

Laboratory **Technical Associates Ltd. (Dept. of Transformer Testing), B-7, Eldeco Sidcul Industrial Park, Sitarganj, U.S. Nagar, Uttarakhand**

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

Certificate Number **TC-5595 (in lieu of T-3307)**

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Validity **08.05.2017 to 07.05.2019**

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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ELECTRICAL TESTING

I.	TRANSFORMERS AND REACTORS			
1.	Distribution / Power Transformer 5.5 kV to 220 kV & 6.3 kVA to 200 MVA, 3 Phase	Voltage ratio, Polarity & check of phase Displacement	IS 2026 (Part 1) IEC 60076-1	1.0 to 1000
		Winding resistance	IS 2026 (Part 1) IEC 60076-1	1 mΩ to 1100 Ω
		Insulation resistance	IS 2026 (Part 1) IEC 60076-1	1 MΩ to 500 GΩ
		Capacitance	IS 2026 (Part 1) IEC 60076-1	100 pF to 16000 pF
		Tan Delta	IS 2026 (Part 1) IEC 60076-1	0.0007 to 5.00
		No load loss	IS 2026 (Part 1) IEC 60076-1	0.5 kW to 100 kW
		Current	IS 2026 (Part 1) IEC 60076-1	0.5 A to 25 A
		Short circuit, impedance & load loss	IS 2026 (Part 1) IEC 60076-1	200 W to 800 kW, Impedance: 1% to 60%
		Inducted AC voltage test (without partial discharge)	IS 2026 (Part 3) IEC 60076-3	10 kV to 400 kV
		Separate source AC with stand voltage test (applied potential test)	IS 2026 (Part 3) IEC 60076-3	2 kV to 275 kV
		Zero Sequence	IS 2026 (Part 1) IEC 60076-1	Impedance: 1% to 100%
	Lightning impulse (LI) Voltage Front Time Tail Time	IS 2026 (Part 3) IEC 60076-3	20 kVp to 1600 kVp 160 kJ	
	Temperature Rise (Oil rise & winding rise)	IS 2026 (Part 2) IEC 60076-2	10°C to 100 °C	
	Acoustic Noise level	IS 2026 (Part 10): 2009 & IS 13964: 2009 IEC 60076-10: 2016 & NEMA TR-1	40 dB to 90 dB	

Neeraj Verma
Convenor

N. Venkateswaran
Program Director

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		Harmonics of the no load current	IS 2026 (Part 1) IEC 60076-1	3 rd to 25 th harmonics
		ON load tap changer	IS 2026 (Part 1) IEC 60076-1	Qualitative Test
		Power taken by fans and oil pump motors	IS 2026 (Part 1) IEC 60076-1	1 kW to 20 kW
		Magnetic circuit (Isolation test)	As per CBIP publication 317: April 2013 guidelines	1 kW to 3 kV
		Magnetic Balance		230 V to 415 V
		Frequency response analysis (FRA)		10 V to 20 V, Gain 100 dB, 0.1 MHz to 25 MHz
		Magnetizing current at low voltage		230 V to 415 V, 1 mA to 5 A

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