

**GOVERNMENT OF MIZORAM**  
**OFFICE OF THE ENGINEER-IN-CHIEF : POWER & ELECTRICITY DEPARTMENT**  
**'KAWLPHETHA' NEW SECRETARIAT COMPLEX**  
**MIZORAM : AIZAWL**

**NOTICE INVITING TENDER**

*Dated Aizawl, the 20<sup>th</sup> November, 2017*

**No.996/1/17-E-in-C(PD)/9** : The Engineer-in-Chief, Power & Electricity Department, Govt. of Mizoram, on behalf of Governor of Mizoram, invites sealed tenders in duplicate from reputed manufacturers or their authorized dealer for **Manufacture, Supply of 132kV Double Circuit Transmission line Tower**. Details may be had from the Executive Engineer (Design & Monitoring) office of the Engineer-in-Chief (P&E) on any working day from the date of issue of this notice till **dt.31.12.2017** on payment of Rs.1000/- (non-refundable) in the shape of Demand Draft only, in favour of "Engineer-in-Chief, Power & Electricity Department, Mizoram" and payable at SBI, Dawrpu Branch, Aizawl, Mizoram only. Tender bids will be received upto **1300 hrs** on **dt. 09.01.2018** and will be opened at **1400 hrs** on the same date. Details are also available at [www.tender.mizoram.gov.in](http://www.tender.mizoram.gov.in).

Sd/-

LIANNHINGLOVA PACHUAU  
Engineer-in-Chief (P&E)

*Dated Aizawl, the 20<sup>th</sup> November, 2017*

Memo No.996/1/17-E-in-C(PD)/9

Copy to:-

1. The PS to Hon'ble Minister, P&E Deptt, Govt. of Mizoram for favour of information.
2. The Secretary to the Govt. of Mizoram, Power & Electricity Department for favour of information.
3. The Director I & PR, Govt. of Mizoram with a request to arrange publications of Tender Notice as follows. The Tender Notice may please be published in 1 (one) issue of any 2 (two) Local Newspaper (Vanglaini and Aizawl Post) and 1 (one) issue each of any 1 (one) Regional News papers within 15 (fifteen) days. Bill in triplicate enclosing copy of the advertisement tear sheet may be submitted to the undersigned for making payment.
4. The Principal Informatics Officer, Department of Information Communication Technology, Govt. of Mizoram with a soft copy of the NIT with a request to post in the Official website.
5. All Chief Engineers under Power & Electricity Department for information and wide circulation.
6. All Superintending Engineers under Power & Electricity Department for information and wide circulation.
7. All Executive Engineers under Power & Electricity Department for information and wide circulation.
8. Office Notice Board.

Superintending Engineer (PDM)

**ABBREVIATED NOTICE INVITING TENDER**

**TENDER NOTICE**

The Engineer-In-Chief, Power & Electricity Department invites sealed tenders from reputed manufacturers or their authorized dealer for **Manufacture, Supply of 132kV Double Circuit Transmission line Tower..**

For details, please visit [www.tender.mizoram.gov.in](http://www.tender.mizoram.gov.in) or contact the Office of the Engineer-In-Chief, P&E Department, Mizoram

Sd/-

Liannghinglova Pachuau  
Engineer-in-Chief  
Power & Electricity Department  
Mizoram: Aizawl

**Note : This Abbreviated Notice Inviting Tender is for Regional News Paper**

**GOVERNMENT OF MIZORAM  
POWER AND ELECTRICITY DEPARTMENT  
MIZORAM : AIZAWL**



**TENDER DOCUMENT**

**NOTICE INVITING TENDER NO \_\_ OF 2017-2018**

(Vide No. 996/1/17-E-in-C(PD)/\_\_)

**Name of work : Manufacture, Supply of 132kV  
Double Circuit Transmission line Tower.**

*2017*

**Office of the Engineer-in-Chief, P&E Deptt : Aizawl, Mizoram**

# **SECTION-I**

## **TERMS & CONDITIONS**

### **1. DEFINITION OF TERMS**

In the Supply Contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them.

The '**Supply Contract**' means the Documents duly signed by both the Parties, forming formal Agreement executed between Power & Electricity Department, Govt. of Mizoram, Aizawl and the Tenderer.

'**Quoted Price**' shall mean the total sum of financial involvement named in or calculated in accordance with the provisions of the Contract Price.

'**Equipment/Materials**' shall mean and include all Machinery, Apparatus, Materials etc to be provided/supplied under the Contract by the Tenderer

'**F.O.T Price**' shall mean the cost of equipment/materials up to destinations as specified in the Contract. The cost should include GST, Freight, Insurance, any Charges up to destination.

'**General Conditions**' shall mean these General Conditions of Contract.

'**Month**' shall mean a Calendar Month.

'**Owner**' means the Power & Electricity Department, Govt. of Mizoram, Aizawl.

'**Project**' refers to that mentioned under the headings of the Tender Specifications.

'**Purchaser**' shall mean the Engineer-in-Chief, Power & Electricity Department, Govt. of Mizoram, Aizawl.

'**Purchaser's Representatives**' shall mean any Person or Consulting Firm appointed and remunerated by the Purchaser to Supervise, Inspect, Test and Examine Workmanship on the Survey, Supply and erection works.

**'The Tenderer'** shall mean the Tenderer whose Bid has been accepted by the Purchaser and shall include the Tenderer's Executors, Administrators, Successors and permitted assigns approved by Engineer-in-Chief, Power & Electricity Department, Mizoram, Aizawl.

