6

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Stainless Steel	C	ASTM E 1086: 2014	0.018 % to 0.118%
		Si	ASTM E 1086: 2014	0.483 % to 1.650%
		Mn	ASTM E 1086: 2014	0.314 % to 1.92%
		P	ASTM E 1086: 2014	0.019 % to 0.028%
		S	ASTM E 1086: 2014	0.021 % to 0.063%
		Cr	ASTM E 1086: 2014	15.13 % to 27.192%
		Ni	ASTM E 1086: 2014	9.644 % to 22.924%
		Mo	ASTM E 1086: 2014	0.629 % to 2.322%
		Cu	ASTM E 1086: 2014	0.097 % to 0.201%
		N	ASTM E 1086: 2014	0.014 % to 0.070%
		Co	ASTM E 1086: 2014	0.046 % to 0.058%
3.	Cast Iron	C	ASTM E 1999: 2011	2.574 % to 4.048%
		Si	ASTM E 1999: 2011	1.035 % to 1.293%
		Mn	ASTM E 1999: 2011	0.468 % to 1.131%
		P	ASTM E 1999: 2011	0.078 % to 0.267%
		S	ASTM E 1999: 2011	0.015 % to 0.245%
		Cr	ASTM E 1999: 2011	0.579 % to 1.562%

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Last Amended on **-** **Page** **3 of 6**

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4.	Aluminium Alloy	Si	ASTM E 1251: 2011	0.582 % to 8.459%
		Fe	ASTM E 1251: 2011	0.630 % to 1.958%
		Cu	ASTM E 1251: 2011	1.17 % to 4.774%
		Mn	ASTM E 1251: 2011	0.014 % to 0.271%
		Mg	ASTM E 1251: 2011	0.261 % to 2.783%
		Cr	ASTM E 1251: 2011	0.135 % to 0.22%
		Zn	ASTM E 1251: 2011	1.026 % to 5.192%
		Ti	ASTM E 1251: 2011	0.133 % to 0.231%
		Ni	ASTM E 1251: 2011	0.011 % to 0.442%
		Pb	ASTM E 1251: 2011	0.097 % to 0.264%
		Bi	ASTM E 1251: 2011	0.027 % to 0.077%
		Co	ASTM E 1251: 2011	0.020 % to 0.035%
		V	ASTM E 1251: 2011	0.011 % to 0.020%
5.	Copper Base Alloys	Zn	BSEN 15079: 2007	4.905 % to 27.10 %
		Pb	BSEN 15079: 2007	0.177 % to 6.721 %
		Sn	BSEN 15079: 2007	1.503 % to 4.543 %
		P	BSEN 15079: 2007	0.003 % to 0.165 %

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Last Amended on **-** **Page** **4 of 6**

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	Copper Base Alloys	Mn	BSEN 15079: 2007	0.001 % to 0.018 %
		Fe	BSEN 15079: 2007	0.088 % to 0.124 %
		Ni	BSEN 15079: 2007	0.027 % to 0.163 %
		As	BSEN 15079: 2007	0.014 % to 0.081 %
		Sb	BSEN 15079: 2007	0.013 % to 0.292 %
		Bi	BSEN 15079: 2007	0.022 % to 0.102 %
		Al	BSEN 15079: 2007	0.0005 % to 0.10 %
		Ag	BSEN 15079: 2007	0.003 % to 0.107 %
6.	Metal (TMT, SS, MS, Low Alloys Steel)	Carbon	IS 228 (Part 1): 1987 (RA 2002)	0.05 % to 0.5%
		Sulphur	IS 228 (Part 9): 1989 (RA 2004)	0.01 % to 0.25%
		Silicon	IS 228 (Part 8): 1989 (RA 2004)	0.05 % to 2.0%
		Manganese	IS 228 (Part 2): 1987(RA 2002)	0.1 % to 3.0%
		Phosphorus	IS 228 (Part 3): 1987(RA 2002)	0.01 % to 0.5%
		Nickel	IS 228 (Part 5): 1987(RA 2002)	0.1 % to 20.0%
		Molybdenum	IS 228 (Part 7): 1987 (RA 2005)	1.0 % to 5.0%
		Chromium	IS 228 (Part 6): 1987 (RA 2005)	0.1 % to 20.0%

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Certificate Number	T-1677	Valid Until	23.09.2017
Last Amended on	-	Page	5 of 6

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II. COAL, COKE & OTHER SOLID FUELS				
1.	Coal	Ash	IS 1350 (Part 1) (RA 2001)	5.0 % to 60.0%
		Total Moisture	IS 1350 (Part 1) (RA 2001)	1.0 % to 40.0 %
		Volatile Matter	IS 1350 (Part 1) (RA 2001)	10.0 % to 60.0 %
		Total Sulphur	IS 1350 (Part 3) (RA 2001)	0.1 % to 10.0 %
		Gross Calorific Value	IS 1350 (Part 2) (RA 2001)	2500 kcal/kg to 9000 kcal/kg
III. BUILDING MATERIALS				
1.	Cement (OPC, PPC, PSC)	SiO ₂	IS 4032: 1985 (RA 2009)	5.0 % to 30%
		Al ₂ O ₃ (R ₂ O ₃ , Fe ₂ O ₃)	IS 4032: 1985 (RA 2009)	0.5 % to 15%
		Fe ₂ O ₃	IS 4032: 1985 (RA 2009)	0.5 % to 10%
		CaO	IS 4032: 1985 (RA 2009)	1.0 % to 70%
		MgO	IS 4032: 1985 (RA 2009)	0.5 % to 10%
		Sulphuric Anhydride As SO ₃	IS 4032: 1985 (RA 2009)	0.1 % to 10%
		Loss on Ignition	IS 4032: 1985 (RA 2009)	0.5 % to 10%
IV. WATER				
1.	Construction Water	Total Dissolve Solids	IS 3025 (Part 16): 1984 (RA 2002)	2000 mg/l to 10000 mg/l
		Volatile Residue	IS 3025 (Part 18): 1984 (RA 2002)	100 mg/l to 2000 mg/l
		Fixed Residue	IS 3025 (Part 18): 1984 (RA 2002)	1000 mg/l to 20000 mg/l

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Last Amended on **-** **Page** **6 of 6**

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	Construction Water	Total Suspended Solid	IS 3025 (Part 17): 1986 (RA 2002)	50 mg/l to 3000 mg/l
		pH Value	IS 3025 (Part 11): 1983 (RA 2002) Clause. 2	5 to 14.0
		Chloride	IS 3025 (Part 32): 1988 (RA 2003) Clause. 2	50 mg/l to 5000 mg/l
		Sulphate	IS 3025 (Part 24): 1986 (RA 2003)	50 mg/l to 500 mg/l
		Volume of 0.02 N H ₂ SO ₄ Used to Neutralize 100ml of Sample Using Mixed Indicator (Alkainity)	IS 3025 (Part 23): 1986 (RA 2003) Clause. 8.1	1 ml to 50 ml
		Volume of 0.02 N NaOH Used to Neutralize 100ml of Sample Using Pheonolpthalein Indicator (Acidity)	IS 3025 (Part 23): 1986 (RA 2003) Clause. 8.1	0.1 ml to 10 ml

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