

Laboratory **Quality Control Laboratory, Shyam Metalics & Energy Limited, Vill. Pandloi, P.O. Lapanga, Sambalpur, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7491**

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Validity **29.06.2018 to 28.06.2020**

Last Amended on **26.04.2019**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

I.	ORES AND MINERALS			
1.	Sponge Iron	Metallic Iron	IS 15774 SMEL/WI/DRI/05 Issue No 1	75 % to 85 %
		Phosphorous	IS 1493	0.040 % to 0.075 %
		Carbon	IS 228 (Part 1)	0.05 % to 0.20 %
2.	Chromites Ore	SiO ₂	IS 12667 (Part 1)	4.0 % to 14.0 %
II.	METALS AND ALLOYS			
1.	Carbon and Low Alloy Steel	Carbon	IS 8811	0.10 % to 0.30 %
		Manganese		0.40 % to 0.80 %
		Silicon		0.10 % to 0.30 %
		Phosphorous		0.030 % to 0.110 %
		Sulphur		0.025 % to 0.055 %
2.	High Carbon Ferro-Chrome	Silicon	IS 13452 (Part 1)	1 % to 4.0 %
		Phosphorous	IS 13452 (Part 7)	0.1 % to 0.050 %
		Sulphur	IS 13452 (Part 4)	0.1 % to 0.050 %
III.	SOLID FUELS			
1.	Coke	Ash	IS 1350 (Part 1)	5.0 % to 25.0 %
		Volatile	IS 1350 (Part 1)	0.50 % to 5.0 %

Ram Ashray
Convenor

Birendra Prasad Murmu
Program Manager

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	TMT Bars (8mm to 32 mm Dia)	Yield Stress	IS 1608	50 N/mm ² to 650 N/mm ² (4 kN to 400 kN Load)
		Tensile Strength	IS 1608	50 N/mm ² to 750 N/mm ² (4 kN to 400 kN Load)
		Elongation	IS 1608	5% to 80%
		Total Elongation at maximum force	IS 1608	3% to 20%
		Bend Test	IS 1599	Qualitative (Mandrel Dia. 16, 20, 24, 30, 32, 36, 40, 48, 60, 64, 75, 80, 84, 96, 100, 112, 128, 140 & 160 mm)
		Rebend Test	IS 1786	Qualitative (Mandrel Dia. 32, 40, 50, 72, 84, 96, 112, 120, 140, 150, 168, 175, 192, 196 & 224 mm)
		TS/YS	IS 1786 IS 1608	1 to 1.3
		Sectional Weight	IS 1786	0.30 kg/m to 10.0 kg/m
		Ar Value (Mean area of ribs per unit length)	IS 1786	0.8 to 10 mm ² /mm
2.	Structural Steel (Section)	Yield Stress	IS 1608	50 N/mm ² to 650 N/mm ² (4 kN to 400 kN Load)
		Tensile Strength	IS 1608	50 N/mm ² to 750 N/mm ² (4 kN to 400 kN Load)
		Elongation	IS 1608	5% to 80%
		Bend Test	IS 1608	Qualitative (Mandrel Dia. 9.6, 10.0, 10.6, 11.4, 12.0, 12.4,

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				13.8, 16.0, 20.0, 24.0, 32.0 mm)
3.	Pipe	Yield Stress	IS 1608	50 N/mm ² to 650 N/mm ² (4 kN to 400 kN Load)
		Tensile Strength	IS 1608	50 N/mm ² to 750 N/mm ² (4 kN to 400 kN Load)
		Elongation	IS 1608	5% to 80%
		Flattening Test	IS 2328	Qualitative
		Drift Expansion Test	IS 2335	Qualitative (Conical Mandrel 30° & 45°)

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