

TPSODL	TP SOUTHERN ODISHA DISTRIBUTION LIMITED, BERHAMPUR		
	TECHNICAL SPECIFICATION		
Doc. Title	Specification for items Transformer winding wire(Al SE wire, CU DPC wire, Al Strip DPC)		
Doc. No	ENG-GEN-03	Eff. Date: 16/08/2023	
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Prepared by: Syed Md Yousuf Raja	Reviewed by: Debi Prasad Roy	Approved by: Shailendra Kumar Jaiswal	Issued By: Shirish Sharad Dikay

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1. SCOPE:

This specification covers the technical requirements of design, manufacture, testing of transformer winding wire at manufacturer's works, packing, forwarding, supply and unloading at site/store of TP Southern Odisha Distribution Limited of transformer repair workshop (TRW) complete with all accessories for trouble free and efficient performance. The parameters shall be as below.

2. APPLICABLE STANDARDS

The equipment (and the materials used) covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian standards & other relevant standards for components, BEE & CEA guidelines with latest amendment from time to time.

3. CLIMATIC CONDITIONS OF THE INSTALLATION

The material shall be suitable for following climatic conditions,

[a] Maximum altitude above sea level	: 1000 m
[b] Maximum ambient temperature	: 50 ° C
[c] Maximum daily average ambient air temperature	: 40 ° C
[d] Minimum ambient air temperature	: -5° C
[e] Maximum temperature attainable by an object exposed to the sun	: 60 ° C
[f] Maximum yearly weighted average ambient temperature	: 32° C
[g] Maximum relative humidity	: 100%
[h] Average no. of rainy days in a year	: 120 days
[i] Average annual rainfall	: 150 cm
[j] Maximum wind pressure	: 260 Kg/Sq.Mtr
[k] Average number of thunderstorm days per annum	: 70

Environmentally, the region where the equipment will be installed includes coastal areas, subject to high relative humidity, which can give rise to condensation.

Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions.

Therefore, outdoor material and equipment shall be designed and protected for use in exposed, heavily polluted, salty, corrosive, tropical and humid coastal atmosphere.

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4. GENERAL TECHNICAL REQUIREMENTS

I. Annealed AL Wire (Super Enameled Class)

SI No.	Line Item	Descriptions	Reference Standard
1	AL SE Wire (11 SWG)	Max Current Density1.6/sqmm	IS 5484 Test as per IS 13730 (Part0/sec-3) Mechanical & Chemical Test of wire to be as per IS 10259-2020
2	AL SE Wire (12.5 SWG)	Grade 2 (Al 99.6 %).	
3	AL SE Wire (14 SWG)	Make of Aluminium :Hindalco,	
4	AL SE Wire (16 SWG)	NALCO, BALCO	
5	AL SE Wire (16.5 SWG)	(Original spool or reel of length	
6	AL SE Wire (18 SWG)	228mm)	
7	AL SE Wire (19 SWG)		
8	AL SE Wire(20 SWG)		
9	AL SE Wire(21 SWG)		
10	AL SE Wire(21.5 SWG)		

II. CU DPC Wire

SI No.	Line Item	Descriptions	Reference Standard
1	14 SWG CU DPC Wire	Max Current Density2.5/sqmm ClassA insulation,Make of Copper :Hindusthan Copper, Vedanta or other reputed make.	IS 7404: 2021 Paper covered Cu Conductor- specification for round wire(Part 1), For cellulose paper IS 9335 Part-1 DPC to be tested as per IS 9335 Part-2, For Conductor IS 13730 P-1,P-2 shall conform.
2	12 SWG CU DPC Wire		

III. LT Winding AL Strip With DPC

SI No.	Line Item & Size	Descriptions	Reference Standard
1	LT Winding AL Strip with DPC 7.0X2.5X1	Make of Aluminium	IS4026 -2023 EC Grade Al ingot, IS 6162 P-2 – Paper Covered Al Conductor (Rectangular)
2	LT Winding AL Strip with DPC 9.05X4.1X2	:Hindalco, NALCO,	
3	LT Winding AL Strip with DPC 8.1X3.7X1	BALCO	
4	LT Winding AL Strip with DPC 7.4X3.0X1		
5	LT Winding AL Strip with DPC 7.95X2.35X1		
6	LT Winding AL Strip with DPC 8.20X2.95X1		

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7	LT Winding AL Strip with DPC 6.95X3.0X1		Mechanical & Chemical Test of wire to be as per IS 10259-2020
8	LT Winding AL Strip with DPC 9.30X3.15X2		
9	LT Winding AL Strip with DPC 8.45X3.95X2		
10	LT Winding AL Strip with DPC 11.75X3.95X3		
11	LT Winding AL Strip with DPC 10.45X3.65X2		
12	LT Winding AL Strip with DPC 10.65X3.95X6		

5. Type Tests

Type test certificates on selected material, strictly as per IS, with latest amendment thereof, from NABL recommended by TPSODL or any Govt. labs.

The type test certificates must accompany drawing of type tested equipment, duly signed by type testing authority.

The above tests must not have been conducted on the equipment earlier than 5 years from the date of opening of bids.

In case of any change in design/type of machine already type tested and the one offered against this specification, the owner reserves the right to demand repetition of type tests, without any extra cost.

6. Acceptance and Routine Tests

All acceptance and routine tests, as stipulated in relevant standards, shall be carried out by the manufacturer, in presence of owner's representative.

Immediately after finalization of the program of type testing, the manufacturers shall give, fifteen days advance intimation to the owner, to enable him depute his representative for witnessing the tests.

7. Sample

Bidder shall provide the sample, to the user during tender evaluation. Deviation for sample verification is not allowed in this tender.

8. Make:

Reputed make. Finalization will be done at the time of detailed engineering.

9. Performance Guarantee

The equipment offered shall be guaranteed for satisfactory performance for a period of 18 months from the date of receipt of complete material at destination store/site in good condition or 12 months from the date of satisfactory installation of material whichever is earlier. The material found defective/failed within the above guarantee period shall be replaced/repared by the supplier free of cost within one month of receipt of intimation. If the defective/failed equipment are not replaced/repared as per the above guarantee clause, the company shall recover the supply cost of that material amount plus 15 % supervision charges from any of the supplier's bills.

10. Pre-dispatch Inspection:

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The firm shall demonstrate the Plant performance as per parameters mentioned in the specifications.

11. Packing and Forwarding:

The equipment shall be packed in suitable crates so as to withstand handling during transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable materials shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper lifting arrangement such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by supplier without any extra cost.

Each consignment shall be accompanied by a detailed packing list containing the following information:

- Name of the consignee.
- Details of consignment.
- Destination.
- Total weight of consignment.
- Sign showing upper/lower side of the crate.
- Handling and unpacking instructions.
- Bill of materials indicating contents of each package and spare materials

The supplier shall ensure that the packing list and bill of materials are approved by the purchaser before dispatch.

12. Schedule of Deviations:

(TO BE ENCLOSED WITH TECHNICAL BID)

All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications:

S. No	Clause No.	Details of deviation with justifications

We confirm that there are no deviations apart from those detailed above.

Seal of the Company:

Signature of Bidder:

Name of the Company: Date:

Office Seal: