



The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No.	KPLC1/3CB/TSP/10/103
Issue No.	1
Revision No.	0
Date of Issue	2008-05-27
Page 1 of 6	

**TABLE OF CONTENTS**


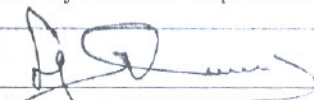
0.1 Circulation List

0.2 Amendment Record

**FOREWORD**

1. SCOPE
2. REFERENCES
3. TERMS AND DEFINITIONS
4. REQUIREMENTS
5. TESTS AND INSPECTION
6. MARKING, LABELLING AND PACKING

**ANNEX A: Technical Particulars**

Issued by: Head of Section TS & S	Authorized by: Head of Department, R & D
Signed: 	Signed: 
Date: 2008-05-27	Date: 2008-05-27



The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No.

KPLC1/3CB/TSP/10/103

Issue No.

1

Revision  
No.

0

Date of  
Issue

2008-05-27

Page 2 of 6

**0.1 Circulation List**

COPY NO.	COPY HOLDER
1	Research & Development Manager
2	Supplies Manager
3	Stores & Transport Manager
4	Technical Services Manager
5	Assistant Manager, Technical Audit

**0.2 Amendment Record**

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)

Issued by: Head of Section TS & S

Signed:

Date: 2008-05-27

Authorized by: Head of Department, R & D

Signed:

Date: 2008-05-27



The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No. KPLC1/3CB/TSP/10/103

Issue No. 1

Revision  
No. 0

Date of  
Issue 2008-05-27

Page 3 of 6

## FOREWORD

This Specification has been prepared by Research and Development Department of the Kenya Power and Lighting Company Ltd and lays down requirements for Copper Winding Wire.

This specification was prepared to establish and promote uniform requirements for Copper Winding Wire. It lays down the minimum requirements for the materials to be used in the company.

### 1. SCOPE

1.1 This specification is for Enameled Round Copper Winding Wire without a bonding layer.

*(The size required to be specified for each tender)*

### 2. REFERENCES

The following documents were referred to during the preparation of this specification; in case of conflict, the requirements of this specification take precedence

IEC 60317-0-1: 2000 – Specification for Particular Types of Winding Wires- Part 0-1: General Requirements – Enamelled round Copper wire

### 3. TERMS AND DEFINITIONS

The definitions given in the reference standards shall apply.

### 4. REQUIREMENTS

#### 4.1 Design and Construction (Characteristics)

The wires shall be designed and manufactured to comply with IEC 60317-0-1.

Issued by: Head of Section TS & S

Signed:

Date: 2008-05-27

Authorized by: Head of Department, R & D

Signed:

Date: 2008-05-27





The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No. KPLC1/3CB/TSP/10/103

Issue No. 1

Revision  
No. 0

Date of  
Issue 2008-05-27

Page 4 of 6

The wires shall be enamelled round copper wires suitable for windings in electrical equipment. The wires shall be Grade 2 as per IEC 60317-0-1 and without a bonding layer.

The wires shall be within the limits set in IEC 60317-0-1 for dimensions, electrical resistance, elongation, springness, flexibility, heat shock, cut-through, resistance to abrasion, resistance to solvents, breakdown voltage, continuity of insulation, temperature index, resistance to refrigerants, solderability, dielectric dissipation factor, loss of mass and resistance to transformer oil.

#### 4.2 Dimensions

The Wires shall be in sizes: SWG 8-32 (0.2743 – 4.0640mm in diameter)

#### 4.3 Breakdown Voltage

As per IEC 60317-0-1

#### 4.4 Electrical Resistance

As per IEC 60317-0-1

#### 4.5 Heat Shock Resistance

The coating shall show no cracks even after elongating by 25% and shall be resistant to any form of deterioration when used in transformer oil at temperatures of up to 150°C.

#### 4.6 Resistance to Solvents and Abrasion

The coating shall be resistant to all standard solvents.

Using a pencil of hardness H the coating shall not be removed.

#### 4.7 Resistance to Transformer Oil

The wires shall be resistant to transformer oil complying with BS 148 and IEC 60296.

Issued by: Head of Section TS & S

Signed:

Date: 2008-05-27

Authorized by: Head of Department, R & D

Signed:

Date: 2008-05-07



The Kenya Power & Lighting  
Co. Ltd.

TITLE:  
**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No.	KPLC1/3CB/TSP/10/103
Issue No.	1
Revision No.	0
Date of Issue	2008-05-27
Page 5 of 6	

**4.8 Instructions, Marking and Packing**

Instructions for use, handling, inspection and requirements shall be included in each package.

The wire shall be evenly and compactly wound on spools. No spool shall contain more than one length of wire.

Each spool shall carry a label containing the following information (marked legibly and indelibly):

- a) Manufacturer's name or trade mark
- b) Type of Wire and Insulation
- c) Net Mass
- d) Nominal Dimensions and Grade
- e) Date of Manufacture
- f) Standard to which the wire complies

**5. TESTS AND INSPECTION**

5.1 The copper winding wires shall be inspected and tested in accordance with IEC 60317-0-1. It shall be the responsibility of the manufacturer to perform or to have performed all the tests specified.

5.2 Copies of previous test reports certified by the relevant National Testing Authority confirming compliance of the copper winding wires offered with the specified requirements shall be submitted with the offer for evaluation (all in English).

5.3 Prior to the manufacture of copper winding wires on order, the purchaser (KPLC) reserves the right to inspect the manufacturing facility and the quality management system.

5.4 Upon completion of manufacturing process, the winding wires shall be subject to inspection by two KPLC Engineers at place of manufacture and tests carried out on samples picked at random in their presence. Test reports shall be completed and made available for approval before shipment/delivery of the winding wires. KPLC will cater for the accommodation and air travel expenses of their representatives, while the manufacturer will bear the local transportation expenses.

Issued by: Head of Section TS & S	Authorized by: Head of Department, R & D
Signed:	Signed:
Date: 2008-05-27	Date: 2008-05-27





The Kenya Power & Lighting  
Co. Ltd.

TITLE:

**SPECIFICATION FOR  
COPPER WINDING WIRE**

Doc. No. KPLC1/3CB/TSP/10/103

Issue No. 1

Revision  
No. 0

Date of  
Issue 2008-05-27

Page 6 of 6

**6. MARKING AND LABELLING**

- 6.1 The Bidder shall submit a clause-by-clause statement of compliance with these specifications and copies of the manufacturer's catalogues, brochures, technical data and test certificates clearly marked to support each clause. The manufacturer's type reference/designation of the item offered shall be indicated.
- 6.2 In the case of tender award, technical details for the copper wires to be supplied shall be submitted to the purchaser for approval before manufacture commences.

**APPENDIX A:** Statement of Compliance (to be filled by the Supplier for all clauses and submitted for tender evaluation)

Clause Number	Bidder's offer	<u>Manufacturer's</u> catalogue, drawing, technical data or tests certificate <u>Reference Page</u> to support the offer.
4.1		
6.2		

**NB:** - This schedule does not in any way substitute for detailed information required elsewhere in the specification.

Issued by: Head of Section TS & S

Signed:

Date: 2008-05-27

Authorized by: Head of Department, R & D

Signed:

Date: 2008-05-02