Laboratory **Central Metallurgical Testing Unit, Foundry Forge Plant, Heavy Engineering Corporation Limited, Plant Plaza Road, Dhurwa, Ranchi, Jharkhand**

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

Certificate Number **TC-7292**   **Page 1 of 2**

Validity **28.05.2018 to 27.05.2020** **Last Amended on --**

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

CHEMICAL TESTING

I.	METALS AND ALLOYS			
1.	Carbon and Low Alloy Steel	C	ASTM E 415	0.02 % to 1.1 %
		Mn		0.03 % to 2.0 %
		Si		0.02 % to 1.54 %
		P		0.006 % to 0.085 %
		S		0.001 % to 0.055 %
		Cr		0.007 % to 8.14 %
		Ni		0.006 % to 5.0 %
		Mo		0.007 % to 1.3 %
		V		0.003 % to 0.30 %
		Cu		0.006 % to 0.50 %
		Al		0.006 % to 0.093 %
		As		0.003 % to 0.10 %
		Sb		0.006 % to 0.027 %
		Sn		0.005 % to 0.061 %
		Co		0.006 % to 0.20 %

Naveen Jangra
Convenor

Alok Jain
Program Director

Laboratory	**Central Metallurgical Testing Unit, Foundry Forge Plant, Heavy Engineering Corporation Limited, Plant Plaza Road, Dhurwa, Ranchi, Jharkhand**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**TC-7292**
Validity	**28.05.2018 to 27.05.2020**

Last Amended on --

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

MECHANICAL TESTING

I.	**MECHANICAL PROPERTIES OF METALS**			
1.	**Ferrous Materials, Alloys & Products Welds & Welded Test Specimens**	Tensile Test (Room Temperature) Tensile Strength 0.2% Proof Strength % of Elongation % or Reduction in Area	IS 1608 ASTM A 370	100 MPa to 1500 MPa 100 MPa to 1200 MPa 2 % to 60 % 5 % to 90 %
		Elevated Temperature Tensile Test Tensile Strength 0.2% Proof Strength % of Elongation % or Reduction in Area	ASTM E 21	100 MPa to 1500 MPa 100 MPa to 1200 MPa 2 % to 60 % 5 % to 90 %
		Charpy Impact ("V" Notch)	ASTM E 23	2 J to 298 J (–) 50 °C to ambient temp.

Naveen Jangra
Convenor

Alok Jain
Program Director