**'The Engineer/Engineer in charge'** shall mean the Engineer appointed by the Purchaser/Owner for the purpose of this Contract.

**'Specification'** shall mean the specification annexed to or issued with the General Conditions and shall include the Schedules and Drawings attached thereto as well as samples and patterns, if any.

**'Ton'** or **'Tonne'** used in these specifications shall mean Metric Ton, unless otherwise specified.

**'Contract Documents'** shall mean the following documents which shall be deemed to form an integral part of this Contract.

- i) Contract Agreement, Instructions to Tenderers and all conditions of contract.
- ii) Tenderer's proposal including the letters or clarifications there to between the Tenderer and the Purchaser prior to award of Contract and
- iii) Equipment Specifications and Drawings. In the event of any conflict between the above mentioned documents, the Contract Agreement shall prevail.

**'Site'** means the land on, under, in or through which the works are to be executed or carried out or such lands as may be agreed between the Owner and the Tenderer as being reasonable and necessary for the carrying out of the work.

**'Fiscal Year'** shall mean a year beginning on 1<sup>st</sup> April and ending on 31<sup>st</sup> March in the succeeding year.

**'Security Deposit'** shall mean all deposits whether in Government Securities, Fixed Deposit Receipts or Bank Guarantees from Nationalized Banks of India, amounts deducted from interim payments or in any other form as specified by the Purchaser pledged to the Owner for due performance of the Contract and shall be adjusted in case of compensations or penalties and which may stand for future either in part or whole as the situation demands.

**Letter of Intent** means the letter from the Engineer-in-Chief conveying his intention to accept the Bid subject to reservations as may have been stated therein.

**Letter of Award/Instruction to Commence** means the letter from the Engineer-in-Chief notifying the formal acceptance of the Bid subject to the terms and conditions finally arrived at after conduction/negotiation (if any).

'**Manufacturer**' used herein refers to the party proposing to design, fabricate and manufacture as specified complete or in part.

'**Authorised Representative**' of the Owner shall mean any Authorised Officer of the Owner from the level of Junior Engineer and above.

## **2. TENDER DOCUMENT :**

Tender documents shall be sold to the intending Tenderers, who are manufacturers or their authorized dealers only on receipt of Rs.1,000.00 (Rupees One thousand) only (non-refundable) in the shape of demand draft drawn on any scheduled bank in favour of the Engineer-in-Chief, Power & Electricity Department, Aizawl, Mizoram payable at State Bank of India, Dawrpui Branch, Aizawl, Mizoram. Further, the tender submitted using tender documents other than duly obtained as stated above if any, will be summarily rejected. Tender documents are available at the website [www.tender.mizoram.gov.in](http://www.tender.mizoram.gov.in).

**3. Scope of work:** The scope of work hereby tendered in brief shall include Manufacture, Supply, Delivery of 132kV Double Circuit Transmission line Tower materials with stub template including Nuts & Bolts in conformity to technical specifications enclosed.

## **4. Pre-qualification/Eligibility Criteria :**

- i) The Tenderer should be a regular manufacturer/ Original Equipment Manufacturer (OEM) or authorized representative /Dealer. In case the vendor is authorized representative of OEM, the complete system should be sourced from OEM only. Valid Authorisation Certificate/Letter from Original Equipment Manufacturer (in case of not directly quoted by OEM) for quoting of their system and provide support for commissioning and after sales services.
- ii) The Original Equipment Manufacturer (OEM) should have at least 5 years of experience in manufacturing of the equipment and have an experience of supplying and commissioning directly or through their authorized dealer/representative to reputed organizations, especially NITs/IITs/Central Universities/IISERs/CSIR labs, Power

Utilities etc. Document for proof of such supplies at least for the preceding three years, where successful supply and installations have been made during this period should be given together with the full address, telephone numbers and fax numbers of the customers. Performance Certificate regarding satisfactory performance of the equipment from at least four mentioned organisations (issued within 1 year prior to opening of this tender) should be submitted along with the tender.

- iii) Manufacturer should comply with relevant international standards/specifications and meet certification requirements with valid certificates for manufacturing practices of the equipments. Valid certificate to prove the genuineness of the products and of international standard i.e Manufacturer's certificate and ISO/ISI certificate must be enclosed.
- iv) The Tenderer should provide maintenance support for the equipment as and when required by the Department. The Tenderer should submit the documentary evidences of having established mechanism/after sales service facilities for prompt services as and when required, indicating clearly the nearest 'after sales service centre' from Mizoram indicating detailed contact address etc.

**4. Tax Clearance :**

The successful tenderer should produce Valid GST registration Certificate before supply order is placed.

**5. Guaranteed Technical Particulars :**

The GTP (Guaranteed Technical Particulars) of the equipments along with their complete technical description supported by drawing shall be furnished by the tenderer. Relative specification like IS/BS/IEC/BEE etc. should be mentioned.

**6. Examination of the Documents :**

The Tenderer shall examine Conditions of the Tender and Specifications to satisfy himself about all the Terms & Conditions and circumstances affecting the Tendered Price. He shall quote price(s) according to his own views on these matters and understand the quoted prices are inclusive of all taxes, duties, freight, insurance etc.,. The Tenderer shall give his/her signature with seal in each and every page of the Tender Document as an indication of his/her acceptance of the Terms and Conditions of the Tender and submit with the tender offered.

