

## Maharashtra State Electricity Distribution Co. Ltd.

Tender Details		06-06-2024 11:06:32
Tender Code	SE/ANRC/PSC POLES/2024-25/T-06	
Tender Type	Works Tender	
Type Of Bid	Two Bid	
Description	SUPPLY OF 9m/200kg PRESTRESSED CEMENT CONCRETE POLES AS PER REC DESIGNS TO AHMEDNAGAR CIRCLE.	
Estimated Cost (In Lakhs)	27.12	
Basis of prices	NA	
Tender Validity	NA	
Delivery Requirement (In Months)	NA	
Tender on rate contract basis	NO	
Tender Fee (In INR)	2500	
GST In INR (@18% on Tender Fee: SAC No.	450	
Total Tender Fee Amount including GST in INR.	2950	
Contact	MANGESH SALIUNKHE EE ADIMIN , 8956620101 ,seahmednagar@gmail.com	
Pre-Qualifying Req	As Per Tender Terms and Condition	
Budget Type	Revenue	
Scheme Code	NA	
Scheme Name	NA	
Department	Distribution Department	
Office Type	CIRCLE	
Location Type	Ahmednagar Circle	
Designation	Executive Engineer(Distribution)	
Pre-Bid Meeting Address	Ahmednagar Circle Office	
Bid Opening Address	Ahmednagar Circle Office	
Version No	1	
Call for Deviation	NO	
Is Annexure C1 Applicable	NA	
Is Manufacturer Applicable	NO	
Is Trader Applicable	NO	
Minimum % of Offered Quantity	NA	
Is Power Supplier Applicable	NO	
Tender Sale Start Date	07-06-2024 10:00	
Tender Sale End Date	21-06-2024 15:00	
Bid Start Date	07-06-2024 11:00	
Bid End Date	21-06-2024 16:00	
Pre-Bid Meeting Date	12-06-2024 11:00	
Techno-Commercial Bid opening on	21-06-2024 17:00	
Price Bid opening on	Will be declared later	
Annexure C1 Opening Date	NA	
Winner Selection Date	Will be declared later	

Can Bidder Opt EMD Exemption	N
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**ESTIMATED COST Rs. 2712000/- (Without Transportation)**  
**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION**  
**COMPANY LIMITED**

**TENDER FOR**

**SUPPLY OF 9m/200kg PRESTRESSED CEMENT CONCRETE POLES AS PER REC  
DESIGNS TO AHMEDNAGAR CIRCLE.**

**Tender No: - SE/ANRC/PSC POLES/2024-25/T-06**

**e-TENDER SUBMITTED BY**

**M/S** \_\_\_\_\_  
\_\_\_\_\_

**Date of sale opening :- 07/06/2024**

**Date of sale closing :- 21/06/2024 Up to 15.00 Hrs.**

**Pre Bid Meeting :- 12/06/2024 at 11.00 Hrs.**

**Date of submission of bids:- 21/06/2024 Up to 17.00 Hrs. online on Web site**

**site <http://works.mahadiscom.in/eTender/etender>**

**Address-**

Office of the Superintending Engineer,  
Maharashtra State Electricity Distribution Co. Ltd.  
(Ahmednagar Circle)  
Dist-Ahmednagar Pin-414001  
Email: seahmednagar@gmail.com

**PRICE PER COPY- Rs 2950.00 (Including 18% GST)**

**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION COMPANY LTD.****BID NO. –I**

**Tenders for the supply of 9m/200 Kg pre stressed cement concrete poles as per  
REC design to **AHMEDNAGAR CIRCLE**.**

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### **e-TENDER NOTICE**

Super scribed e-tenders are invited from established pole factory owners & from reputed manufacturers having experience in Prestressed Concrete Poles and having either adequate infrastructure required for pole production or depots for delivery of poles in the state of Maharashtra and those who have separately registered on MSEDCL e-Tendering portal. The offers are required for supply of **9 m/200kg** Pre stressed Concrete solid poles as per REC design to **AHMEDNAGAR CIRCLE** as shown below.

<b>e-Tender No.</b>	<b>Name Of Work</b>	<b>Estimated Amount Rs.</b>	<b>Tender Fee Rs.</b>	<b>EMD BG/ONLINE Rs.</b>
SE/ANRC/PSC POLES/2024-25/T-06	Supply of 9 m/200kg pre stressed cement concrete poles as per REC designs to <b>AHMEDNAGAR CIRCLE.</b>	<b>2712000/-</b>	<b>2950/-</b>	<b>27120/-</b>

The details are available on MSEDCL web site <http://works.mahadiscom.in/eTender/etender>. The date of sale is from 07.06.2024 to 21.06.2024 & the date of submission of bids is 21.06.2024. The tender copy can be downloaded on non refundable payment of **cost of tender** per copy by online payment.

**Superintending Engineer  
Ahmednagar Circle**

**BID- I****Qualifying Documents:**

Scan copies of following documents shall be uploaded.

- 1) Paid EMD Money receipt
- 2) GST certificate
- 3) Registration of firm/factory
- 4) SSI Registration certificate (If applicable)
- 5) Partnership deed (If applicable)
- 6) Valid Solvency certificate of 20% of the estimated cost of tender
- 7) I.T returns of last three years
- 8) Provident Fund registration certificate
- 9) Experience of last three years—up to 80% of the tender amount
- 10) Details of Infrastructure – plan of factory, T&P, etc.
- 11) Bio-data questionnaire as given in this tender document.
- 14) Vendor Approval for PSC pole 8 m/140 Kg. & 9m/200Kg From MSEDCL.

**Note :-** EMD can be paid in Online/BG (Bank having branch at Ahmednagar)/ Unconditional Bank Guarantee from Nationalized /Scheduled Bank, in the favor of The Superintending Engineer, Ahmednagar CIRCLE, MSEDCL, Ahmednagar on or before the last date of submission of bids. If the same is not received by this Office, concerned tender will be rejected un-conditionally.

Interested tenderers shall please note that e-copy of following documents to be submitted under qualifying **bid 1** duly digitally signed & shall keep ready originals of all above documents & if required by tender scrutiny authority/committee of MSEDCL. Same shall be immediately provided before them, for verification of documents. If any agency fails to provide original documents on request of MSEDCL, his price bid will not be considered & liable for rejection.

**Superintending Engineer  
Ahmednagar Circle**

**INSTRUCTIONS TO TENDERERS: -**

- 1) Tenders for supply of PSC poles as per REC design of 8m/140Kg & 9m/200Kg used as conductor supports for transmission and distribution of LT and HT power lines are called on **item rate basis** from tenderers who qualify for the purpose. The tenderers are required to specify their qualification in the questionnaire and also furnish other pre-requisites called for to enable evaluation of their capacity in the field of manufacture/supply of PSC poles.
- 2) The qualifying tenderer shall have an established PSC pole factory or a factory premises with a manufacturing process suitable for conversion to a pre-stressed, pre-cast concrete manufacturing unit, either owned /leased/hired or exclusively under his control and the same shall be situated either in the specific location, for supply of poles as required. The period of lease and hire agreement should be one year more than time of contract period.
- 3) All the interested tenderers who have registered on MSEDCL web site <http://works.mahadiscom.in/eTender/etender> shall read carefully all the prequalifying documents requirements & fill up the prequalify bid No.1 online duly digitally signed and completing the requirement of documents as per prescribed proforma.
- 4) In case of those contractors who are not able to fulfill qualifying document requirement or those who will not quote the such references or furnish the details of tender fee & EMD etc, such tenders will be rejected and their second bid i.e. price bid will not be considered.
- 5) Second bid i.e. price bid of only those contractors will be considered, who complete or qualify after first qualifying bid.
- 6) All the original documents shall be immediately produced before tender processing committee for necessary verification, failure of which will liable for rejection.
- 7) Objections if any from other agencies who have submitted their offers, after opening must be submitted in writing only on the day of actual opening of tender through e- process or max up to next working day. Complaints/ objections in any form afterwards will not be

entertained.

**8) Price variation clause & arbitration clause are not applicable in this contract. Right to reject any or all tenders without assigning any reason whatsoever is reserved by the undersigned.**

**9) The GST/Service Tax if applicable will be reimbursed on production of documentary evidences. The GST/service tax shall be paid to Govt. Authority & for the same particular work.**

**10) ESTABLISHMENT OF FACTORY/ DEPOT FOR DELEVERY OF POLES**

As already stated, the tenderer should have either established pole factory or a depot at suitable location and shall obtain all way leaves / permission / license / registration etc. required from the Authorities direct in their name only.

