**ZETDC**



**DISTRIBUTION DEPARTMENT**

**ZETDC SPECIFICATION NO. 14042015**

**SPECIFICATION FOR**

**ALUMINIUM LADDERS**

**Table of Contents**

**1. SCOPE 3**

**2. DETERMINATION OF RESPONSIVENESS 3**

**3. PARTICULARS OF THE ELECTRICAL SYSTEM 4**

**4. PARTICULARS OF THE ENVIRONMENT** **4**

Ambient Temperature **5**

Altitude **5**

Humidity **5**

**5. LANGUAGE, UNITS AND STANDARDS 5**

**6. DEFINITIONS 5**

**7. DESIGN 6**

7.1 Mechanical Design **6**

7.2 Locking Mechanism **6**

7.3 Dimensions & Weight **7**

7.4 Additional Features **7**

7.5 Manual & Accessories **7**

7.6 Warranty **7**

**8 TECHNICAL GUARANTEE SCHEDULE 8**

**ZETDC SPECIFICATION NO. 14042015**

**ALUMINIUM LADDERS**

**1 SCOPE**

 This specification covers the supply and delivery of aluminium ladders and accessories.

The Supplier shall state name, place and country of manufacture. The Supplier shall state whether or not the aluminium ladders are produced under license, in which case the 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/accessories 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 aluminium ladders will be used in 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, 11 kV and 0.4kV.
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**

 Aluminium ladders 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 Aluminium ladders 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 Aluminium Ladders 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, SABS recommendations (SABS 1304) shall apply throughout. 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 Mechanical Design**

The aluminium ladders offered shall have a sturdy box side rail mechanical frame. The ladders shall have platform rungs made of aluminium. The rungs shall be serrated to increase slip resistance. To prevent rung turning, the rungs shall be square shaped as shown in Fig 1. For easy extension of the ladders, the ladders shall have an interlock side rail design as shown in Fig 2.

Gravity rope and pulley system for easy extension

 Fig1 Fig2

**7.2** **Locking Mechanism**

To prevent accidental lowering of the ladder and related dangers, the aluminium ladders shall have a safety latch as shown in Fig 3.

Fig 3

**7.3 Dimensions & Weight**

The aluminium ladders shall conform to the following dimensions and weight.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type** | **Closed Height (m)** | **Extended Height (m)** | **Maximum Unloaded Weight (kg)** | **Load Capacity (kg)** |
| A | 5.5 | 7.9 | 38 | 130 |
| B | 6.1 | 11.4 | 42 | 130 |

**7.4 Additional Features**

 The ladders shall have a the following additional features;-

* Ladders should have rollers positioned at the top to allow for smooth sliding along the pole during ladder extension.
* Gravity rope and pulley system for easy extension
* Safety chain or rope
* Non-slip PVC feet as shown in Fig 4 
* Gravity fail-proof safety lock as shown in Fig 5

 Fig 4 Fig 5

**7.5 Manuals and other Accessories**

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

* One operator’s manual/diagram with each aluminium ladder.
* Maintenance chart/ booklet for each aluminium ladders showing service points and lubrication intervals and recommended lubricants.
* Manufactures recommended universal accessories suitable for use with the aluminium ladders.

**7.6 Warranty**

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

**8 TECHNICAL GUARANTEE SCHEDULE**

**ALUMINIUM LADDERS**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Particulars** | **Unit** | **Requirement** | **Actual** |
| Closed Height Type A Type B | m | 5.5 max |  |
| m | 6.1 max |  |
| Extended Height Type A Type B  | m | 10.2 min |  |
| m | 11.4 min |  |
| Unloaded Weight Type A Type B  | kg | 38 |  |
| kg | 42 |  |
| Safety Latch | - | Yes |  |
| Box Rails | - | Yes |  |
| Platform Rungs | - | Yes |  |
| Rope & Pulley System | - | Yes |  |