No overwriting is allowed In the Tender. Dated initial should be given by the Tenderer to all corrections, if any, and the seal stamped on each.

Tenderers should submit the following along with their tenders :

- i) Document for proof of Regular Manufacturer/Original Equipment Manufacturer (OEM).

- ii) Valid Authorisation Certificate/Letter from Original Equipment Manufacturer (in case of not directly quoted by OEM).
- iii) Proof of document for at least 5 years of experience in manufacturing of the equipment and have an experience of supplying and commissioning directly or through authorized dealer/representative to reputed organizations, especially NITs/IITs/Central Universities/ IISERs/CSIR labs, Power utilities etc. Document for proof of such supplies at least for the preceding three years, where successful supply and installations have been made during this period should be given together with the full address, telephone numbers and fax numbers of the customers. Performance Certificate regarding satisfactory performance of the equipment from at least four mentioned organisations (issued within 1 year prior to opening of this tender) should be submitted along with the tender.
- iv) Valid House Tax Payee Certificate in case of Tribal Tenderer.
- v) Court fee stamp worth Rs.8.25 in case of Non-Tribal Tenderer.
- vi) ISI/ISO Certificate.

**7. Earnest Money :**

The Tenderer shall have to furnish Earnest Money for Rs.41,00,000/- ( Rupees Forty one lakhs only) in the shape of Bank Draft/Deposit at call pledge in favour of the Engineer-in-Chief, Power and Electricity Department, Aizawl, Mizoram in a separate cover superscribing the Tender Specification Number and Date of opening. Tribal Tenderers are allowed to submit Earnest Money for half the above amount on production of tribal certificate issued by competent authority. Manufacturers registered with NSIC, DGT&D and also SSI unit under Government of Mizoram is exempted for payment of Earnest Money provided Registration Certificate is enclosed.

**8. Price :**

- i) Price quoted should be firm and FOT delivery at site within Aizawl.
- ii) Price quoted should be quoted both in figure and in words using Schedule of Prices given in Price Schedule (Annexure-II).
- iii) The tenderer shall quote the rates in the Price Bid of the tender documents. The rates quoted should be including of all taxes and duties insurance, freight, handling charges, etc. but exclusive of Service Tax.
- iv) If there is any discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price should be corrected.
- v) Similarly, if there is any discrepancy between the words and figures the price/amount in words should prevail.



**9. Validity :**

Tender should be kept valid for a period of 180 days from the date of opening the tender.

**10. Terms of Payment :**

100% of the materials/equipment cost shall be paid on receipt of equipments/materials at the destiny in full and in good condition.

**11. Quantity :**

The quantities mentioned in the schedule attached herewith are tentative and to be executed by the successful bidder at the same rates accepted by the P&E Deptt in all the terms and conditions of an order. However, payment shall be made only for the quantities Supplied. In case of any deviation resulting in any increase in quantity, prior approval of P&E Deptt will be required.

**12. Delivery**

The equipments are to be delivered within 180 (one hundred eighty) days from the date of issue of order.

**13. Preparation and Submission of tender :**

- i) The tender should be submitted in two envelopes, i.e, one containing earnest money and the other containing all tender offered with all documents specified in clause 6.
- ii) The tender without Earnest Money shall be summarily rejected.
- iii) All the envelopes should bear the name and address of the Tenderer and marking should be made for the original and duplicate copy.

**14. Reservation :** The undersigned/Owner reserves the right to accept or reject, partly or wholly, or all the tenders without assigning any reason thereof if the situation so warrants. Further, he is not bound to propose the lowest Tenderer for selection. **The Technical Committee of the Department shall scrutinize and evaluate valid tenders with reference to the documents submitted by the Tenderer to be placed before the Purchase Advisory Board.** The Tenderers who do not accept the terms of payment as specified in clause no 10 above will be liable for rejection.

In the event of any specified date for submission or opening of the tender being declared as holiday, the tender will be received/opened at the appointed time on the next working day.

**15. Guarantee :**

The Suppliers shall guarantee for satisfactory performance of the equipment for a minimum period of 12 (twelve) months from the date of erection of tower or 18 (eighteen) months from the date of receipt whichever is earlier. In the event of any defect in the equipments within

the guarantee period, the Tenderer shall guarantee to repair/replace to the satisfaction of the purchaser free of cost.

**16. Performance guarantee:**

The Successful tenderer will have to deposit of an amount 10% of the materials/equipment cost in the form of Bank guarantee from a Nationalized or scheduled Bank in lieu of performance guarantee. The Bank guarantee should be valid for a period of 12 months which may be extended as per requirement to cover guarantee period.

**17. Insurance of materials :**

The material shall be fully insured by the supplier at his cost against damage, lost, pilferage etc. in transit. Copy of insurance document should be sent along with evidence of despatch. No responsibility shall be accepted by the purchaser on the materials before they are received at site by the consignee.

**18. Extension of time :**

If the supply of the material is delayed due to reasons beyond the control of the supplier, the supplier shall without delay give notice to the purchaser in writing of his claim for an extension of time within 10(ten) days of Schedule date of delivery. The Purchaser on receipt of such notice may agree to extend the contract delivery date as may be reasonable but, without prejudice to other terms and conditions of the contract.

**19. Address :**

All correspondences with regard to the above may be made to the following address :

Engineer-in-Chief  
Power & Electricity Department  
'Kawlphetha' New Secretariat Complex  
Aizawl : Mizoram, Pin -796001.