**11) FACTORY INSPECTION.**

Notwithstanding anything contained herein, the Superintending Engineer, Ahmednagar Circle reserves the rights to assess the capacity and capability of performance of any tenderer by the information furnished in this tender document or from additional information as could be collected by him, and he cannot be called to question at any stage of selection of a party for placement of orders. On the same line, even discontinuation of supplies by cancellation of orders may also be affected.

**A) For bidder having existing pole factory.**

i) Capacity of the factory for supplying shall be min. 300 poles/p.m. as mentioned the size/details of poles as per tender specification.

**ii) Location of Factory.-**

Factory/ Depot should be located at a suitable location.

iii) The factory should be preferably located at the road side of National Highway/ State Highway/ Major Dist. Road.

iv)The factory should be equipped with all required pole casting bed/mixers/tension Machine, curing ponds, gantries, for loading and unloading of poles, pole testing equipments, stacking yards, cement go-downs having adequate storage capacity, repairing workshop, broken pole dumping yard and cube testing machine and



**SE/ANRC/PSC POLES/2024-25/T-06**

any other infrastructure required for smooth and quality production of poles.

**B) The bidders having no existing pole factory in the specific location of the identified districts but having a depot for delivery of poles.**

- i) The depot should be located at geographical location as stated under A (ii) & (iii) above.
- ii) The depot should have a stacking capacity of about 1000 poles at a time.
- ii) The depot should be equipped with gantries for loading and unloading of poles, pole testing equipments for testing of poles as per I.S. requirement.

**12) The right to reject any or all tenders without assigning any reason thereof, is reserved with the company.**

**Superintending Engineer  
Ahmednagar Circle**

**SIGNATURE OF TENDERER**

**BIO-DATA QUESTIONNAIRE—( to be uploaded duly filled in along with qualifying documents.)**

**Tenderer shall fill in the following questionnaire and certify as mentioned herein. Tenderer shall also attach additional sheets if the column space available is insufficient, along with schedule called for in true copies duly certified.**

1. Name of the firm :
2. Registered Address :
3. Local Address :
4. Whether factory for manufacture of PSC poles is existing/OR depot in the required area. :
  - a) If yes, the installed production capacity :
  - b) MSEDCL requires the delivery of poles within 1 month from the date of Supply Order. Whether the tenderer is able to comply the requirement. :
5. Values of relevant job (Manufacture and supply of PSC poles REC standard within Maharashtra State or outside) including organization to whom you supplied) or controlled concrete work or prestressed or post stressed concrete work etc. executed in the last 3 years including job in hand (attached separate sheet) :
6. Details as to the location map, factory layout: giving indications of space and facilities available such as number of beds, curing ponds, tools and plants, machinery such as mixers, cube testing machine, pre stressing machine, pole testing, stacks yard etc. also be submitted.
7. Whether the Tenderer agree to the commercial : terms and conditions of MSEDCL, as stipulated the tender.
8. Location of Supply :
9. Names of Directors / Partners (if partnership firm, attach partnership deed) :

**SE/ANRC/PSC POLES/2024-25/T-06****10. Registration Details :**

a) (Under Factory Act/ Workman Compensation Act./ Engagement of Labour Act/Godown Workers Act, S.S.I./M.S.I./P.F. Act/Works Contract Act.)

b) S.S.I. Registration whether you are :  
registered as a small scale industry to  
manufacture the prestressed Concrete  
Poles/products.

b-i) Please quote the authority with whom you :  
are registered & quote your registration No.  
and Date.

b-ii) Please quote the date upto which your :  
Registration is valid/ (enclose Photostate  
xerox copies of your valid S.S.I. Registration  
Certificate. Please note that if copy of valid  
S.S.I. Registration is not Received, you shall  
not be entitled for concessions applicable to  
S.S.I. units)

c) GST Tax (Central / State)

d-i) GST Tax Registration No. & date :

d-ii) Please indicate whether exemption is :  
granted to your units and details thereof

**15 A) SICOM/ REGIONAL DEVELOPMENT  
AUTHORITY ELIGIBILITY**

Whether you hold valid eligibility Certificate :  
of SICOM/ Regional Development Authority  
under Package scheme of graded incentives.  
If so enclose copy of eligibility Certificate.

16. Tax Assessment details/ Registration/ :  
Exemption GST/Other tax (Central/  
State)

17. Bankers

18. Solvency Certificate (including certificate :  
from Bankers certifying financial soundness)

- 1) I hereby certify that the information given above is true to the best of my knowledge and belief.
- 2) The true copies of the licenses /returns mentioned above are enclosed.

**SIGNATURE OF TENDERER**

**BID NO.II****TENDER FOR SUPPLY OF 8M/140Kg & 9m/200Kg PRESTRESSED CEMENT CONCRETE  
POLES TO Ahmednagar Circle.****I N D E X**

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**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.  
INSTRUCTIONS TO TENDERERS**

1. MSEDCL intends to tie up with suitable agencies who can supply prestressed cement concrete poles of size 8m/140Kg & 9m/200Kg to meet the pole requirement of **AHMEDNAGAR CIRCLE** either from the existing established pole factory or from depot, as brought out in the notice inviting e-Tender. The supply of poles shall be made to **Store Center, AHMEDNAGAR CIRCLE** existing in the jurisdiction of Ahmednagar Circle.
2. e-Tender is invited from established pole factory owners and experienced manufacturers in prestressed cement concrete poles/products having adequate infrastructure.
3. The tenderers are required to supply 8.0m/140Kg & 9m/200Kg pre stressed cement concrete poles as mentioned in the schedule B as per prescribed REC design and technical specification and drawings attached with the tender **within Two month (60 Days)**.
4. The qualifying bidder should complete assigned work order within **Two month ( 60 Days) from the date of LOA** as required by company. No extension of the delivery period shall be considered. The contractor shall complete the delivery of poles as per Schedule 'C'. In the event of short delivery, if any, within the stipulated time, the contract shall be treated as closed on the original due date of completion. In case the entire supply is completed before the Scheduled date, this date shall be considered as the date of completion and the contract will be closed.
5. Exemptions given to SSI Units for remittance of EMD in respect of purchase contracts are **not applicable** to this supply contract.
6. The Tenderers shall quote their rates for supply of poles at **Store Center under AHMEDNAGAR CIRCLE** (A'nagar), in Price Bid.
7. The successful tenderer will have to pay **Security Deposit amounting to 05 %** of tendered value in the form of cash/ D.D./Unconditional Bank Guarantee of Nationalized/Scheduled Bank in favour of MSEDCL, Ahmednagar within 10 days of the receipt of LOA. Failure to furnish the prescribed Security Deposit shall entail cancellation of Supply Order and forfeiture of earnest money.
8. Tenderer shall upload the tender with the specification and schedule of quantities and rates, drawings and other schedules duly digitally signed. Any tender not bearing the signatures of the tenderer on all the documents accompanying the tender, is liable to be rejected.

## SE/ANRC/PSC POLES/2024-25/T-06

9. Tenders which do not fulfill all or any of the above conditions or which are incomplete in any respect are liable for summary rejection.
10. Before uploading the tender offer by e-process, the tenderer shall examine closely and in detail the specifications, terms and conditions, delivery schedule etc. and carefully study the drawings and all documents which form part of the contract to be entered into by the successful tenderer.
11. Uploading of a tender by the tenderer implies that he has read the Instructions and conditions of contract etc. and has made himself aware of the scope and specifications, local conditions and other factors having bearing on the execution of contract or supply.

MSEDCL will not, however, after acceptance of contract rate, pay any extra charges for any other reasons, in case, the tenderer is found, later on, to have misjudged himself.

12. The tenderer shall arrange for transport of all materials and include all such cost in the rates quoted by him for the supply of finished poles. The tenderer shall make his own arrangements for the supply of wagons, if required by him, for the transport of his materials.
13. A schedule of quantities is included in the tender documents. It shall be clearly and definitely understood that the MSEDCL does not accept any responsibility for the correctness or the completeness of this schedule, which is liable to alteration by omission, deduction or addition at any stage at the discretion of Superintending Engineer MSEDCL, Ahmednagar Circle as set forth in the conditions of the contract.
14. The tenderer shall furnish along with the tender, information regarding the manufacture of prestressed concrete poles carried out by him in any other department and submit copies of certificates in the proof thereof.
15. Rates shall be quoted for the supply of poles as required for Ahmednagar Circle in Schedule B. **The rates shall be written in both figures and words. Rate should be quoted clearly without any condition or splitting of activity.** The tender documents shall be written legibly and shall be free from erasers, over-writing or correction of figures. Correction where unavoidable shall be made by crossing out, initialing dating and rewriting.

