

Laboratory **Modern Malleables Limited (Department of Laboratory Services),
42/1, Netaji Subhas Road, Liluah, Howrah, West Bengal**

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

Certificate Number **TC-6871**

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Validity **07.02.2018 to 06.02.2020**

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
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CHEMICAL TESTING

I.	METALS & ALLOYS			
1.	Carbon Steels	Carbon	ASTM E 415 IS 8811	0.15 % to 0.50 %
		Silicon		0.15 % to 0.35 %
		Manganese		0.10 % to 2.0 %
		Phosphorous		0.01 % to 0.10 %
		Sulphur		0.01 % to 0.05 %
2.	Aluminium Alloy	Silicon	ASTM E 1251	1.0 % to 13 %
		Manganese		0.10 % to 2.0 %
		Magnesium		0.10 % to 2.0 %
		Iron		0.40 % to 0.70 %
II.	METALLIC COATINGS & TREATMENT SOLUTIONS			
1.	Zinc Coated Iron & Steel	Uniformity of Coating	IS 2633	Qualitative (1 DIPS to 6 DIPS)
		Thickness of Coating	MML/SOP/03 (By Elkometer)	40 µm to 500 µm

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MECHANICAL TESTING

I.	MECHANICAL PROPERTIES OF METALS			
1.	Insulator Hardware and Accessories Fittings for Overhead Transmission Line Above >1000V	Dimension Checked	IS 2486 (Part 1) IS 2486 (Part 2)	4 mm to 700 mm
		Brinell Hardness	IS 1500	136 HBW to 650 HBW
		Tensile Strength	IS 2121 (Part 1, Part 2 & Part 4) IS 2486 (Part 1)	20 kN to 400 kN
		Test on Locking Device	IS 2486 (Part 4)	5 kg to 50 kg
		Slip Strength	IS 2121 (Part 2) IS 2486 (Part 1)	10 kN to 1200 kN
		Compression and Tensile on Spacer/ Spacer Damper	IS 10162	5 kN to 15 kN

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ELECTRICAL TESTING

I.	TRANSMISSION LINE EQUIPMENT & ACCESSORIES			
1.	D/End Clamp for Conductor/ Tension Clamp	DC Resistance	IS 2486 (Part 1)	1 $\mu\Omega$ to 19.99 m Ω
		Heating Cycle	IS 2486 (Part 1) IEC 61284 (for class A only)	Minimum Temperature Rise: Ambient + 40 °C Current :10 A to 3000 A
2.	Mid Span Joint	DC Resistance	IS 2121 (Part 2)	1 $\mu\Omega$ to 19.99 m Ω
		Heating Cycle	IS 2121 (Part 2) IEC 61284 (for class A only)	Minimum Temperature Rise: Ambient + 40 °C Current :10 A to 3000 A
3.	Al. Repair Sleeve	DC Resistance	IS 2486 (Part 1) IEC 61284	1 $\mu\Omega$ to 19.99 m Ω
4.	P.A Rod	DC Resistance / Conductivity	IS 2121 (Part 1) IEC 61284	1 $\mu\Omega$ to 19.99 m Ω
5.	T-Connector	DC Resistance	IS 2121 (Part 4)	1 $\mu\Omega$ to 19.99 m Ω
		Heating Cycle		Minimum Temperature Rise: Ambient + 40 °C Current :10 A to 3000 A
6.	Mid Span and Tension Clamp for Earth Wire	DC Resistance	IS 2121 (Part 3)	1 $\mu\Omega$ to 19.99 m Ω