## SECTION-II

### TECHNICAL SPECIFICATION

#### GALVANIZED STEEL TOWER/TEMPLATE :

##### 1. SCOPE :

Fabrication, galvanizing and testing of material used for 132 KV D/C tower suitable for ACSR "Panther" conductor shall be according to the latest edition of the following standards (as mentioned Up-to-date) except where otherwise specified in the Specification.

Sl No	Specification	Standard Code
1	Specification for zinc	IS : 209-1992
2	Code of practice for use of structural steel in general Building Construction.	IS : 800-1991
3	Code of practice for use of structural steel in overhead transmission line towers.	IS 2062-1999
4	Hexagon head bolts, screws and nuts of product grade 'C'.	IS : 1363-1992(Part 3)
5	Technical supply conditions for threaded fasteners (First Revision)	IS : 1367-1979
6	Plain washers	IS : 2016-1992
7	Steel for general structural purposes Specification.	IS : 2062-1999
8	Recommended practice for hot-dip galvanizing of iron and steel.	IS : 2629-1990
9	Methods of testing weight thickness and uniformity of coating on hot-dip galvanised articles.	IS : 2633-1992
10	Single Coil Rectangular Section spring washers for bolts, nuts, screws.	IS : 2063-1972
11	Specification for hot-dip zinc containing on structural steel and other allied products.	IS : 4759-1990
12	Specification for hot-dip galvanised coating on fasteners.	IS :5358-1969
13	Code of practice for design, installation and maintenance of overhead power lines.	IS : 5613-1976
14	Heavy washers for steel structures.	IS : 6610-1991
15	Hexagonal bolts for steel structures.	IS : 6639-1972

16	Methods for determination of weight of zinc coating of zinc coated iron and steel articles.	IS : 6745-1972
17	Transmission Tower bolts of property class 5.6.	IS : 12427-1992

## **2. PROCUREMENT OF EQUIPMENTS, TOOLS-TACKLES AND MATERIALS:**

- 2.1** All the materials, tools, equipments in sufficient quantity, required for straightening, cutting, drilling, punching, bending, welding, galvanizing etc. activities shall be procured/arranged by the successful Bidder before the work is to be taken up on hand and shall not link the delivery period with procurement/arrangement of these items/tools/equipments. List of equipment and size of galvanized bath shall be submitted along with technical bid.
- 2.2** The Bidder shall make his own arrangement for procurement of steel conforming to IS: 2062 Grade-A before commencement of work-in sufficient quantity. The use of high tensile steel is not permitted.
- 2.3** In case of non-availability of any required steel section, Bidder at his own cost shall procure and utilize next higher section to complete the work. However, from design point of view, such alternate higher section shall be got approved from P&E Department before the use. The total payable weight will be limited to A/T Guaranteed weight only.
- 2.4** The Bidder shall make his own arrangement for procurement of required Bolt-Nuts, accessories, attachments like 'D' shackles. 'U' bolts, anchor bolts, step bolts etc from the approved vendor of P&E Department well in advance and supply as per scheduled completion period along with the inspection at sub vendor's premises.
- 2.5** The P&E Department reserves right to test the samples of Bolts & nuts of the proposed Bolt-nut supplier before approving the make. The P&E Department is at liberty to have samples of steel, zinc etc. to be used, test, check in any Laboratory recognized by the Government at the cost of Bidder and reject the material if found below standard.
- 2.6** The zinc used for galvanizing of fabricated materials shall be electrolytic high grade zinc (99.95% Purity.)

### **3. DRAWINGS AND BILLS OF MATERIALS:**

**3.1** The P&E Department will provide one set of available tentative drawings and bills of material pertaining to respective structure to the successful Bidder on award of contract. The successful Bidder has to submit copies of given drawings/bills of material for P&E Department's approval before commencing the mass production along with manufacturing QAP (Quality Assurance plan) Proto-Model (if required) shall be prepared and got inspected for the approval along with fabrication sketches, tower drawings and bills of material at no extra cost to the P&E Department. Soft copy of approved bill of material must be submitted along with drawings of tower in AUTOCAD format to Engineer-in-Chief, P&E Department.

**3.2** The approved copies of structural drawings and bills of materials shall be distributed as under :

- i) CE (Distribution), P&E Department, Government of Mizoram
- ii) Superintending Engineer (Project Circle-I), P&E Department, Government of Mizoram.
- iii) Executive Engineer (Mamit Power Division), P&E Department, Government of Mizoram.

### **4. TYPE OF STRUCTURES :**

All the structures shall be fully galvanised using only structural mild steel sections for members. The use of high tensile steel is not permitted. Hexagonal head bolts with nuts and spring washers shall be used for connections.

The type of structure shall be 132 KV D/C tower suitable for ACSR "Panther" conductor. The parameters for design of extension portion OR structure with height more than standard available extension will be provided to the successful Bidder.