**In case, if the lowest bid for the rates of poles on site is feasible but the cumulative rates inclusive of transportation comes out to be reasonably high, the authority reserves the right to purchase it on site from the lowest bidder or to go with combined rates quoted by the L-1 bidder quoted combinly.**

**Competent Authority reserves right/s to distribute the work/s among the qualifying bidders who wish to match the rates with the L-1 bidder/s.**

16. The Maharashtra State Electricity Distribution Co. Ltd. or its Officer who accept the tender shall have the right for rejecting all or any of the tenders and will not be bound to accept the lowest tender nor to assign any reason, whatsoever for the rejection of any tenders

**SE/ANRC/PSC POLES/2024-25/T-06**

or all tenders. The authority accepting this tender will reserve the right to decide placing of order for such quantity considering the production capacity and other related performance. The tenderer on his part binds himself to supply any quantity so decided by the MSEDCL from his offer in part or whole, at the option of the MSEDCL.

- 17 The tenders shall remain open for acceptance, for a period of 4 (four) months from the date of opening or any other extended date for their receipt and during this period no tenderer shall be allowed to withdraw his tender. Any such withdrawal during the said period shall entail forfeiture of earnest money deposit.
- 18 The tender shall be accompanied by solvency certificate (in original) to the extent Of 20% of amount of tender cost issued by any Nationalised /Scheduled Bank in favour of the tenderer to be obtained from one Bank only without which tender will not be considered.
- 19 All royalties are required to be paid by the tenderers as also tolls, local taxes, licence fees , etc. if any and the same shall be deemed to have been included in the tendered rates. However Excise Duty and GST shall be reimbursed by the MSEDCL, if applicable which will be restricted to finished poles only, provided mentioned specifically in schedule-B . The benefit of GST shall be availed by the contractor and passed on to the MSEDCL if beneficial to the department by adjustment in the Central Excise Duty. All registers, Record and accounts in the prescribed proforma pertaining to statutory payments shall be maintained upto date by the contractor. The statutory requirements of Excise Department such as auditing/costing by Chartered Accountant etc. shall be complied with by the contractor. All the statutory licenses as per Act of Central/state Government/ Local Bodies are required to be obtained by the contractors in their name without any liability to the MSEDCL. The tenderers shall indicate in their offer their GST registration no. and also whether they are exempted from payment of GST or opting for. The contractor shall avail all benefits/incentives for the payment of statutory taxes being made available to their units by the Central/State Government from time to time and pass on the same to the MSEDCL.
- 20 These instructions to the tenderers shall also form part of the contract.
- 21 Tenders having conditions, which are at variance with the MSEDCL's standard terms and conditions, shall be summarily rejected.

**NOTES:**

Special attention is invited to the requirement that all corrections must be initialed and dated by the tenderer and that all the pages shall required the digital signature of the tenderer at the foot of each page.

**SUPERINTENDING ENGINEER**  
**Ahmednagar Circle**

**Dated :**

Digital - Signature, Name and Address  
of the Tenderer.

**Dated:**



**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.  
SPECIAL CONDITIONS OF THE CONTRACT**

**1. Scope of Contract**

The tenderers are required to supply the 8m/140Kg & 9m/200Kg Pre stressed cement concrete poles as per prescribed REC design, technical specifications and drawings attached with the tender, within a period of **Two month** to Ahmednagar Circle.

- 2. Time Limit:** - Successful bidder should make available the required quantity of poles in a phased manner limited up to **Two Month (60 days) max.** from the date of LOA. The first delivery of the required poles to the capacity of 25% of total requirement should be done within a week from date of LOA.

**3. Security Deposit**

The successful tenderer will have to pay security deposit amounting to **05 % of** tendered value in the form of Online/Unconditional Bank Guarantee of Nationalized/Scheduled Bank in favour of MSEDCL, Ahmednagar towards the performance of the contract. The Security Deposit is payable in the office of the Superintending Engineer Ahmednagar Circle, Ahmednagar. Non-remittance of the same shall entail forfeiture of the earnest money deposit in full. In the event of the failure to execute the order/non fulfillment of the terms and conditions of contracts, security deposit shall be liable to be forfeited or apportioned towards amount due or becoming due from the contractor.

**4. Departmental Supply of Materials**

No departmental supply of material will be made to the contractor under this tender and they will have to arrange for procurement of the same.

**5. Tax Royalties etc.**

- a) **Raw materials:** All levies such as GST/Octroi, Royalty or any other duty payable for the materials required for the manufacture of the poles shall be borne by the contractor. The element of tax shall be deemed to have been covered in the rate quoted by the tenderer and any concessions / set off available should be considered while quoting the rates. All amounts due on this account shall be paid to the appropriate authorities directly by the contractor. In case the above levies are not paid by the contractor, the same shall be Recoverable, in case of demand from the concerned authorities. The contractor shall not be entitled for any refund on this account in such cases.
- b) **Finished Poles:** The statutory levies such as GST/VAT/excise duty/C.S.T. shall be paid by the MSEDCL, if applicable, on finished poles at the scheduled rate, provided mentioned specifically in schedule B.

**6. Delivery of Poles and Penalty**

In case the contractor fails to deliver the entire qty of poles, penalty shall be levied upto ½% (half) percent of the value of the undelivered portion of supply per week or part thereof subject to a maximum of 10% of the contract value, save for the loss of production on account of the following reasons:

- a) Non-lifting of poles by the MSEDCL resulting in accumulation of more than 300 poles at a time and closure of production thereof.
- b) Heavy rainfall in the area, which has paralyzed the production schedule (to be supported with documents).
- c) Force majeure viz. natural calamities.
- d) General strike of essential services such as transport railway and traders.
- e) Shortage of water supply in the vicinity of contractor's factory due to acute drought conditions (to be supported by certificates from the Revenue authority).

**7. Specification of Poles**

The manufacture and supply of poles shall be carried out in accordance with the REC design, specification and drawings appended with this tender and also as per instructions given at site by the MSEDCL's Engineer. The poles which do not stand the prescribed test as detailed under technical specifications appended herewith shall be rejected. It is instructed that following words i.e. **"MSEDCL A'NAGAR"** must be embossed on Poles.

**8. Quality Check**

Quality of the poles will be ascertained by the Ex. Engineer/Addl. Executive Engineer (Civil) of Ahmednagar Circle. If the poles are stacked in Depot. The quality checks will be ascertained by random sampling method/s.

In a batch process, the Quality will be ascertained for every batch by the concerned competent authority.

**9. Subletting of Contract**

The contract or any part thereof shall not be assigned or sublet without the written permission of the Superintending Engineer, Ahmednagar Circle. In case such permission is granted, the responsibility for executing the contract according to the specifications and within the stipulated time shall be entirely rest with the successful tenderer.

In respect of the subletting of work in terms of labour contract, if any, it shall be sole responsibility of the MSEDCL's main contractor to guard that none of the requirements of the Maharashtra Contract Labour (Regulation and Abolition) Act and Rules (1971) get infringed. The contractor shall indemnify the MSEDCL in respect of any action that may be brought by the Government against the MSEDCL, if any, in this respect.

**10. Liquidated Damages.**

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In the event of the failure of the contractor to execute the contract partly or wholly by the contractor, the MSEDCL may make the purchase elsewhere after giving due notice to the contractor to this effect and at his **risk and cost** such quantity not so delivered, without canceling the contract or to cancel the contract reserving the right to recover the damages in accordance with the provisions of Indian Contract Act.

**11. Terms of Payment.**

100% payment will be made on the poles actually lifted from the factory duly tested on production of material requisition, gate pass and test certificate issued by the MSEDCL's authorized officer within reasonable time as per availability of Funds.

If the poles are not lifted after curing and testing the particular lot, 90% on account payment will be effected. The remaining 10% will be paid on submission of R.A. bills and after lifting of such poles on production of materials requisition, gate pass etc.

**12. Lifting of Poles.**

The contractor shall extend due facilities available with him at all times such as gantry, chain pulley blocks etc. for loading of poles in MSEDCL's hired trucks while taking delivery from contractor's works, free of charge.

**13. Disputes.**

If at any time any question, dispute or difference arise, between the Engineer-in-charge and the contractor, either party may forthwith give to the other one months notice in writing of the existence of such question dispute or difference and the same shall be referred to the Superintending Engineer, Ahmednagar Circle. The decision of the Superintending Engineer, Ahmednagar Circle about the issue shall be final, conclusive and binding on the contractor.

