National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 1 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Voltage Ratio	IEEE Std. C57.12.90
2	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Applied Voltage Test	IEEE Std. C57.12.90
3	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Check of Ratio & Polarity of built in Current Transformers	IEC 60076-1
4	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Check of voltage vector relationship	IEC 60076-1
5	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Check of voltage vector relationship	IEEE Std. C57.12.00
6	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	CBIP Manual
7	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	IEEE Std. C57.12.00
8	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	IEEE Std. C57.12.90.
9	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Magnetic Balance Test	CBIP Manual
10	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Magnetic Circuit Insulation test	CBIP Manual
11	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Magnetic Circuit Insulation test	IEC 60076-1
12	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Magnetization Current at Low Voltage	CBIP Manual
13	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Harmonics in No Load Current & Voltage	IEEE Std. C57.12.00

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 2 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
14	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Harmonics in No Load Current & Voltage	IEEE Std. C57.12.90
15	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEC 60076-1
16	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEEE Std. C57.12.00
17	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEEE Std. C57.12.00.
18	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEEE Std. C57.12.90
19	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEEE Std. C57.12.90
20	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Bushings	IEEE Std. C57.12.00.
21	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Bushings	IEEE Std. C57.12.90
22	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Windings	CBIP Manual
23	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Windings	IEEE Std. C57.12.00.
24	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Windings	IEEE Std. C57.12.90
25	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Bushings	IEEE Std. C57.12.00.
26	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Bushings	IEEE Std. C57.12.90
27	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Windings	CBIP Manual

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 3 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
28	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Windings	IEC 60076-1
29	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Windings	IEEE Std. C57.12.90
30	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Windings	IEEE Std. C57.12.00
31	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Frequency Response (SFRA)	CBIP Manual
32	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Frequency Response (SFRA)	IEC 60076-1
33	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Insulation Resistance	CBIP manual
34	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Insulation Resistance	IEC 60076-1
35	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Insulation Resistance	IEEE Std. C57.12.00
36	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Insulation Resistance	IEEE Std. C57.12.90
37	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEEE Std. C57.12.00
38	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEEE Std. C57.12.00
39	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEEE Std. C57.12.90
40	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEEE Std. C57.12.90.
41	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of the Power taken by Fans & Oil Pump Motors	CBIP Manual

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 4 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
42	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of the Power taken by Fans & Oil Pump Motors	IEC 60076-1
43	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of the Power taken by Fans & Oil Pump Motors	IEEE Std. C57.12.00.
44	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of the Power taken by Fans & Oil Pump Motors	IEEE Std. C57.12.90
45	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Voltage Ratio	IEC 60076-1
46	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Voltage Ratio	IEEE Std. C57.12.00
47	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Voltage Ratio	IS 2026 (Part1)
48	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Winding Resistance	IEC 60076-1
49	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Winding Resistance	IEEE Std. C57.12.00
50	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Winding Resistance	IEEE Std. C57.12.90
51	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Zero Sequence Impedance of three phase Transformer	IEEE Std. C57.12.00
52	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Zero Sequence Impedance of three phase Transformer	IEEE Std. C57.12.90.
53	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Temperature Rise Test	IEC 60076-2
54	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Temperature Rise Test	IEEE Std. C57.12.00.
55	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Temperature Rise Test	IEEE Std. C57.12.90

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 5 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
56	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Tests on OLTC assembled on Transformer Dielectric Test on control wiring	IEEE Std. C57.12.00.
57	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Tests on OLTC assembled on Transformer Dielectric Test on control wiring	IEEE Std. C57.12.90
58	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Applied Voltage Test	IEC 60076-3
59	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Applied Voltage Test	IEEE Std. C57.12.00
60	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Applied Voltage Test	IS 2026 -3
61	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Check of voltage vector relationship	IEEE Std. C57.12.90
62	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Check of voltage vector relationship	IS 2026 - 1
63	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	IEC 60076-10
64	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	IS 2026-10
65	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Determination of Sound Level	NEMA-TR1
66	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Test with PD Measurement	IEC60076-3
67	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Test with PD Measurement	IEEE Std. C57.12.00
68	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Test with PD Measurement	IEEE Std. C57.12.90
69	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced voltage withstand test Induced (IVW) Voltage Test with PD Measurement	IS 2026-3

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 6 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
70	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Lightning Impulse Test	IEC 60076-3
71	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Lightning Impulse Test	IEEE Std. C57.12.00.
72	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Lightning Impulse Test	IEEE Std. C57.12.90
73	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Lightning Impulse Test	IS 2026-3
74	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Line Terminal AC Withstand Voltage Test	IEC 60076-3
75	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Line Terminal AC Withstand Voltage Test	IEEE Std. C57.12.00.
76	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Line Terminal AC Withstand Voltage Test	IEEE Std. C57.12.90.
77	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Line Terminal AC Withstand Voltage Test	IS 2026-3
78	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Harmonics in No Load Current & Voltage	IS 2026-1
79	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IEC 60076-1
80	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IS 2026 -1
81	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of No Load Loss & current	IS 2026-1
82	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Bushings	IEC 60137
83	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Windings	IEC 60076-1

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 7 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
84	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Windings	IS 2026-1
85	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Capacitance of Bushings	IS/ IEC 60137
86	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Bushings	IEC 60137
87	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Bushings	IS/ IEC 60137
88	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Dissipation factor (Tan d) of Windings	IS 2026-1
89	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Frequency Response (SFRA)	IS 2026-18
90	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Insulation Resistance	IS 2026-1
91	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEC 60076-1
92	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IEC 60076-1
93	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IS 2026-1
94	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Load Loss And Impedance voltage	IS 2026-1
95	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of the Power taken by Fans & Oil Pump Motors	IS 2026 -1
96	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Winding Resistance	IS 2026 -1
97	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Zero Sequence Impedance of three phase Transformer	IEC 60076-1

SCOPE OF ACCREDITATION

Laboratory Name : TRANSFORMER TESTING LABORATORY, BHARAT BIJLEE LTD., NO. 2, MIDC, THANE BELAPUR ROAD, AIROLI, NAVI MUMBAI, MAHARASHTRA, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7497 **Page No** 8 of 8

Validity 09/11/2022 to 08/11/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
98	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Measurement of Zero Sequence Impedance of three phase Transformer	IS 2026-1
99	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Switching Impulse Test	IEC 60076-3
100	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Switching Impulse Test	IEEE Std. C57.12.00.
101	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Switching Impulse Test	IEEE Std. C57.12.90.
102	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Switching Impulse Test	IS 2026-3
103	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Temperature Rise Test	IS 2026-2
104	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Tests on OLTC assembled on Transformer Dielectric Test on control wiring	IEC 60076-1
105	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Tests on OLTC assembled on Transformer Dielectric Test on control wiring	IS 2026-1
106	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Withstand Test (IVW)	IS2026-3
107	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Withstand Test(IVW)	IEC 60076-3
108	ELECTRICAL- INDUCTORS & TRANSFORMERS	POWER TRANSFORMERS Up to 200MVA, Single Phase & Three Phase Transformer, HT Voltage Up to 220kV, LT Voltage Up to 66kV	Induced Voltage Withstand Test(IVW)	IEEE Std. C57.12.90