### **5. MATERIAL :**

The steel required for fabrication of structure member shall conform to IS: 2062 -1999 Grade A. The zinc required for galvanizing shall be of Zn-99.95% and shall conform to IS: 209-1992. The bolts and nuts shall conform to IS: 12427-1992/IS: 1367(Part-3)-1991. The bolts and nuts shall be of minimum class 5.6. The plain washers shall conform to IS:2016-1992. Heavy washers shall conform to IS:6610- 1991. Spring washers for bolts and nuts shall conform to IS:3063- 1994. All bolts and nuts shall have hexagonal heads. The heads, being forged out of the solid, truly concentric and square with the shanks, must be perfectly straight. Fully threaded bolts shall not be used. The length of bolts shall be such that the threaded portion will not extend to the place of contact of the member. All bolts shall be threaded as per IS: 1363 (1992)

to take full depth of the nut and shall be threaded enough to permit firm gripping of the member, but no further threaded portion of each bolt shall project through the nut at least 6mm. when fully tightened. All nuts shall fit hand tight to the point where the shank, of the bolt connects to the head. Flat and tapered washers shall be provided where necessary. The diameter of bolts shall be 12 mm, 16mm and 20mm. The thickness of spring washers shall be 2.5 mm, 3.5 mm and 4 mm respectively. Spring washers shall be provided under all nuts. These washers shall be positive lock type electro galvanized. Each structure shall be provided with step-bolt of not less than 16mm diameter having length 150mm. The step-bolt shall be fixed on one leg up to top of structure as indicated in approved drawing. Each step-bolt shall be provided with two nuts and one washer.

## **6. FABRICATION WORKMANSHIP:**

**6.1** The details of fabrication shall conform to IS: 802 (Part-II) - 1978.

**6.2** All the structure members shall be accurately fabricated to bolt together easily at site without any undue strain on the bolts. The diameter of the bolt-hole shall be equal to the diameter of bolt plus 1.5 mm. All similar parts of structure shall be made strictly interchangeable. All steel sections before any work is done on them, shall be carefully, levelled, straightened and made true to detailed drawings by methods which will not injure the materials so that when assembled the adjacent matching surfaces are in close contact throughout. No rough edges shall be permitted in the entire structure.

## **7. DRILLING AND PUNCHING:**

Before any cutting work is started, all steel sections shall be carefully straightened and trued by pressure and not by hammering. They shall again be trued after being punched and drilled. Holes for bolts shall be drilled or punched with a jig but drilled holes shall be preferred. The following maximum tolerance of accuracy of punched holes is permissible. Holes must be perfectly circular and no tolerance in this respect is permissible. The maximum allowable difference in diameter of the holes on the two sides of plates or angle is 0.8 mm i.e. the allowable taper in a punched holes should not exceed 0.8mm of diameter. Holes must be square with the plates or angles and have their walls parallel. All burs left by drills or punch shall be removed completely. When the structure members are in positions, the holes shall be truly opposite to each other. Drilling or ramming to enlarge defective holes shall not be permitted.

## **8. ERECTION MARK:**

Each individual structure member shall carry a code number conforming to the component number given to it in the bills of material and fabrication drawing. This code number shall be marked with marking dies, having 16 mm size-letter before galvanising and shall be legible after galvanising. The letters indicated for different types of structure shall only be used.

Erection Mark shall be "MZ-A-BBB", where

MZ = It stand for to be used within Mizoram      Alphabet

A = Structure type (i.e B or C or S)      Alphabet

BBB = Structure member Number      Numerical

This mark shall be got approved from the P&E Department.

## **9. BENDING:**

Mild steel angle sections upto 75 x 75 mm (upto 6 mm thick) shall be bent cold up to and including bend angle of 10 Deg. angles above 75x75 mm (thickness up to 6 mm) and up to and including 100 x 100 mm (thickness upto 8 mm) may also be bent cold up to the bend angle of 5 Deg. All other angle sections and bend angles not covered above shall be bent hot. All plates upto 12 mm thickness shall be bent cold upto a maximum bend angle of 15 Deg. Greater bends and other thicknesses shall be bent hot. All hot bent material shall be air cooled. The bends shall be of even profile and free from any surface damages.

## **10. GALVANISING:**

**10.1** The galvanizing shall be done to all the structure members after the fabrication work is completed. The nuts may be tapped or re-run after galvanizing. Threads of bolts and nuts shall have neat fit and can be turned with finger throughout the length of the threads of bolts and they shall be capable of developing full strength of bolts.

**10.2** The zinc deposition should not be less than specified, per galvanized surface area of the fabricated structure member.

**10.3** The galvanizing of the structure members shall conform to IS: 2629- 1985 & IS: 4759-1984. All galvanized members shall withstand tests as per IS: 2633-1986. The weight of zinc coating shall be determined as per the method stipulated in IS:2633 -1986. Spring washers shall be electro galvanized as per IS:1573-1970.

**10.4** All the stubs, cleats and stub-setting templates shall be fully galvanized.

**10.5** Unless other wise specified the fabricated tower parts & stub shall have a minimum overall zinc coating of 610 Gram per Sq.



meter of surface except for plates below 5 mm which shall have zinc coating of 460 Gram per sq. meter of surface. The average zinc coating for section 5 mm & above shall be maintained as 87 Micron & that for section below 5 mm shall be maintained as 65 Micron.

**11. CONFORMITY:**

The Bidder shall ensure that the specified materials and workmanship of all structures actually supplied strictly conform to drawings/data supplied/approved by the P&E Department. In case any deviation is detected during the process of supply or even after erection, the Bidder shall replace such defective structure free of cost to the P&E Department. All expenditure or losses incurred in erection, to and fro transportation and any other expenditure or losses incurred by the P&E Department on this account shall be borne by the Bidder. No extensions in delivery period shall be allowed on this account.

**12. QUALITY ASSURANCE PLAN**

**12.1** The bidder shall invariably furnish following information along with his offer, failing which his offer shall be rejected.

