

**JAIPUR VIDYUT VITARAN NIGAM LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER (PROC)
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**SPECIFICATION FOR SUPPLY OF GALVANISED M.S.FORGED PINS FOR
11 KV PIN INSULATORS (11 KV PINS) AGAINST
TENDER NO. TN-4312**

Last Date of receipt of tenders	23.03.2011 upto 2:30 PM
Date of opening of tenders	23.03.2011 at 3:00 PM
Cost of Specification	Rs. 2500.00 (Rs. Two Thousand Five Hundred only)
Validity	120 days from the next date of opening of Techno commercial bid.
Earnest Money	Rs. 500,000.00 (Rs. Five Lac only) / Exemption Certificate / Vendor Registration Of Class " A " Category .

VERY VERY IMPORTANT :

- i) The bidders in their own interest are advised to go through the complete specification carefully.
- ii) The material to be purchased against above Tender is meant for three Discoms of Rajasthan i.e. JVVNL/ AVVNL/ JdVVNL.

The bidders are required to quote the price for delivery of material any Where in Rajasthan State in the stores of JVVNL/ AVVNL/ JdVVNL.

- iii) In case of successful bidders, the purchaser reserves the right to distribute quantity awarded among JVVNL/ AVVNL/ JdVVNL in the ratio of their requirement & each Discom will issue separate purchase orders for which bidder will have to furnish separate BGs in JVVNL / AVVNL / JdVVNL (as the case may be) . However, for opening of tender the bidder should be registered vender in class "A" category in either of JVVNL/ AVVNL/ JdVVNL or furnish requisite EMD.
- iv) Clause No. 1.17 (A) (c) & 1.17 (B) of Instructions to bidders stands amended as under:
 - (a) Existing Qualification Requirement for minimum quantity to be quoted is Reduced to one third.
 - (b) Counter offer will be given to all responsive bidders.

INDEX

Section-I	Instructions to bidders	
Section-II	General Conditions of Contract	
Section-III	Technical Specification	
Schedule-I	Schedule of Requirement	
Schedule-II	P.V. Formula	
Schedule-III	Details of Standards	
Schedule-III-A	Pre Qualification Requirement(PQR)	
Schedule-III-B	Performa of Bank Guarantee in lieu of type test certificates	
Schedule-IV	Price Schedule	To be submitted in Price Bid Envelop.
Schedule-IV-A	Details of bid quantity, quantity offered along with justification with reference to Qualifying Requirement.	The bidder is required to justify quantity offered as per Qualifying Requirement.
Schedule V	Departure from Guaranteed Technical Particulars	
Schedule V- A	Guaranteed Technical Particulars	
Schedule VI A	Departure from the requirement of Technical Specification.	
Schedule VI B	Departure from commercial terms & conditions of specification	
Schedule VII	List of Past supplies.	
Schedule VII A	C.A. Certificate for Quantity Justification	
Schedule VIII	Delivery schedule.	
Schedule IX	List of equipment & technical hands available with the bidder.	
Schedule X	General Particulars about the bid in brief.	

Note:- The bidder, in their own interest, are requested to read very carefully Section-I (Instruction to bidders), Section-II (General Condition of Contract) & Section-III (Technical Specification) before filling the bid. The Bid documents be downloaded from JVVNL website www.jaipurdiscom.in . No hard copy of the bidding documents will be provided to the bidders through this office. In case of any discrepancy found in bidding documents downloaded from the website and appended with the bid (as a bid document) and original copy of such document available in the office of Superintending Engineer (Proc.), Jaipur Discom, Jaipur then the copy available with Superintending Engineer (Proc.), Jaipur Discom, Jaipur will be considered as final document for all purpose. The cost of Bid document as published in NIT shall be furnished along with downloaded bid document in the manner prescribed in bid document.

Section-III**TECHNICAL SPECIFICATION AND OTHER REQUIREMENTS FOR GALVANISED M.S FORGED PINS ON 11 KV PIN INSULATORS (11 KV PINS) AGAINST TN-4312**

1.0 SCOPE :

1.1 This specification covers the design, manufacture, inspection and testing before despatch, supply and delivery of Galvanised M.S.Forged Pins specified herein for their satisfactory operation in 11 KV Sub-Transmission lines in Rajasthan.