**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.****TEHCHNICAL SPECIFICATIONS**

- 1.0 The tender for the poles shall be in accordance with the specifications and the drawing enclosed with the tender. Alternative design/specifications shall not be considered which may be noted.
- 2.0 The Contractor shall furnish the manufacturer's test certificate in respect of H.T. wire, and cement purchased by him and the same shall conform to the relevant Indian Standard Specification. It is expected that the contractor shall use the lot of H.T. wire and cement only after satisfying himself as to its quality regarding U.T.S., proof stress and compressive strength setting time etc. for the H.T. wire and cement respectively.  
 Insertion of 8 SWG G.I.wire is to be made in such a way that it does not touch H.T. wire, anywhere during concreting and about 100 mm projections are left out from the face of the pole as directed.  
 The contractor shall also arrange for the necessary test on the materials like metal, sand, water etc. and shall see that the materials to be used in the manufacture conform to ISI Standards. The sand shall be washed before use by installing a sand washing machine in the factory and the same shall not contain silt and deleterious material.  
 Since the design of concrete mix takes almost a month or more the contractor is expected to send the samples of the material to nearby Engineering College/Polytechnic/Test House etc. well in advance so that by the time the construction of the factory is over the production of poles could be started without loss of time.  
 It will be the responsibility of the Contractor to make available all the test reports for inspection by the MSEDCL's representative. The expenditure on this account is deemed to have been included in the rate quoted by the Contractor.
- 3.0 All inspection shall be carried out with the responsibility of the contractor regardless of whether or not the MSEDCL's inspectors or agents are appointed or present during the test. In case any representatives of the MSEDCL are deputed they shall have free access to the contractor's works at any time during working hours for the purpose of inspection of manufacture and test on poles and materials.
- 4.0 The workmanship shall be of a high order and poles having flaws and defects would be rejected.
- 5.0 The poles shall be delivered within one month from the date of LOA.
- 6.0 The poles shall generally conform to I.S. standards and specifications Recommended by REC and as per details given separately.



**SE/ANRC/PSC POLES/2024-25/T-06****12.1 CRITERIA OF CONFORMITY**

A lot or sub-lot shall be considered as conforming to the specification if the conditions given below are satisfied.

- 12.1.1 The number of poles which do not satisfy the requirement of overall length, cross section and uprightness shall not exceed the corresponding number of defective samples given in the above table. If the number of such poles exceed the corresponding number, all poles in the lot or sub-lot shall be tested for these requirements and those not satisfying the test shall be rejected.
- 12.1.2 All the poles tested for transverse strength test shall satisfy the requirement of test as below:
- a) No hair cracks shall appear upto the application of the working load i.e. 140 kg
  - b) The pole should not fail at a load less than the design ultimate load i.e. 350 kg and all the cracks produced during testing should disappear on removal of load.
- 12.1.3 The pole which satisfies all the above conditions is deemed to have passed the test and hence acceptable. The poles subjected to test and found to have passed shall be issued for work. If one or more poles fail, twice the number of poles originally tested shall be selected from those already selected and subjected to the test. If there is no failure among these poles, the lot or sub-lot shall be considered to have satisfied the requirements of this test. If one or more poles of the second sample fail, the lot or sub-lot represented by the corresponding sample shall be considered not to have passed the test.
- 12.1.4 No pole is required to be tested till failure but the poles are to be tested only up to the design ultimate load. i.e. 350 kg. The poles tested up to designed ultimate load shall have Recovery of deflection more than 85% within 24 hours.

**12.2 Transverse Strength Test****12.2.1 General**

The poles shall be tested in the horizontal position. Provision shall be made by suitable support to compensate for the over hanging weight of the pole. For this purpose the over hanging portion of the pole may be supported on a movable trolley or similar device. The frictional resistance of the supporting devices should be separately determined and deducted from the total final load applied on the pole (read Sub Clause 12.2.4 below).

**12.2.2 Loading**

The load shall be applied at a point 600mm from the top of the pole by means of a suitable device such a wire rope and a winch placed in a direction normal to the direction of length of the pole, so that the minimum length of the straight rope under pull (excluding the curved portion near the transmitting device) is not less than the length of the pole. If the loading device is set sufficiently far away from the pole to make the angle between the initial and the final position of the pulling line small, the error in assuming that the pull is always perpendicular to the original direction of the pole axis, will be negligible. The pulling line shall be kept in level between the winch position and the point where the load is applied to the pole.

**12.2.3 Pulling Line**

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The pulling line shall be secured around the load point. Load measuring device shall be placed in a way so as to accurately measure the tension in the pulling line, the other end of which is attached to the loading equipment (winch).

**12.2.4 Load Measurement.**

Dynamometer or any other satisfactory method of load measurement may be adopted. The Dynamometer or other load measuring device shall be calibrated at regular intervals. The load measuring device shall be supported in such a way that the force required to pull it shall not add materially to the measured load on the pole and that no damage is caused to the instrument if the pole suddenly breaks under test. The frictional resistance of the supporting devices and the rope line pulleys shall be separately determined and necessary corrections applied to the readings of the dynamometer or other load measuring device.

**12.2.5 Procedure.**

Load shall be applied at 600mm from the top of the poles at right angles to the axis of the pole and shall be steadily and gradually increased to design value of the working load. The deflection at this point shall be measured. No crack shall appear till this load. The load shall then be reduced to zero and increased gradually to a load equal to the first crack load plus 10 percent of the min. ultimate transverse load and held for two minutes. This procedure shall be repeated until the load reaches the value of 60% and further 80% of the ultimate transverse load. The deflection at this load point shall be measured. The load shall be brought to zero and thereafter increased by intervals of 5% of the ultimate transverse load.

12.2.6 Each time the load is applied, it shall be held for 2 minutes. The testing of pole shall be done till the ultimate design load.

12.2.7 One out of 200 poles shall be tested up to design ultimate load, as per the above procedure. The Recovery of deflection at design ultimate load shall be more than 85% within 24 hours.

12.2.8 **Planting Depth.** It shall be 1.5 mts. from the bottom of the pole.

**12.3 Recording of Load and Measurement.**

12.3.1 Any hair cracks appearing at a stage prior to the application of 60% of the min. ultimate transverse load shall be recorded. It should also be Recorded whether the hair cracks if any, produced on application of the 60% of the min. ultimate transverse load close up on the removal or reduction of the test load.

**12.3.2 Measurement of Cover.**

After completion of transverse strength test, the sample pole shall be taken and checked for cover. The cover shall be measured to the nearest millimeter at 3 points, one within 1.8 m of the butt end of the pole, the second within 0.6 m from the top and the third at any intermediate point.

**12.4 Marking.**

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The pole shall be clearly and indelibly marked with following particulars either during or after manufacture but before testing at a position so as to be easily read after erection in position.

- a) Month and year of Manufacture.
- b) Class of Pole (8m/140Kg & 9m/200Kg )
- c) Manufacturer's serial no. or mark.
- d) Planting Depth at 1.5 mt. From the bottom.
- e) MSEDCL A'NAGAR on each Pole.

12.5 The direction in which the pole is to be placed at site shall be suitably marked.

**12.6 General**

The testing of poles shall be done in the presence of MSEDCL's representative. The date of test shall be notified by the supplier in advance, so as to enable the MSEDCL's Officer to associate with the test.

The poles which are rejected shall be kept in a separate lot duly marked to ensure that the same do not get mixed with the good poles. Breakages due to any reasons within the factory premises shall be to the supplier's account.



## TEST REPORT OF POLES

Lot No.              Test No.              Date:                              Size : 8m/140Kg  
Pole No.              Date of Casting:

Pole manufactured with 8 Nos.  
of H.T. Wire having U.T.S.  
175kg/sqmm and 0.1% proof  
stress not less than 140 kg/mm<sup>2</sup>

Cement concrete cube test

1) At 3<sup>rd</sup> day=..... Kg/cm<sup>2</sup>

2) At 28<sup>th</sup> day=.....Kg/Cm<sup>2</sup>

Load in Kg. (140 Kg/W/L)	Deflection in Cms.	Permanent deflection in set Cms.	Remarks
0		Each time the load is applied it shall be held for 2 minutes.	
35			
70			
105			
140			Working load.
0			
175			
0			
210			
0			
245			
0			
280			
0			
298			



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315

332

350

Gradual

Reduction to 0

Design Ultimate load.

Name and signature of Officer Present.