- i) Statement giving list of important raw materials, proposed to be used in the fabrication against this Specification, names of sub suppliers for the raw materials, list of standards according to which the raw materials are tested, list of tests normally carried out on raw materials in presence of Bidder's representative as routine and/or acceptance during production and on finished goods, copies of test certificates.
- ii) Information and copies of test certificates as in (i) above in respect of bought out accessories.
- iii) List of manufacturing facilities available.
- iv) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections
- v) List of testing equipment available with the Bidder for final testing as per relevant IS specified. In the case if the Bidder does not possess the entire Acceptance testing facilities the same tests shall be carried out at Govt. approved third party lab. The Purchaser reserves the right for factory inspection to verify the facts quoted in the offer. If any of the facts are found to be misleading or incorrect the offer of that Bidder will be out rightly rejected and he may be black listed. Special features provided to make it maintenance free. The Field Quality Plan (FQP) is to be submitted along with Technical Bid.

**12.2** The bidder shall also submit following information to the purchaser along with the technical Bid.

- i) List of raw materials as well as bought out accessories,



- and the name of suppliers of raw materials as well as bought out accessories.
- ii) Type test certificates of the raw material and bought out accessories.
  - iii) Quality assurance plan (QAP) with hold points for purchaser's inspection.
  - iv) The Bidders shall submit the routine test certificates of all the bought out items, accessories etc.

**13. INSPECTION :**

The inspection of fabricated tower material shall be carried out at manufacturer's works for Acceptance tests as per relevant Indian standard. The inspection of bolts-nuts, hanger, washers, step-bolts and other bought out items shall be carried out at Manufacturer's works as per relevant IS. The testing charges shall be borne by the bidder. If the testing facilities are not available for the tests to be carried out, the same shall be carried out at third party laboratory at no extra cost to the P&E Department.

The P&E Department reserves right to pick-up sample of any material from the lot received at site and get the same tested as per ISS at third party Laboratory (preferably Government Laboratory or Educational Institution). The material should pass these and if the material fails, they will be summarily rejected and Bidder should make immediate arrangement to replace them with standard materials and after getting them duly inspected. Rejected/ defective material if found during inspection shall be destroyed in presence of P&E Department's representative. The bidder shall replace the material if not found as per specific requirements, at no extra cost to the P&E Department, including testing charges. All the gauges and templates required for measurement of bend angles shall be provided by the Bidder.

**14. GENERAL GUIDE-LINE FOR INSPECTION :**

**14.1 Fabricated Structure Members:**

- i) Visual examination and quantity verification of offered lot.
- ii) Sample selection from the offered lot at a ratio of 50 MT (or part thereof) 1 no. for all tests.
- iii) Dimension, fabrication and trueness verification of structure member from fabrication sketch.
- iv) Galvanizing test of each sample i.e. dip test, hammer test and mass of zinc test.
- v) Random verification Zinc coating over galvanized surface by Elcometer.
- vi) Tensile test and bend test on each sample.
- vii) Chemical composition test on at least one sample per lot offered for inspection.
- viii) Verification of manufacturer's test certificate for mild

steel used in structure members and submission of copy of the same along with inspection report. Failing in which dispatch instruction will not be issued.

**14.2 Bolts-Nuts, Washers, Accessories, Attachments etc.:** (To be carried out at manufacture's works.)

- i) Visual examination and quantity verification of offered lot.
- ii) Sample selection from the offered lot as per relevant IS for each item.
- iii) Dimension, fabrication and trueness verification from fabrication sketch.
- iv) Galvanizing test on each sample.
- v) Other acceptance tests for respective item as per relevant Indian Standard and as per latest IS revision.
- vi) The inspection report shall be along with size and quantity shall be mentioned in each type of bolt-nuts and attachment.

**14.3** No member once rejected shall be resubmitted for inspection. Such member shall be destroyed in presence of the Inspector. and shall not prevent subsequent rejection of any item of that lot later found defective.

**15. DESPATCH INSTRUCTIONS :**

On receipt and verification of test certificates, the CE (Projects), P&E Department, Corp Off, Vadodara will issue a clearance for dispatch of inspected material. No material shall be dispatched before receipt of such dispatch instruction in writing. The bolt-Nuts and all other items procured from other manufacturer should be dispatched directly to the consignee to avoid double payment of Tax.

**16. PACKING AND MARKING ON PACKING :**

The material shall be boxed or bundled for transport in the following manner:

- i). Angle shall be packed in bundles securely wrapped four times around at each end and over 900mm. with No. 9 SWG steel wire with ends twisted tightly. Gross weight of any bundle shall not exceed approximately 450 Kg.
- ii). Cleat angles, brackets, filler plates and similar small loose pieces shall be nested and bolted together through holes wrapped round at least four times with No. 9 SWG steel wire and ends twisted tightly. Gross weight of each bundle shall not exceed 70 Kg.
- iii). The correct number of bolts, nuts and washers required for structures shall be packed in heavy gunny bags accurately tagged in accordance with the contents and a number of bags packed in a solid box of 22 mm. thick lumbers with

panel end to be accurately nailed and further reinforced with 22mmx75mm. Batons round the sides at the ends with 25mm x No. 18 SWG iron band stretched entirely around the batons with ends overlapping at least 150mm. Gross weight of each box shall not exceed approximately 70 Kg.

