

**Laboratory****BMT Instrumentation & Laboratories, Unit No. 20, Extension-I, Building-I, Rajprabha Udyog Nagar, Golani Naka, Waliv, Vasai (E), Thane, Maharashtra**

Location 1: Unit No. 20, Extension-I, Building-I, Rajprabha Udyog Nagar, Golani Naka, Waliv, Vasai (E), Thane, Maharashtra

Location 2: Unit No. 10, Extension-I, Building-I, Rajprabha Udyog Nagar, Golani Naka, Waliv, Vasai (E), Thane, Maharashtra

**Accreditation Standard ISO/IEC 17025: 2005****Certificate Number TC-6546 (in lieu of T-2811)****Page 1 of 6****Validity 15.11.2017 to 14.11.2019****Last Amended on 03.11.2018**

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**

<b>LOCATION-1</b>				
<b>I.</b>	<b>METALS &amp; ALLOYS</b>			
<b>1.</b>	<b>Low Alloy &amp; Carbon Steel</b>	Carbon	ASTM E415	0.01 % to 1.0 %
		Silicon	IS 8811	0.01 % to 1.5 %
		Manganese		0.015 % to 1.3 %
		Phosphorus		0.007 % to 0.07 %
		Sulphur		0.01 % to 0.10 %
		Chromium		0.01 % to 2.8 %
		Nickel		0.02 % to 4.5 %
		Aluminium		0.01 % to 0.02 %
		Copper		0.05 % to 0.25 %
		Vanadium		0.005 % to 0.50 %
		Molybdenum		0.025 % to 1.50 %
		Nitrogen		0.004 % to 0.012 %
<b>2.</b>	<b>Austenitic &amp; Ferritic Stainless Steel</b>	Carbon	ASTM E 1086	0.015 % to 0.18 %
		Silicon	IS 9879	0.3 % to 1.00 %
		Manganese		0.4 % to 2.10 %
		Phosphorus		0.01 % to 0.060 %
		Sulphur		0.002 % to 0.170 %
		Chromium		10.00 % to 23.50 %
		Nickel		0.1 % to 29.00 %
		Copper		0.040 % to 1.80 %
		Molybdenum		0.016 % to 4.80 %
		Aluminium		0.008 % to 0.060 %
		Titanium		0.105 % to 0.500 %

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		Vanadium		0.029 % to 0.12 %
		Cobalt		0.015 % to 0.35 %
		Nitrogen		0.008 % to 0.10 %
3.	High Manganese Stainless Steel	Carbon	ASTM E2209	0.05 % to 0.12 %
		Silicon		0.35 % to 4.0 %
		Manganese		5.00 % to 11.50 %
		Phosphorus		0.02 % to 0.03 %
		Sulphur		0.005 % to 0.025 %
		Chromium		10.50 % to 17.00 %
		Molybdenum		0.30 % to 0.650 %
		Nickel		1.5 % to 5.7 %
		Copper		0.1 % to 0.35 %
		Nitrogen		0.1 % to 0.30 %
4.	Aluminium & Aluminium Alloys	Silicon	ASTM E1251	0.02 % to 16.0 %
		Copper	IS 11035	0.04 % to 6.00 %
		Manganese		0.02 % to 0.55 %
		Zinc		0.1 % to 0.90 %
		Nickel		0.01 % to 0.25 %
		Tin		0.005 % to 0.20 %
		Iron		0.05 % to 1.20 %
		Magnesium		0.02 % to 1.15 %
		Chromium		0.025 % to 0.06 %
		Lead		0.02 % to 0.35 %
		Titanium		0.02 % to 0.25 %
		Vanadium		0.005 % to 0.022 %
5.	Copper & Copper Alloy	Zinc	BS EN 15079	0.02 % to 39.00 %
		Lead		0.06 % to 11.5 %

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		Tin		0.02 % to 12.0 %
		Phosphorous		0.006 % to 0.1 %
		Manganese		0.015 % to 0.5 %
		Nickel		0.015 % to 1.7 %
		Silicon		0.0015 % to 0.2 %
		Cadmium		0.004 % to 0.02 %
		Antimony		0.015 % to 0.13 %
		Arsenic		0.002 % to 0.12 %
		Bismuth		0.02 % to 0.11 %
		Aluminium		0.01 % to 1.20 %
		Iron		0.015 % to 0.15 %
		Sulphur		0.015 % to 0.08 %

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**Prince Garg**  
 Convenor

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**Birendra Prasad Murmu**  
 Program Manager

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<b><u>MECHANICAL TESTING</u></b>				
<b><u>LOCATION-1</u></b>				
<b>I.</b>	<b>MECHANICAL PROPERTIES OF METALS</b>			
<b>1.</b>	<b>Ferrous, Non-Ferrous Metals &amp; Alloys/Welds in Metals</b>	Vickers Hardness	IS 1501 (Part 1) ASTM E92 ASTM A370	50 HV <sub>5</sub> to 600 HV <sub>5</sub> 50 HV <sub>10</sub> to 600 HV <sub>10</sub> 200 HV <sub>30</sub> to 750 HV <sub>30</sub>
		Rockwell Hardness	ASTM A 370 ASTM E 18 IS 1586 (Part 1) ISO 6508-1	50 HRBW to 100 HRBW 20 HRC to 70 HRC

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<b>LOCATION-2</b>				
<b>I.</b>	<b>MECHANICAL PROPERTIES OF METALS</b>			
<b>1.</b>	<b>Ferrous, Non-Ferrous Metals &amp; Alloys/Welds in Metals</b>	Tensile Test Tensile Stress Yield Stress 0.2 % Proof Stress Elongation Reduction in Area	IS 1608 ASTM A370 ASTM E8/E8M BS EN 6892-1 ASTM B557 IS 2825 BS EN ISO 15614-1 EN ISO 4136 API 1104 ASME (Section IX)	20 kN to 1000 kN 100 N/mm <sup>2</sup> to 3000 N/mm <sup>2</sup> 100 N/mm <sup>2</sup> to 3000 N/mm <sup>2</sup> 100 N/mm <sup>2</sup> to 3000 N/mm <sup>2</sup> 2 % to 80 % 2 % to 90 %
		Bend	IS 1599 IS 2329 ASTM A370 ASTM E290 ISO 5173 IS 2825 ASME Section IX	Qualitative (Mandrel Diameter: 24, 30, 36, 40, 48, 50, 60, 84, 100, 112, 124, 125, 128, 150, 175, 196, 224 mm)
<b>2.</b>	<b>Ferrous, Non-Ferrous Metals &amp; Alloys Tube/Pipe</b>	Flattening	IS 2328 ASTM A370 ASTM A1016 ASTM A999	Qualitative (6.0 mm OD to 600 mm OD)
		Flaring	IS 2335 ASTM A 370 ASTM B 153 ASTM A 1016	Qualitative (ID upto 150 mm, Mandrel Size: 60°)

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		Pin Test	ASTM B153	Qualitative (ID upto 100 mm, Mandrel Size: 60°)
3.	<b>Ferrous, Non-Ferrous Metals &amp; Alloys Nuts</b>	Proof Load For Nuts	IS 1367 (Part 6) ASTM A194 ASTM A370	Qualitative (20 kN to 1000 kN)