

**Laboratory** CHW Forge Testing Laboratory, Achheja, P.O. Dujana, G.T. Road, Phase-II, Greater Noida, Gautam Budh Nagar, Uttar Pradesh

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

**Certificate Number** TC-6354 (in lieu of T-3604)

Page 1 of 2

**Validity** 24.09.2017 to 23.09.2019

Last Amended on 27.09.2017

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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**MECHANICAL TESTING**

I.	<b>MECHANICAL PROPERTIES OF METALS</b>			
1.	<b>Metals: Ferrous &amp; Non Ferrous</b>	Ultimate Tensile Strength 0.2% Proof Strength Elongation Reduction Of Area	ASTM A 370-2017 ASTM E8-2016a ISO 6892-1:2016	200 MPa to 1500 MPa 100 MPa to 1200 MPa 5 % to 70 % 5 % to 80 %
2.	<b>Metals Ferrous</b>	Charpy Impact Test  'V' Notch	ASTM A 370-2017. ASTM E 23-2016b, ISO 148-1: 2016	2 Joules to 240 Joules (Least Count 2 J) (At Room Temp. Upto 101 °C)
		Bend Test	ASTM E290-14	Qualitative (Mandrel Dia: 6 mm, 12 mm, 19 mm, 30 mm & 35 mm) Upto 200 kN
		Brinell Hardness Test	ASTM A370-2017 ASTM E10-2017	130 HBW to 385 HBW (10/3000)
II.	<b>METALLOGRAPHY TEST</b>			
1.	<b>Forgings/ Castings Metals: Austenitic Stainless Steel</b>	Inter Granular Corrosion Test Practice A, B, C, E	ASTM A 262-2015 Practice A Practice B Practice C Practice E	Qualitative (250x, 500x) 2.18 to 1000 Mils/Year 2.18 to 1000 Mils/Year Qualitative
2.	<b>Metals: Duplex Stainless Steel</b>	Pitting Corrosion Test	ASTM G 48-11, METHOD A	Qualitative 0.0005 g/m <sup>2</sup> to 20 g/m <sup>2</sup>
		Detecting Detrimental Intermetallic Phase	ASTM A923-14 Method A Method B Method C	Qualitative 2 J to 240 J Temperature:40°C & -46°C 1 Mdd to 20 Mdd

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3.	<b>Metals: Ferrous</b>	Estimation of Average Grain Size By Comparison Method	ASTM E112-13	Qualitative (Magnification 100x) (Grain Size Upto 10 No.)
		Determination Of Inclusion Rating Method A (Worst Field)	ASTM E 45-2013	A, B, C, D (Thin & Thick ) 0.5 to 3.0, Qualitative (Magnification 100x)
		Macrostructural Analysis	ASTM E381-2017	Qualitative Rating Upto 5, (Magnification 10x, 20x)
		Volume Fraction By Point Count	ASTM E562-2011	2 % to 60 %
4.	<b>Metals: Ferrous &amp; Non Ferrous</b>	Microstructural Analysis	ASM HANDBOOK- VOL.7, 8 <sup>TH</sup> EDITION, ASTM E3-2011 & ASTM E407-2011	Qualitative (Magnification 50x, 100x, 200x, 250x, 400x, 500x)