1)

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2)

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3)

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- a) Certified that the test carried out in my presence on----- and according to the specification and procedure of the test prescribed for PSC Poles.
- b) Certified that the Recovery of deflection at ultimate load is more than 85% within 24 hours.
- c) Certified that the Test Report is found to be satisfactory/Unsatisfactory.

**DESIGN DATA**

**PARTICULARS OF 8.0m/ 140 Kg. & 9m/ 200Kg PRESTRESSED CEMENT CONCRETE  
POLES AS PER REC DESIGN.**

<b>Details</b>	<b>8m/140Kg Poles</b>
1. Working load	140 kg acting at 0.6 m from
2. Factor of Safety	2.5
3. Ultimate Load	350
4. First crack load (permissible) 250 kg	Not less than 175 kg
5. Strength of 4 mm H.T. Wire	a) U.T.S. 175Kg. /sqmm b) Proof Stress 1% of U.T.S.
6. Strength of concrete at 28 days	420 Kg/sqmm.
7. Minimum strength of Concrete on Release.	210 Kg/sqmm.
8. Planting depth.	Not to exceed 1.5 mts.

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Details	9m/200 Kg Poles
1. Working load	200 kg acting at 0.6 m from
2. Factor of Safety	2.5
3. Ultimate Load	500
4. First crack load (permissible) 250 kg	Above 175 KG
5. Strength of 4 mm H.T. Wire	a) U.T.S. 17500Kg. /sqcm b) Proof Stress 1% of U.T.S.
6. Strength of concrete at 28 days	421 Kg/sqmm
7. Minimum strength of Concrete on Release.	210 Kg/sqmm
8. Planting depth.	Not to exceed 1.5 mts.

## MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD

## GENERAL GUIDELINE FOR CONSUMPTION OF MATERIALS

Sr.No.	Description	8.0m/140Kg.
		Quantity
1.	O.P. Cement (53 grade) Conforming to I.S. 12269 / 1987	1.38 Bags
2.	4 mm.H.T. Wire	7.24 Kg
3.	8 SWG GI Wire	0.70 kg
5.	Concrete Quantity per pole	0.137 Cum

**Note:**

The quantity shown above is inclusive of wastage @ 5% on cement, 2% on H.T. Wire and 5% on G.I. Wire over the theoretical quantity required per pole.

## MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.

**SCHEDULE “B”****(To be uploaded in BID-II)****Description of supply Item:**

Supply of 8m/140Kg & 9m/200 Kg Pre stressed Cement Concrete Solid poles as per REC design, specification and drawings for **Ahmednagar Circle** by existing factory/ depot.

Sr. No.	Type of Pole	Tentative Scope	Schedule Rate per pole w/o Transportation & W/o Tax (Rs.)	Cost per pole (excluding GST) in Rs.	Transportation charges/ pole (excluding GST) in Rs.	Total Rate (per pole in figures and words) (in Rs.) Excluding GST	Total Amount (Rs.)
1	2	3	4	5	6	7=5+6	8
1.	8m/140Kg						Limited to Rs.2712000/-
2.	9m/200Kg	1000	2712				

- The rate quoted by us is for supply of 8m/140Kg & 9m/200Kg PSC pole. The rate quoted is for supply at MSEDCL AHMEDNAGAR Circle Store Center (A'nagar) with testing and loading arrangements.
- Separate sheets showing the rate analysis and basic prices adopted for cement, 4mm H.T. Wire and 8 SWG GI Wire in support of the rates quoted are furnished. The element of tax is separately indicated in the basic price of raw materials.
- We are availing of the facilities/concessions extended by the Central Ex. Authority/ Sales Tax authority, the details of which are given in the questionnaire enclosed.
- As on date the following statutory levies (Taxes) will be payable by the MSEDCL**
  - 
  -
- We agree for the delivery of poles within Two month from the date of Receipt of order and also agree for the delivery program as directed.
- We agree to avail the benefit under GST and pass it on to the MSEDCL, if beneficial to the MSEDCL by adjustment in the Excise Duty.
- We Agree to Match L-1 bidder rate and are ready to supply pole at rate quoted by L-1 bidder **Yes/No**

**Signature of the Tenderer**

4. TECHNICAL SPECIFICATION**4.1****GENERAL:**

These specifications are intended for general description of the items in Schedule 'B' and that of technical specification on the contents of Schedule 'B' shall be prevail. No claim on account of any deviation as stated above shall be entertained by the MSEDCL which please note. The contractor has to quote his rates based on content of tender items or Schedule 'B', which please note.

The specifications are not intended to cover minutes detailed, and the works shall be executed in accordance with the best prevailing practice in Building and Communication, PWD, Irrigation and Power Deptt. of the Govt. of Maharashtra. The clarification to any clause shall be sought from the 'Standard Specifications' (Editions of 1965 or later edition corresponding to relevant items) of Building & Communications, PWD, Department of Government of Maharashtra together with concerned IS Specifications as referred to therein.

In the event of any controversies in these specifications, the decision of the Executive Engineer (Civil) MSEDCL shall be treated as final and binding upon the contractor.

- 4.1.1 All gold, silver, oil or other materials of any description and all precious stones, coins, treasures, relics and other similar things which may be found in or upon the site shall be the property of the MSEDCL and the contractor shall duly preserve the same and from time to time deliver the same to such person or person as the MSEDCL may from time to time appoint to receive the same.

The work to be carried out under this specifications shall consist of furnishing all tools, plants, labours, materials and everything necessary whether or not such items are specially stated herein for carrying out work under the specifications and as shown on the drawing, and as directed by Engineer all operations covered, within the intent and purpose of item or work.

The work under this contract shall be Labour contract for production of 8 m/9 m long pre-stressed concrete poles by deploying/arranging skilled/semi-skilled/un-skilled man power at PSC pole factory.

The detailed item wise specifications are elaborated further in this volume. There will be no supply of MSEDCL's materials except cement as shown under Schedule 'A'. All other materials, labour, equipment, machinery are to be procured and arranged by the contractor at his own cost.

This is firm rate contract and no price escalation and variation is payable in any case. The contract price is inclusive of all leads, all taxes, duties, royalties and all other incidental charges and are to be borne by the Bidder/Contractor.

**4.2**

**Applicable Standards** - The standards will be applicable as per relevant I.S codes for works.

**4.3**

**Service Conditions** -. The project site is connected by approach roads.

**4.4**

**Inspection** - MSEDCL authorized Person will inspect the site as and when required. Any defect found during execution of work shall be



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rectified immediately. The bidder shall provide all facilities for caring out the inspection/special test and other routine test as per specifications.

**4.5 Departmental supply of Materials** - Except Schedule 'A' material, department will not supply any material required for the work. All the material, machineries, labour, T&P are to be procured /arranged by the contractor at his own cost.

**4.6 Time Limit** – The time limit for this work will be 05 (FIVE) months from the date of handing over of site or till the completion of targeted production of PSC Poles ,whichever is later.. The contractor shall commence his site mobilization and other preparing work immediately after intimation in writing. If required, the contractor will be asked to work in two shifts also.

**DETAILED ITEM WISE SPECIFICATIONS:-**

**NOTE:** All the Technical Specifications for the civil works shall be in accordance with the relevant Technical Specifications of B & C Department.

**REC Specification – 15/1979****PRESTRESSED CEMENT CONCRETE POLES****(F.O.S.25) FOR 11 KV AND LT LINES****FOREWORD**

A research project for evolving economical designs of cement concrete poles for use on 11 KV and LT Lines was entrusted to the Cement Research Institute (CRI) of India. The basic design parameters for these poles as given in Clause 6 of this Specification were approved by the Fifth Conference on standardization of specifications and Construction Practices in Rural Electrification held in May-1974. Some of these design parameters which were based on certain foreign codes/practices and certain other provision of this specification, although at variance with the stipulations of IS:1678-1960, had been adopted to achieve economy in the designs. However, these modifications have since been incorporated in the revised IS:1678-1978.

This specification, drawn up in consultation with the CRI and ISI had been issued after approval by the Technical Committee on Standardization in its meeting held in April, 1978 and subsequently by the Eighth Conference on Standardization, Research and Training in Rural Electrification held in February-1979. Based on certain practical difficulties experienced by the SEBs, some amendments to this specification were approved by the 9<sup>th</sup> & 10<sup>th</sup> Conference on Standardization, Technical Development and Training in Rural Electrification held in April-1981 and April-1983 respectively. These amendments relate to provision of full length un-tensioned wires in lieu of part length wires, grouping of pre-stressing wires and the position of earth wire in the pole. The revised specification incorporates all these amendments.

