ZETDC SPECIFICATION

SPECIFICATION FOR

**TELESCOPIC LINK STICKS**

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**ZETDC SPECIFICATION NO. 010809**

**TELESCOPIC LINK STICKS: 10m**

**1 SCOPE**

This specification covers the supply and delivery of telescopic link sticks and accessories. All telescopic link sticks shall be made of epoxy resin-impregnated glass fibres wound around and laid lengthwise over a unicellular plastic foam core. The telescopic link stick shall be supplied with a universal disconnect head.

The Supplier shall state name, place and country of manufacture. The Supplier shall state whether or not the telescopic link sticks are produced under license, in which case licence holders name shall be stated.

Tenders shall include a complete statement of compliance with this specification and the Technical Guarantee Schedule shall be completed. For every clause in this specification the Tenderer shall state compliance or non-compliance and shall elaborate where appropriate.

Spares as recommended by the manufacturer should be included in the scope of supply.

**2. DETERMINATION OF RESPONSIVENESS**

Prior to the detailed evaluation of Tenders, ZETDC will determine whether each Tender is substantially responsive to the requirements of the Tender Document.

For the purpose of this clause, a substantially responsive Tender is one which will conform to all the terms, conditions and specifications of the Tender Document without material deviations or reservations. A material deviation or reservation is one which affects in a substantial way the price, scope, quality, completion, timing or administration of the works undertaken by the Tenderer under the Contract, or which limits in a substantial way, inconsistent with the Tender Document, the Zimbabwe Electricity Transmission and Distribution Company’s rights or the Tenderer’s obligations under the Contract and the rectification of which would affect unfairly the competitive position of other Tenders who have presented substantially responsive Tenders at reasonable price.

A Tender determined to be substantially non-responsive will be rejected by the Authority and may not subsequently be made responsive by the Tenderer by correction of the non-conformity.

The Zimbabwe Electricity Supply Authority may accept any non-material deviation or reservation provided that the acceptance thereof does not prejudice or affect the relative ranking order of any Tender in the evaluation of Tenders.

**3. PARTICULARS OF THE ELECTRICAL SYSTEM**

Unless otherwise specified in the Schedule of Requirements, it must be assumed that the electrical system in which the telescopic link sticks will operate is;

1. Three phase overhead-line construction and underground system. The maximum earth fault factor on the network is 1.5.
2. Operated at 50 Hz, with approximately sinusoidal wave form.
3. The highest system voltage does not normally exceed the nominal system voltage by more than 10%. The nominal system voltages are 33 kV and 11 kV.
4. The system frequency variation does not exceed plus or minus 2.5% from 50 Hz.

Designs should allow for these variations.

**4. PARTICULARS OF THE ENVIRONMENT**

Telescopic link sticks will operate within the tropics and will be subjected to sudden ambient air temperature changes of the order of 10 °C per hour, occurring at the onset of rain, but the barometric pressure at any given place does not vary by more than approximately 10mm Mercury. Frequent and severe lightning storms occur during summer months, with isoceraunic levels varying between 50 and 100 thunderstorm days per annum.

The telescopic link sticks shall be capable of operating under the following environmental conditions.

a) **Ambient temperatures:**

(i) Maximum: 40 °C

(ii) Minimum: minus 10 °C

(iii) Maximum daily average: 35 °C

b) **Altitude:**

Maximum altitude of 1 500 metres above sea level. The design shall allow for reduced cooling effect due to high altitude.

c) **Humidity:**

Humidity of 13mg per cubic metre absolute and 65% relative before storms with vapour pressure of 17mmHg.

*It is the suppliers responsibility to make himself familiar with any other climatic and physical conditions pertaining in Zimbabwe and to supply telescopic link sticks which meet all such conditions.*

**5. LANGUAGE, UNITS AND STANDARDS**

All tenders, correspondence, description upon drawings, illustrations or instructions shall be in unambiguous English Language. SI Units of measurements shall be used throughout.

Except where modified by ZETDC's Specifications, IEC Recommendations **(IEC 60855)** shall apply throughout or **ASTM F711** where they amplify the **IEC 60855**. In the case of conflict between the above stated Standards and this Specification, the ruling of this Specification shall prevail.