1.2 The technical specifications, contained herein ,are for the guidance of the bidders. Any deviation from the Purchaser's specification will be considered on their relative merits in respect of performance, efficiency, durability and overall economy consistent with the requirements stipulated herein after. Such deviations shall be clearly entered by the bidders in the form as per schedule-VI of the specification.

2.0 CLIMATIC CONDITIONS :

2.1 The pins shall be suitable for being installed directly in air with power conductors of 11 KV Double Circuit and Single Circuit Sub-transmission lines. They shall be therefore suitable for satisfactory operation under the tropical climatic conditions listed below :

i) Location	in the state
ii) Maximum ambient Air Temperature (deg.C)	50
iii) Minimum Ambient Air Temperature (deg.C) Temperature (deg.C)	(-) 2.5
iv) Average daily Ambient Air Temperature (deg.C)	32.2
v) Maximum relative humidity (%)	100
vi) Minimum relative humidity (%)	50
vii) Average rainfall per annum (mm)	150-1000
viii) Number of rainy days per Annum	70
ix) Altitude above mean sea level (meters)	100-1000
x) Isoceraunic level (Days/Annum)	25(thunder strom)
xi) Maximum wind pressure (Kg/sq.m.)	195
xii) Seismic level (Horizontal Acceleration)	0.08 g

3.0 PRINCIPAL PARAMETERS :

The 11 KV galvanized M.S.Forged Pins suitable for use with 11 KV Pin Insulators(Confirming to ISS:731:1971 with latest amendments if any) shall comply in all respects with the ISS:2486 (Part-I):1993 & ISS:2486(Part-2/1989) (with latest amendments if any).

3.1 DETAILS OF GALVANISED M.S.FORGED PINS :

The 11 KV Galvanised M.S. forged pins should be suitable to be used with 11 KV Pin Insulator respectively for a three phase, 11 KV Sub-transmission lines in a moderately polluted atmosphere.

3.2 DRAWINGS :

Detailed drawings must be furnished along with bid. The drawing shall comply with IS 2486(Part-I)/1993 & IS:2486 (Part-II)/1989 with latest amendment if any. The 11 KV Galvanised M.S.Forged Pins shall be suitable for use with 11 KV Pin Insulator (confirming to IS 731/1971 with latest amendment, if any) respectively.

4.0 GENERAL TECHNICAL REQUIREMENTS :

4.1 HEADS :

The head shall be of steel and shall be in accordance with Fig.1 of IS:2486 (Part-2) / 1989 with latest amendments, if any. They shall screw into a thimble fixed in the pin hole of the insulators. The dimensions of the gauges for these heads are given in fig. 2 to 4 of aforesaid IS.

4.2 PINS :

The 11 KV galvanised M.S.Forged Pins suitable for use with 11 KV Pin Insulators (Conforming to IS:731/1971 with latest amendments if any) shall comply in all respects with the IS: 2486 (Part-1)/1993 & IS:2486 (Part-2)/1989 with latest amendments if any. The dimensions of the line pins shall be as given in fig. 5 of the above mentioned ISS.

4.3 STALKS :

The stalk length of line pins shall be measured above the seating face of the collar conforming to IS:2486 (Part-2)/1989.

4.4 SHANKS :

The shank length of the line pins shall be measured below the seating face of the Collor & conforming to IS:2486 (Part-2)/1989.

4.5 GALVANISED M.S.FORGED PINS :

i) GALVANISATION :

All ferrous pins and nuts shall be hot dipped galvanised. The galvanisation shall conform to IS: 2633/1986 with latest amendments and satisfy the requirements given in IS:4759/1984. The threads on the nuts & tapped holes shall be cutout after galvanising & shall be well oiled or greased. Spring washers shall be electro galvanised conforming to service grade No.4 of IS:1573/1986(latest amended).

ii) FAILING LOAD :

The 11 KV Pins shall be offered for minimum failing load of 5 KN.

iii) DIMENSIONS : The 11 KV Pins for supply under this specification shall be of small steel head as per figure No. 5 of IS:2486 (Part-2)/ 1989 and shall have the following dimensions.

- a) Stalk length. : 165 mm
- b) Shank length. : 150 mm
- c) Hexagon nut : M20 as per IS:1363(Part-3) /1992
- d) Spring washer : Nominal size 20 as per IS:3063/1972.

4.6. THREADS :

Threads shall be as specified in IS:4218 (Part-2) /1976 and matching with 11 KV Pin Insulators conforming to IS:731/1971 (with latest amendments if any)

4.7 HEXAGON NUTS :

Hexagon Nuts of M-20 size shall conform to IS:1363(Part-3):1992 (latest amended).