1. **SCOPE -**

This specification covers PCC poles with an overall length of 7.5 , 8.0 M and 9.0 M suitable for use in overhead 11 KV and L.T. power lines and double pole structures for 11/0.4 KV substations.

2. **APPLICABLE STANDARDS -**

Expect when they conflict with specific requirements in this specification, the poles shall comply with the relevant provision made in the following Indian Standard Specification.

- a) IS: 1678-1978, Specification for pre-stressed concrete poles for overhead power, traction and telecommunication lines.
- b) IS: 2905-1966, Method of test for concrete poles for over-head power and telecommunication lines.
- c) IS: 7321-1974, Code of practice for selection handling and erection of concrete poles for over-head power and telecommunication lines.

3. **TERMINOLOGY -**

For the purpose of this standard, the following definitions shall apply;

3.1 **Average Permanent Load -**

That fraction of the working load which may be considered of long duration over a period of one year.

3.2 **Load factor -**

The ratio of ultimate transverse loads to the transverse load the first crack.

3.3 **Transverse -**

The direction of the line bisecting the angle contained by the conductor at the pole. In the case of a straight run, this will be normal to the run of the line.

3.4 **Transverse Load at First Crack -**

For design, the transverse load at first crack shall be taken as not less than the value of the working load.

3.5 **Working Load -**

The maximum load in the transverse direction, that is ever likely to occur, including the wind pressure on the pole. This load is assumed to act at a point 600 mm below the top with the butt end of the pole planted to the required depth as intended in the design.

3.6 **Ultimate Failure -**

The conditions existing when the pole ceases to sustain a load increment owing to either crushing of concrete, or snapping of the pre-stressing tend on or permanent stretching of the steel in any part of the pole.

### 3.7 **Ultimate Transverse Load -**

The load at which failure occurs, when it is applied at a point 600 mm below the top and perpendicular to the axis of the pole along the transverse direction with the butt end of the pole planted to the required depth as intended in the design.

## 4. **APPLICATION -**

### 4.1 **7.5 M and 8.0 M poles -**

These poles shall be used at tangent locations for 11KV and L.T. lines in wind pressure zones of 50 Kg/M<sup>2</sup>, 75 Kg/M<sup>2</sup> and 100 Kg/M<sup>2</sup> in accordance with REC Construction Standards referred to in the following table;

<b>Pole length</b>	<b>Line description</b>	<b>Reference to REC Constn. Stds.</b>
8.0 M	11 KV lines without earth wire L.T. lines, horizontal formation.	A-5, B-6
9.0 M	11 KV lines without earth wire L.T. lines, vertical formation.	F-1 to F-4

The adoptable spans shall be as per REC Construction Standards A-8 (for 11 KV Lines) and B-8 (for L.T. Lines).

### 4.2 **9.0 M Poles -**

These poles shall be used for double pole structures of distribution transformer centers as per REC Construction Standards F-1 to F-4 and for special locations in 11 KV and L.T. Lines, such as road crossings, etc.

## 5. **MATERIALS -**

### 5.1 **Cement -**

The cement used in the manufacture of pre-stressed concrete poles shall be ordinary or rapid hardening Portland cement conforming to IS:269-1976 (Specification for ordinary and low heat Portland cement) or IS:8041 E-1978 (Specification for rapid hardening Portland cement).

### 5.2 **Aggregates -**

Aggregates used for the manufacture of pre-stressed concrete poles shall conform to IS:383-1970 (Specification for coarse and fine aggregates from natural sources for concrete). The nominal maximum size of aggregates shall in no case exceed 12 mm.

### 5.3 **Water -**

Water should be free from chlorides, sulphates, other salts and organic matter. Portable water will be generally suitable.

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5.4 **Admixtures -**

Admixtures should not contain, Calcium, Chloride or other chlorides and salts which are likely to promote corrosion of pre-stressing steel.

5.5 **Pre-stressing steel -**

The pre-stressing steel wires, including those used as un-tensioned wires (See Annex-I) should conform to IS:1785 (Part-I)-1966 (Specification for plain cold drawn steel wire for pre-stressed concrete. Part-I cold drawn stress relieved wire), IS:1785 (Part-II)-1967 (Specification for indented wire for pre-stressed concrete). The type designs given in Annexure-I are for plain wires of 4 mm diameter with a guaranteed ultimate strength of 175Kg/mm<sup>2</sup>.

5.6 **The concrete mix** shall be designed to the requirements laid down

for controlled concrete (also called design mix concrete) in IS: 1343-1980 (Code of practice for pre-stressed concrete) and IS: 456-1978 (Code of practice for plain and reinforced concrete), subject to the following special conditions;

- a) Minimum works cube strength at 28 days should be at least 420 Kg/cm<sup>2</sup>.
- b) The concrete strength at transfer should be at least 210 Kg/cm<sup>2</sup>.
- c) The mix should contain at least 380 Kg. of cement per cubic meter of concrete.
- d) The mix should contain as low water content as is consistent with adequate workability. If it becomes necessary to add water to increase the workability, the cement content also should be raised in such a way that the original value of water-cement ratio is maintained.

6. **DESIGN REQUIREMENTS -**

The poles shall be designed for the following requirements;

- a) The poles shall be planted directly in the ground with a planting depth of 1.5 meters.
- b) The working load on the poles should correspond to those that are likely to come on the pole during their service life. Designs given in Annexure-I are for 140 Kg. and 200 Kg. applied at 0.6 M from top.
- c) The factor of safety for all these poles shall not be less than 2.5.
- d) The average permanent load should be 40% of the working load.
- e) The F.O.S against first crack load shall be 1.0.
- f) At average permanent load, permissible tensile stress in concrete shall be 30 Kg/cm<sup>2</sup>.
- g) At the design value of first crack load, the modulus of rupture shall not exceed 55.2 Kg/cm<sup>2</sup> for mM-420 concrete.
- h) The ultimate moment capacity in the longitudinal direction should be at least ¼ of that in the transverse direction.

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- i) The maximum compressive stress in concrete at the time of transfer of pre-stress should not exceed 0.8 times the cube strength.
- j) The concrete strength at transfer shall not be less than half the 28 days strength ensured in the design, i.e.  $420 \times 0.5 = 210 \text{ Kg/cm}^2$ .

For model check calculations on the design of poles, referred to in Annexure-I, a reference may be made to the REC “Manufacturing of solid PCC poles, Part-I – Design Aspects”.

- 6.1 The cross-sectional dimensions and the details of pre-stressing wire should conform to the particulars given in Annexure-I.  
The provision of holes for fixing cross-arms and other fixtures should conform to the REC standards referred to in clause-4 of this specification and in accordance with the construction practices adopted by the State Electricity Company.

7

**MANUFACTURE -**

- 7.1 All pre-stressing wires and reinforcements shall be accurately fixed as shown in the drawings and maintained in position during manufacture. The un-tensioned reinforcement, as indicated in the drawings, should be held in position by the use of stirrups which should go round all the wires.
- 7.2 All wires shall be accurately stretched with uniform pre-stress in each wire. Each wire or group of wires shall be anchored positively during casting. Care shall be taken to see that the anchorages do not yield before the concrete attains the necessary strength.
- 7.3 **Cover -**  
The cover of concrete measured from the outside of the pre-stressing tendon shall be normally 20 mm.
- 7.4 **Welding and Lapping of Steel -**  
The high tensile steel wire shall be continuous over the entire length of the tendon. Welding shall not be allowed in any case. However, jointing or coupling may be permitted provided the strength of the joint or coupling is not less than the strength of each individual wire.
- 7.5 **Compacting -**  
Concrete shall be compacted by spinning, vibrating, shocking or other suitable mechanical means, hand compaction shall not be permitted.
- 7.6 **Curing -**  
The concrete shall be covered with a layer of sacking, canvas, hessians or similar absorbent material and kept constantly wet up to the time when the strength of concrete is at least equal to the minimum strength of concrete transfer of pre-stress. Thereafter, the pole may be removed from the mould and watered at intervals should depend on the atmospheric humidity and temperature.
- 7.7 The pre-stressing wires shall be de-tensioned only after the concrete has attained the specified strength at transfer (i.e.  $210 \text{ Kg/cm}^2$ ).  
The cubes cast for the purpose of determining the strength at transfer should be cured, as far as possible, under conditions

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similar to those under which the poles are cured. The transfer stage shall be determined based on the daily test carried out on concrete

Cubes till the specified strength indicated above is reached. Thereafter the test on concrete shall be carried out as detailed in IS: 1343-1960 (Code of practice for plain and reinforced concrete). The manufacturer shall supply when required by the purchaser or his representative, result of compressive test conducted in accordance with IS: 456-1964 (Code of practice for plain and reinforced concrete) on concrete used for the poles. If the purchaser so desires, the manufacturer shall supply cubes for test purposes and such cubes shall be tested in accordance with IS: 456-1964 (Code of practice for plain and reinforced concrete).