- iv). All above packings are subject to the approval of the P&E Department
- v). Each bundle or packing shall have the following marks :  
The name of the consignee (as per dispatch instructions given by the P&E Department.)
- vi). Ultimate destination as required by the P&E Department.  
The relevant marks and number of structure members or reference or bolts, nuts and small components like gusset plates, various attachments, etc. for easy identification.

**17. MATERIAL ACCOUNTS :**

The successful Bidder has to approach the consignee for reconciliation of the materials supplied as per approved Bill of Material (Member wise without any shortages) from time to time and get the completion certificate for receipt of complete structure quantities. All the final accounts shall be according to sectional weight basis, as per approved bills of material only based on completion certificate issued by field office.

**18. WEIGHTS :**

The unit weights of each type of structure, including bolt-nuts, accessories, attachments shall be furnished and / or to be approved by the P&E Department. The weight of structure shall mean the weight calculated by using the black sectional (i.e. un galvanised) weights of all steel members of the sizes indicated in the fabrication drawings and bills of materials without taking into consideration the reduction in weight due to drilling of bolts, holes, skew cuts, chamfering etc. or increase in weight due to galvanizing but taking into consideration the weight of the special fittings, bolts, nuts, washers and other accessories.

**19. GENERAL:**

The successful bidder shall submit Drawing/Design , Bills of Material and shop sketches in soft copy as well as in hard copy without any extra cost to the P&E Department, failing in which 10% equivalent amount of order will be with held till submission.

**20. EMBOSSING OR ENGRAVING:**

The successful Bidder wherever possible will have to provide embossing/engraving on the tower member, Manufacturer's name and trademark.

**SECTION -III**

**GUARANTEED TECHNICAL PARTICULARS OF GALVANISED STEEL TOWER**

Sl No	Particulars	Unit	Bidder's Particulars				
			Structure Member	Nuts and bolts			
<b>A</b>	<b>TOWER</b>						
1	Towers Materials		Mild steel				
2	Grade/standard						
3	Tensile breaking stress	N/mm <sup>2</sup>					
4	Elongation on breaking	%					
5	Gauge length of specimen	mm					
6	Diameter of specimen	mm					
7	Yield point as percentage of breaking stress	%					
<b>B</b>	<b>Insulators and fittings:</b>	<b>Unit</b>	<b>Insulator Unit Metalworks</b>			<b>Phase &amp; Earth conductor Metal fitting</b>	
			<b>Steel</b>	<b>Maleable Cast iron</b>	<b>Insulator Cap</b>	<b>Steel</b>	<b>Maleable Cast iron</b>
8	Grade/standard						
9	Tensile breaking stress	N/mm <sup>2</sup>					
10	Elongation on breaking	%					
11	Gauge length of specimen	mm					
12	Diameter of specimen	mm					
13	Yield point as percentage of breaking stress	%					

**PRICE SCHEDULE**

<b>Sl No</b>	<b>Items</b>	<b>Unit</b>	<b>Provisional Qty</b>	<b>Unit Rate (Inclusive of tax &amp; F&amp;I destination) (In Rupees)</b>	<b>Total Amount (Inclusive of tax &amp; F&amp;I destination) (In Rupees)</b>
1	Supply of 132kV Double Circuit Transmission line Tower, Type 'B' including Stub and Stub cleat				
	a) Super Structure with 0 meter extension for 104Nos of Tower @ $(4628.84+319.64)$ kg per tower	MT	514.64		-
	b) Super structure with 3 Meter Extension for 1 Nos of Tower @ $(4628.84+319.64+818.36)$ kgs per tower	MT	5.77		-
	c) Super Structure with 6 Meter Extension for 27 Nos of Tower $(4628.84+319.64+1624.18)$ kgs per tower	MT	177.46		-
2	Supply of Nuts& Bolt including washer for 132kV Double Circuit Transmission line, Type 'B' Tower				-
	a) Nuts & Bolts for Structure with 0 meter extension for 104Nos of towers @ $(3.58+202.96)$ kgs per tower	MT	21.48		-
	b) Nuts & Bolts for Structure with 3 Meter Extension for 1Nos of tower @ $(3.58+202.96+33.98)$ Kgs per tower	MT	0.24		-
	c) Nuts & Bolts for Structure with 6 Meter Extension for 27 Nos of Towers @ $(3.58+202.96+74.88)$ kgs per tower	MT	7.60		-
3	Supply of 132kV Double Circuit Transmission line Tower, Type 'C' including Stub and Stub cleat				-
	a) Super Structure with 0 meter extension for 10Nos of tower @ $(438.16+6120.66)$ Kgs per tower	MT	65.59		-

	b) Super Structure with 6 Meter Extension for 3 Nos of tower @ $(438.16+6120.66+2012.96)$ Kgs per tower	MT	25.72		-
4	Supply of Nuts& Bolt including washer for 132kV Double Circuit Transmission line, Type 'C' Tower				-
	a) Nuts & Bolts for Structure with 0 meter extension for 10Nos of Tower @ $(4.77+270)$ Kgs per tower	MT	2.75		-
	b) Nuts & Bolts for Structure with 6 Meter Extension for 3Nos of Tower @ $(4.77+270+67.73)$ kgs per tower	MT	1.03		-
5	Supply of 132kV Double Circuit Transmission line Tower, Type 'S' including Stub and Stub cleat				-
	a) Super Structure with 0 meter extension for 101 Nos of Tower @ $(5682.43+441)$ kgs per tower	MT	618.47		-
	b) Super Structure with 6 Meter Extension for 23Nos of tower @ $(5682.43+441+ 1905.54)$ kgs per tower	MT	184.67		-
6	Supply of Nuts& Bolt including washer for 132kV Double Circuit Transmission line, Type 'S' Tower				-
	a) Nuts & Bolts for Structure with 0 meter extension for 101 Nos of towers @ $(5+267.21)$ kgs per tower	MT	27.49		-
	b) Nuts & Bolts for Structure with 6 Meter Extension for 23 Nos of Tower @ $(5+267.21+80.05)$ Kgs per tower	MT	8.10		-
7	Supply of Stub Template for 132kV Double Circuit Transmission line.				-
	a) For Type 'B' tower suitable for 0 meter extension to 6 meter extension for 2 set of Template @ $(629.84)$ Kgs per set	MT	1.26		-