**6. DEFINITIONS**

Throughout this document, the following terms shall be used in the manner defined below:

***May -*** indicates the existence of an option

***Shall -*** indicates that a statement is mandatory

***Should* -** indicates a recommendation

**7. DESIGN FEATURES**

**7.1 Material**

The telescopic link sticks offered shall be made of reinforced high density electrical grade fibre glass or epoxy resin-impregnated glass fibres wound around and laid lengthwise over a unicellular plastic foam core. This foam core shall consist of unconnected individual cells containing a low boiling inert material which inhibits moisture absorption and condensation. The unicellular foam shall be bonded to the reinforced walls. The material should conform to ASTM F711.

**7.2 Electrical Design**

The telescopic link stick offered should be capable of use with voltages up to 33kV, and shall be capable of withstanding a voltage stress of 100kV per metre.

**7.3 Dimensions**

The telescopic link stick shall conform to the following dimensions and weight.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number of Sections** | **Extended Length (m)** | **Maximum Retractable Length (m)** | **Maximum Diameter of Base Tube (mm)** | **Maximum Weight (kg)** |
| 7/8 | 10.6 | 1.65 | 64 | 5.0kg |

**7.4 Locking Mechanism**

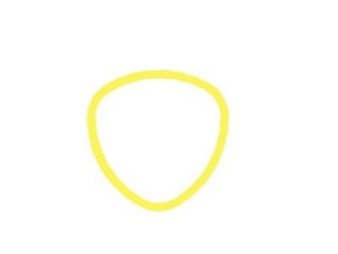
The telescopic link sticks shall have spring-loaded cubed plastic buttons to keep the extended tool sections securely locked in position. As each section is extended and twisted slightly, the buttons shall pop into place, allowing a firm and secure coupling, enabling working to be done with complete control and confidence.



*Locking Button Top View*

**7.5 Shape, Finish & Colour**

The telescopic link stick shall be triangular with a super smooth glossy finish, bright yellow or bright orange in colour.



*End View showing Triangular Shape*

**7.6 Tool Bag**

All telescopic link sticks shall be supplied with heavy duty vinyl-impregnated fabric bags. The bags shall be of the same colour as the link sticks. The universal head shall also be supplied with a suitable carry bag

**7.7 Universal Head**

The telescopic link sticks shall be supplied with a universal head made from heat treated aluminium alloy.

**7.8 Manuals and other Accessories**

The following manuals and toolkit shall be supplied at time of delivery:

* One operator’s manual/diagram with each telescopic link stick
* Maintenance chart/ booklet for each telescopic link stick showing service points and lubrication intervals and recommended lubricants.
* Manufactures recommended universal tools suitable for use with the telescopic link stick.

**7.9 Warranty**

A minimum one-year warranty shall be provided on all manufacturers’ equipment.

**8 TECHNICAL GUARANTEE SCHEDULE**

**TELESCOPIC LINK STICK:10.60m (minimum)**

Please complete this schedule by ticking where requirement is met or stating the actual tendered telescopic link stick specification in the column labelled Actual

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **Unit** | **Requirement** | **Actual** |
| Number of sections | - | 7 or 8 |  |
| Extended length  7/8 sections |  |  |  |
| m | 10.60 **minimum** |  |
| Retractable length  7 sections  8 sections |  |  |  |
| m | 1.60 maximum |  |
| m | 1.65 maximum |  |
| Base Tube Diameter  7 sections  8 sections |  |  |  |
| mm | 60 |  |
| mm | 64 |  |
| Maximum Weight  7 sections  8 sections | kg |  |  |
| kg | 4.5 |  |
| kg | 5.0 |  |
| Shape | - | Triangular |  |
| Standards | - | ASTM F711, IEC 60855 |  |
| Rated operating voltage | kV | 36kV |  |
| Rated withstand voltage | kV/m | 100 (min) |  |
| Colour (link Sticks) | - | Yellow or Orange |  |
| Colour (Carry bag) | - | Yellow or Orange |  |
| Universal Head Provided | - | Yes/No |  |
| Warranty | - | At least One Year |  |
| Product Data |  | Provide a detailed manufacturers data sheet of the 10.6m Linkstick you intend to supply |  |
| Product Data |  | Provide clear colour pictures of the 10.6 m Linkstick you intend to supply |  |