The de-tensioning shall be done by slowly releasing the wires, without imparting shock or sudden load to the poles. The rate of de-tensioning may be controlled by any suitable means either mechanical (screw type) or hydraulic.

The poles shall not be de-tensioned or released by cutting the pre-stressing wires using flames or bar croppers while the wires are still under tension.

- 7.8 **Separate eye-hooks or holes** shall be provided for handling and transport, one each at a distance of 0.15 times the overall length, from either end of the pole. Eye-hooks, if provided, should be properly anchored and should be on the face that has the shorter dimension of the cross-section. Holes, if provided for lifting purpose, should be perpendicular to the broad face of the pole.

Stacking should be done in such a manner that the broad side of the pole is vertical. Each tier in the stack should be supported on timber sleepers located at 0.15 times the overall length, measured from the end. The timber supports in the stack should be aligned in a vertical line.

Poles should be transported with their broad faces placed vertically and in such a manner that shocks are avoided. Supports should be so arranged that they are located approx at a distance equal to 0.15 times the overall length from the ends. The erection of the pole should be carried out in such a way that the erection loads are applied so as to cause moment with respect to the major axis i.e. the rope used for hoisting the pole should be parallel to the broader face of the pole.

7.9 **EARTHING –**

- 7.9.1 Earthing shall be provided by having a length of 8 SWG GI wire embedded in concrete during manufacture and the ends of the wires left projecting from the pole to a length of 50 mm. At 250 mm from top and 150 mm below ground level.
- 7.9.2 The earth wire shall not be allowed to come in contact with the pre-stressing wires.



**7.10 GENERAL –**

For future details on the process of manufacturer a reference may be made to REC “Manual on Manufacturing of Solid PCC Poles Part-II Manufacturing Aspects”.

**8. TESTS -****8.1 Transverse Strength Test –**

8.1.1 Pole made from Ordinary Portland Cement shall be tested only on the completion of 28 days and poles made from rapid-hardening cement only of the completion of 14 days, after the day of manufacture.

8.1.2 The pole may be tested in either horizontal or vertical position. If tested in horizontal position provisions shall be made to compensate for the overhanging weight of the pole, for this purpose the over-hanging portion of the pole may be supported on a movable trolley or similar device.

8.1.3 The pole shall be rigidly supported at the butt end for a distance equal to the agreed depth of planting i.e. 1.5 M.

8.1.4 Load shall be applied at a point 600 mm from the top of the pole and shall be steadily and gradually increased to design value of the transverse load at first crack. The deflection at this load shall be measured.

A pre-stressed concrete pole shall be deemed not to have passed the test if visible cracks appear at a stage prior to the application of the design transverse load for the first crack.

The load shall then be reduced to zero and increase gradually to a load equal to the first crack load plus 10% of the minimum ultimate transverse load, and held up for 2 minutes. This procedure shall be repeated until the load reaches the value of 80 percent of the minimum ultimate transverse load and thereafter increased by 5 percent of the minimum ultimate transverse load until failure occurs. Each time the load is applied to pre-stressed concrete pole at the point of failure shall be measured to the nearest five kilograms.

The pole shall be deemed not to have passed the test if the observed ultimate transverse load is less than design ultimate transverse load.

**8.2 Measurement of Cover -**

After completion of transverse strength test, the sample pole shall be taken and checked for cover. The cover of the pole shall be measured at 3 points, one within 1.8 meters from the butt end of the pole, the second within 0.6 meter from the top and the third at an intermediate point and the mean value compared with the specified value.

The mean value of the measured cover should not differ by more than ( $\pm$ ) 1 mm from the specified cover. The individual values should not differ by more than ( $\pm$ ) 3 mm from specified value.

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If these requirements are not met, the workmanship with reference to aligning of the end plates and pre-stressing wires and assembly of moulds should be improved and inspection at pre-production stage tightened suitably.

**9. SAMPLING AND INSPECTION -****9.1 Scale of Sampling -**

9.1.1 **Lot** – In any batch, all poles of the same class and same dimension shall be grouped together to constitute a lot.

9.1.1.1 **Sub-Lot** – If the number of poles in a lot exceeds 500, the lot shall be divided into a suitable number of sub lots such that the number of poles in any sub-lot shall not exceed 500. The acceptance or otherwise of a sub-lot shall be determined on the basis of the performance of samples selected from it.

9.1.2 The number of poles to be selected from a lot or a sub-lot shall depend upon its size and shall be in accordance with Col.1 and 2 of the following table;

Size of lot or sub-lot	Dimensional requirement		No. of poles for transverse strength test
	Sample size	Permissible No. of defective samples	
Up to 100	10	1	--
101 to 200	15	1	3
201 to 300	20	2	4
301 to 500	30	3	5

\* The number of poles to be tested shall be subject to the Agreement between the purchaser and supplier.

9.1.3 These poles shall be selected at random. In order to ensure randomness, all the poles in the lot or the sub-lot may be arranged in a serial order and starting from any random pole, every part pole may be included in the sample, being the integral part of  $N/n$  where  $N$  is the size of the lot or the sub-lot and  $n$  is the sample size

**9.2 Number of Tests -**

9.2.1 All the poles as selected in 9.1.2 shall be tested for overall length, cross-section and uprightness. The tolerance shall be  $(\pm)$  3 mm on cross sectional dimensions and 0.5 per cent on uprightness.

9.2.2 The number of poles to be tested for transverse strength test shall be accordance with Col.4 of the above table. These poles may be selected from those already tested in 9.2.1.

**9.3 Criteria for Conformity -**



**SE/ANRC/PSC POLES/2024-25/T-06**

- 9.3.1 A lot of sub-lot shall be considered as conforming to this specification if the conditions under 9.3.2 and 9.3.3 are satisfied.
- 9.3.2 The number of poles which does not satisfy the requirements of overall length, cross-section and uprightness shall not exceed the corresponding number given in Col.3 of Table in 9.1.2. If the number of such poles exceeds the corresponding number, all poles in the lot or sub-lot shall be tested for these requirements and those not satisfying the requirements and those not satisfying the requirements shall be rejected.
- 9.3.3 All the poles tested for transverse strength test shall satisfy the requirements of the test. If one or more poles fail, twice the number of pole originally tested shall be selected to the test. If there is no failure among these poles, the lot or the sub-lot shall be considered to have satisfied the requirements of this test.

10.

**MARKING -**

The pole shall be clearly and indelibly marked with the following particulars either during or after manufacture but before testing a position so as to be easily read after erection in position.

- a) Month and year of manufacture
- b) Transverse strength of pole in Kg.
- c) Marker's serial No. and mark.

**Seal & signature of the contractor**

**Executive Engineer (Civil)**  
**Civil Division, NASHIK**

ANNEXURE-1  
(REFER DRG.NO.1 TO 6)

**ECONOMICAL DESIGNS FOR PRESTRESSED CONCRETE POLES**

FACTOR OF SAFETY = 2.5  
COST RATIO = N  
CONCRETE GRADE = M-420

DIAMETER OF PRESTRESSING WIRES = 4 MM  
WITH A MINIMUM ULTIMATE TENSILE  
STRENGTH OF 175 KG/MM SQ.