	b) For Type 'C' tower suitable for 0 meter extension to 6 meter extension for 2 set of template @736.36kgs per set	MT	1.47		-
	a) For Type 'S' tower suitable for 0 meter extension to 6 meter extension for 2 set of template @698.88 Kgs per set	MT	1.40		-
8	Supply of Nuts & Bolts for Stub Template for 132kV Double Circuit Transmission line, including Washer, etc with complete set				-
	a) For Type 'B' tower suitable for 0 meter extension to 6 meter extension for 2 set of Template @(24.73) Kgs per set	MT	0.05		-
	b) For Type 'C' tower suitable for 0 meter extension to 6 meter extension for 2 set of template @ 28.59Kgs per set	MT	0.06		-
	a) For Type 'S' tower suitable for 0 meter extension to 6 meter extension for 2 set of template @28.29 kgs per set	MT	0.06		-
<b>TOTAL</b>					-

(Rupees ..... ) only

BIDDER SIGNATURE WITH SEAL

ANNEXURE

FORM OF BANK GUARANTEE

(In lieu of Contract/Performance Guarantee Form).

To,

The Engineer-In-Chief,  
Power & Electricity Deptt.,  
Govt. of Mizoram,Aizawl.

In consideration of the Engineer-in-Chief, Power & Electricity Deptt., Govt. of Mizoram, Aizawl (Hereinafter called 'the Purchaser', the expression of which shall, unless repugnant to the subject or context, include his successors and assigns) having agreed under the terms and conditions of order No..... Dated .....made between Power & Electricity Deptt.,Govt. of Mizoram, and M/s .....(hereinafter called 'the said contract') to accept a Deed of Guarantee as herein provided for Rs. .... (Rupees .....) only from a Nationalised or Scheduled Bank in lieu of the Contract Performance Guarantee to be made by the Supplier or in lieu the deduction to be made from the Supplier's bills, for the due fulfilment, by the said Supplier, of the terms and conditions contained in the said Supply order No.....we, the ..... Bank and having its registered office at ..... (hereinafter referred to as 'the said Bank') do hereby undertake and agree to indemnify and keep indemnified the Power & Electricity Deptt.,Govt. of Mizoram from time to time to the extent of Rs. .... (Rupees .....)only i.e 10% of the total Supply value against any loss or damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Power & Electricity Deptt.,Govt. of Mizoram by reason of any breach or breaches by the said Supplier of any of the terms and conditions and to unconditionally pay the amount claimed by the Purchaser on demand and without demur to the extent aforesaid.

2. We ..... Bank further agrees that the Purchaser shall be the sole judge of and as to whether the said supplier has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, costs, charges and expenses caused to or suffered by or that may be caused to or suffered by the Power & Electricity Deptt.,Govt. of Mizoram on account thereof and the decision of the Purchaser that the said supplier has committed such breach or breaches and as to the amount or amount of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by the Power & Electricity Deptt.,Govt. of Mizoram from time to time shall be final and binding on us.
3. We, the said Bank, further agrees that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract and till all the dues of the Purchaser under the said contract or by virtue of any of the terms and conditions governing the said contract have been fully paid and its



claim satisfied or discharged and till the Purchaser certifies in writing that the terms and conditions of the said contract and accordingly discharges this Guarantee subject, however, that the Purchaser shall have no claim under this Guarantee after the expiry of the equipment Guarantee period from the date of cancellation of the said contract, as the case may be, unless a notice of the claim under this Guarantee has been served on the Bank before the expiry of the said equipment Guarantee period.

4. The Purchaser shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee or Indemnity, from time to time to vary any of the terms and conditions of the said contract or to extent time of performance by the said supplier to postpone from any time and from time to time any of the powers exercisable by it against the said supplier and either to enforce or for bear from enforcing any of the terms and conditions governing the said contract or securities available to the Purchaser and the said Bank shall not be released from its liability under these presents by any exercise by the Purchaser of the liberty with reference to the matters aforesaid or by reasons of time being given to the said supplier or any other forbearance, act or emissions on the part of the Purchaser or any indulgence by the Purchaser to the said supplier or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of so releasing the Bank from its such liability.
5. It shall not be necessary for the Purchaser to proceed against the supplier before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding any security which the Purchaser may have obtained or obtain from the supplier shall at the time when proceedings are taken against the Bank hereunder be outstanding or un-realised.
6. We the Bank lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Purchaser in writing and agree that any change in the Constitution of the said supplier or the said Bank shall not discharge our liability hereunder.

Dated this..... day of 201....

**For and on behalf of the Bank**

**The above Guarantee is accepted by me on behalf of P&E Department, Govt. of Mizoram, Aizawl**

**Engineer-in-Chief, P&E**