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TEST REPORT

NAME & ADDRESS OF CUSTOMER COMFORT INSTA-POWER LTD. PLOT NO. 275-276, GIDC ESTATE, ANJAR-KUTCH, GUJARAT-INDIA	**REPORT NO. :** HCCT/03/173 **DATE :** 18.05.2010

CUSTOMER REF. NO.	**DATE**
CIPL/Gen/09-10/225	06.03.2010
DATE OF SAMPLE RECEIPT	**DATE OF TESTING**
06.03.2010	19.03.2010

SAMPLE DESCRIPTION	**SAMPLE IDENTIFICATION**
DISTRIBUTION TRANSFORMER MFG.BY : COMFORT INSTA-POWER LTD. RATING : 500 KVA VOLTS : 11000/433 V (at no-load) CURRENT : 26.24/667.00 Amps. PHASES : 3/3 FREQUENCY : 50 Hz WINDING : Copper % IMPEDANCE : 4.75 % VECTOR GROUP : Dyn 11 GUAR. MAX. TEMP. RISE IN OIL: 50 °C	ERDA ID NO. : HCCT-1450 MFG.SR NO. : IP-95 COOLING : ONAN CUSTOMER : KHUSBOO ISPAT (P) LTD.
TEST DETAILS As per sheet 2 of 5.	**TEST SPECIFICATION** As per customer's requirement & test Procedure followed as per IS:2026-1977 & 1981.

TEST RESULTS : As per sheet 2 of 5 to 5 of 5.

REMARKS : Transformer **conforms** to the guaranteed requirement as per above mentioned test specification for above mentioned tests.

PREPARED BY **CHECKED BY** **APPROVED BY**

Note : 1. This report relates only to the particular sample received in good condition for testing at E.R.D.A.
2. This report cannot be reproduced in part under any circumstances.
3. Publication of this report requires prior permission in writing from Director , E.R.D.A.
4. Only the tests asked for by the customer have been carried out.

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REPORT NO.: HCCT/03/173 **SHEET** : 2 of 5
DATE : 18.05.2010

TEST DETAILS :

SR. NO.	TESTS	CLAUSE NO.
1.	Measurement of winding resistance	16.2, IS: 2026 – 1977, Part-I
2.	Measurement of voltage ratio and check of voltage vector relationship	16.3, IS: 2026 – 1977, Part-I
3.	Measurement of impedance voltage and Load loss	Customer's requirement and cl. no.16.4, IS: 2026–1977, Part-I
4.	Measurement of no load loss and current	Customer's requirement and cl.no.16.5 of IS:2026-1977, Part-I
5.	Measurement of Insulation resistance	16.6, IS: 2026 – 1977, Part-I
6.	Dielectric tests	
	- Induced over voltage test	11.0, IS: 2026 – 1981, Part-III
	- Separate source voltage withstand test on HV and LV winding	10.0, IS: 2026 – 1981, Part-III

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REPORT NO.:HCCT/03/173 **SHEET :** 3 of 5
DATE :18.05.2010

Sr. No.	Particulars of Tests	Requirement	Obtained Value	Remarks
1.	**Measurement of winding resistance** (As per cl.no.16.2, IS: 2026 – 1977, Part-I) At top oil temp: 34.0 °C			
	HV Winding			
	1U – 1V :	--	3.4298 Ω	
	1V – 1W :	--	3.4350 Ω	
	1U – 1W :	--	3.4198 Ω	
	Average :	--	3.4282 Ω	
	LV Winding			
	2U – 2V :	--	4.4664 mΩ	
	2V – 2W :	--	4.4638 mΩ	
	2U – 2W :	--	4.5280 mΩ	
	Average :	--	4.4861 mΩ	
2.	**Measurement of voltage ratio and check of voltage vector relationship :** (As per cl. no.16.3 of IS:2026 – 1977,Pt.I)			
	Voltage ratio measured between			
	1U-1V and 2u-2n:	44.00 ± 0.5%	44.016	
	1V-1W and 2v-2n:	44.00 ± 0.5%	44.046	**Conforms**
	1W-1U and 2w-2n:	44.00 ± 0.5%	43.982	
	Vector Group :	Dyn11	Dyn11	

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REPORT NO.:HCCT/03/173 **SHEET :** 4 of 5
DATE :18.05.2010

Sr. No.	Particulars of Tests	Requirement	Obtained Value	Remarks
3.	**Measurement of impedance voltage and Load loss :** (As per customer's requirement, Testing procedure followed as per cl.no.16.4 of IS:2026–1977,Part-I.) Tested with **26.300** Amps. (on HV side) Frequency : **49.427** Hz Top oil temp.: **35.4** °C			
	Test current (in Amps.)		26.300	
	Impedance voltage (Volts)		498.17	
	Measured load loss (Watts)		7144.56	**Conforms**
	Load loss (Watts) (Computed to 100% load) At 35.4 °C		7128.16	
	At 75 °C	Max.8625	8022.02	
	Impedance voltage (%) (Computed to 100% load) At 35.4 °C		4.52	
	At 75 °C	4.75 ± 10%	4.63	
4.	**Measurement of no load loss and current :** (As per customer's requirement, Testing procedure followed as per cl.no.16.5 of IS:2026–1977,Part-I.) Tested with average **434.66** Volts. (on LV side) Frequency : **50.169** Hz			
	RMS Voltage (Volts)		442.42	**Conforms**
	No load current(in Amps.)		13.54	
	Measured No load loss (Watts)		1043.50	
	Corrected No load loss (Watts)	Max. 1035	1025.05	

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REPORT NO.:HCCT/03/173 **SHEET:**5 of 5
DATE : 18.05.2010

Sr. No.	Particulars of Tests	Requirement	Obtained Value	Remarks
5.	**Measurement of Insulation Resistance** : (As per cl.no.16.6 of IS:2026-1977,Part.I) Top oil temp.: 32.0 °C **IR value measured between** HV winding --- Earth at 2500 V DC LV winding --- Earth at 500 V DC HV winding --- LV winding at 2500 V DC		 20.5 GΩ 10.5 GΩ 18.0 GΩ	
6.	**Dielectric tests :** (As per cl no.16.7 of IS:2026 – 1977,Part.I) - **Induced over voltage test :** (As per cl.no. 11.0 of IS:2026 – 1981,Pt. III) test voltage of 866 Volts, 3 – phase was applied to the LV winding of the transformer. The supply frequency was maintained at 100 Hz. The test voltage was applied for 60 seconds.	Sample shall withstand 866 volts at 100 Hz frequency for 60 seconds	Withstood	**Conforms**
	- Separate source power frequency voltage withstand test on HV winding: (As per cl.no.10.0 of IS : 2026 – 1981, Part. III) The test voltage of 28 kV ac, rms was applied between the HV winding and earth. The tank and LV winding were shorted together and earthed. The test voltage was applied for 60 seconds.	Sample shall withstand power frequency voltage of 28 KV for 60seconds.	Withstood	**Conforms**
	- Separate source power frequency voltage withstand test on LV winding: (As per cl.no.10.0 of IS : 2026 – 1981, Part. III) The test voltage of 3 kV ac, rms was applied between the LV winding and earth. The tank and HV winding were shorted together and earthed. The test voltage was applied for 60 seconds.	Sample shall withstand power frequency voltage of 3KV for 60seconds	Withstood	**Conforms**

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