LEN GTH OF POLE	LOAD	REFER TO DRG.N O.	BOTTOM DEPTH	TOP DEPTH	BREA DTH	NO.OF TENSIONED WIRES PER POLE	NO.OF UNTEN SIONE D WIRES PER POLE	LENGTH OF EACH UNTENSIO NED WIRE	CONCR ETE QUANT ITY	STEEL QUALIT Y
(l)	(p)	(d)	(dt)	(b)	-	-	-	(ic)	Cubic m	Kg/POL E
M	KG.	CM	CM		-	-	-	M	PER POLE	
1	2	3	4	5	6	7	8	9	10	11
8.0	140	3	27.5	10.5	9.0	8	2	4.70	0.137	7.24
	200	4	29.0	14.5	9.0	12	2	3.95	0.137	10.25
9.0	140	5	27.0	10.5	10.0	10	2	4.50	0.169	9.76
	200	6	31.5	11.5	10.5	12	2	4.45	0.203	11.54

**NOTE:** 1. UNTENSIONED WIRES OF THE GIVEN LENGTH SHOULD BE PLACED AT THE BOTTOM END OF POLE, AS SHOWN IN THE DRAWINGS.

2. COST RATIO = COST OF ONE MT OF PRESTRESSING STEEL

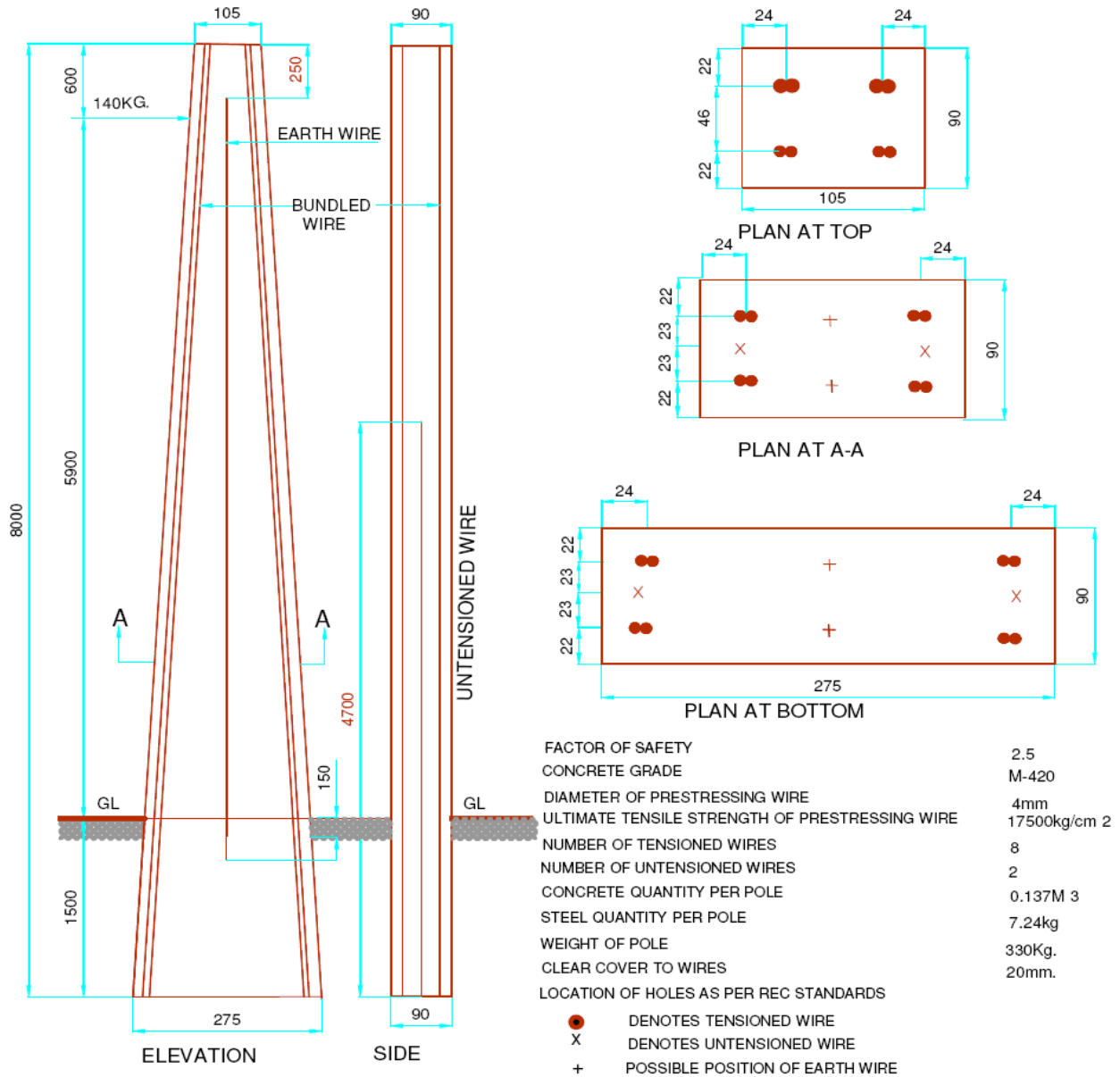
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COST OF ONE CUBIC M. OF CONCRETE

**Note:- Design may change as per requirement as per the directives of Engineer in charge & no extra payment shall be made against the same.**

**Seal & signature of the contractor**

**Executive Engineer (Civil)  
CIVIL Division, Nashik**

### Drawing of 8M/140Kg PSC Pole







**ESTIMATED COST Rs. 2712000/-**  
**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION**  
**COMPANY LIMITED**

**TENDER FOR**

***SUPPLY OF 8m/140kg & 9m/200kg PRESTRESSED CEMENT CONCRETE POLES AS  
PER REC DESIGNS TO AHMEDNAGAR CIRCLE.***

**Tender No: - SE/ANRC/PSC POLES/2024-25/T-06**

**e-TENDER SUBMITTED BY**

**M/S** \_\_\_\_\_  
\_\_\_\_\_

**Date of sale opening :- 07/06/2024**

**Date of sale closing :- 21/06/2024 Up to 15.00 Hrs.**

**Pre Bid Meeting :- 12/06/2024 at 11.00 Hrs.**

**Date of submission of bids:- 21/06/2024 Up to 17.00 Hrs. online on Web site**

**site <http://works.mahadiscom.in/eTender/etender>**

**Address-**

Office of the Superintending Engineer,  
Maharashtra State Electricity Distribution Co. Ltd.  
(Ahmednagar Circle)  
Dist-Ahmednagar Pin-414001  
Email: seahmednagar@gmail.com

**PRICE PER COPY- Rs 2950.00 (Including 18% GST)**

## MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.

SCHEDULE "B"(To be uploaded in BID-II)

SE/ANRC/PSC POLES/2023-24/T-03

**Description of supply Item:**

Supply of 8m/140Kg & 9m/200 Kg Pre stressed Cement Concrete Solid poles as per REC design, specification and drawings for **Ahmednagar Circle** by existing factory/ depot.

Sr. No.	Type of Pole	Tentative Scope	Schedule Rate per pole w/o Transportation & W/o Tax (Rs.)	Cost per pole (excluding GST) in Rs.	Transportation charges/pole (excluding GST) in Rs.	Total Rate (per pole in figures and words) (in Rs.) Excluding GST	Total Amount (Rs.)
1	2	3	4	5	6	7=5+6	8
2.	9m/200 Kg	1000	2712				Limited to Rs.2712000/-

- The rate quoted by us is for supply of 9m/200Kg PSC pole. The rate quoted is for supply at MSEDCL A'nagar Circle Store Center (A'nagar) with testing and loading arrangements.
- Separate sheets showing the rate analysis and basic prices adopted for cement, 4mm H.T. Wire and 8 SWG GI Wire in support of the rates quoted are furnished. The element of tax is separately indicated in the basic price of raw materials.
- We are availing of the facilities/concessions extended by the Central Ex. Authority/ Sales Tax authority, the details of which are given in the questionnaire enclosed.
- As on date the following statutory levies (Taxes) will be payable by the MSEDCL**
  - 
  -
- We agree for the delivery of poles within Two month from the date of Receipt of order and also agree for the delivery program as directed.
- We agree to avail the benefit under GST and pass it on to the MSEDCL, if beneficial to the MSEDCL by adjustment in the Excise Duty.
- We Agree to Match L-1 bidder rate and are ready to supply pole at rate quoted by L-1 bidder **Yes/No**

**Signature of the Tenderer**

LIST OF SERVICES

SR. NO.	SERVICE NAME	ACTIVITY NUMBER	UOM	SAC CODE	REQ. QTY	VERSION	MATERIAL TYPE
1	PSC pole 9 Rmt erection	PM.HTLC22.1 00	Number	995461	1000		null

Required Documents (To be uploaded online)
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Sr. No.	NAME	SECTION	ITEM	DESCRIPTION
1	Price Document	Price Section	PSC pole 9 Rmt erection	As per Tender Terms and Conditions
2	Technical Document	Technical Section	PSC pole 9 Rmt erection	As per Tender Terms and Conditions
3	Technical Document	Technical Section	PSC pole 9 Rmt erection	As per Tender Terms and Conditions
4	Commercial Documents	Commercial Section		As per Tender Terms and Conditions
5	Commercial Documents	Commercial Section		As per Tender Terms and Conditions