4.8 SPRING WASHERS :

Spring washers shall conform to IS:3063:1972 (Latest amended).

4.09 MATERIAL DESIGN AND WORKMANSHIP :

4.09.1 GENERAL :

i) All raw materials to be used in the manufacture of these pins shall be subject to strict raw material quality control and to stage testing/quality control during manufacturing stage to ensure the quality of the final end product. Manufacturing shall conform to the best engineering practices adopted in the field of high voltage transmission. Bidders shall therefore offer pins

as are guaranteed by them for satisfactory performance on 11 kV Sub-transmission Lines.

ii) The design, manufacturing, process and material control at various stages be such as to give maximum working load, highest mobility, best resistance to corrosion, good finish, elimination of sharp edges and corners.

4.10 TESTS

4.10.1 TEST BEFORE DESPATCH: The 11 KV Galvanised M.S.Forged pins and accessories shall be subjected at maker's works before despatch, to the tests mentioned here-under as per IS: 2486(Part.1)/1993 (with latest amendments).

4.10.2 ROUTINE TESTS :

The following tests shall be conducted on each unit by the bidder at his works as per relevant standard - IS:2486 (Part-1)/1993 (latest amended) :

- a) Visual Examination (Clause-8)

4.10.3 ACCEPTANCE TESTS :

The following tests shall be conducted on samples taken at random from a lot as per relevant standard, IS:2486 (Part-1)/1993 (latest amended) in presence of purchaser's representative :

- a) Verification of dimensions (Clause 8 & 9.2.2)
- b) Galvanizing Test (Clause 9.4)
- c) Mechanical Tests (Clause 9.5)

5.0 TYPE TESTS

a) The bidder shall furnish valid and authenticated type test certificate from a Govt. approved/ a Govt. recognized/ NABL accredited laboratory/ ILAC i.e. International Laboratory Accredited laboratory / ILAC i.e International Laboratory Accrediation Cooperation (In case of foreign laboratory). Such type test certificates should not be older than three years as on the date of bid opening. For this purpose date of conduction Type Test(s) will be considered.

b) The type test certificates by in house laboratory of bidding firm even if it is a Govt approved/ Govt recognized/ NABL accredited/ ILAC accredited,shall not be accepted, in case of their own bid. This will not apply if bidding firm is Govt. Company/ Public Sector Undertaking.

c) The bidder should furnish documentary evidence in support of the laboratory whose type test have been furnished, that the said laboratory is a Govt/ a Govt. approved/ a Govt. recognized/ NABL accredited laboratory/ ILAC accredited (in case of foreign laboratory)

d) The type test certificates shall be furnished either in original or duly attested by notary.

e) The bids of only those bidders shall be considered to be meeting the type test criteria who furnishes complete type test certificates with the bid as per above provision.

f) However, in the following cases the bid of the bidder may be considered meeting the type test criteria if the bidder furnishes an undertaking stating that valid type test

certificates from a Govt/ a Govt. approved/ a Govt. recognized/ NABL accredited laboratory/ ILAC accredited shall be furnished from first lot (without asking for any delivery extension) along with Bank Gurantee, with the technical bid from a Nationalized/ Scheduled Bank in prescribed proforma at Schedule-III C or DD/ Pay order amounting **Rs. 5.00** Lac The initial validity of BG shall be 9 months with claim period of 3 months in addition.

- i) Where a new Rajasthan based firm is participating & is technically competent.
- ii) Where one or more type test(s) is/ are older than 3 years.
- iii) Where Rajasthan/outside Rajasthan firm furnishes requisite type test reports of higher rating material

5.1 The following shall constitute the type tests which are to be conducted on atleast three units of each rating as per relevant standard IS:2486 (Part-1)/1993 (Latest amended) :-

- a) Freedom from defects (Clause 5 & 6).
- b) Verification of dimensions (Clause 8 & 9.2.2)
- c) Galvanising Test (Clause 9.4)
- d) Mechanical Tests (Clause 9.5)
- e) Chemical Composition Test (Clause 9.6)

5.2 SAMPLING : As per IS:2486 (Part-1)/1993 (latest amended)

5.3 TOLERANCE ON TEST RESULTS : As per IS:2486(Part-1)/1993 & IS:2486 (Part-2)/1989(latest amended).

6.0 TESTING FACILITIES :

The bidder must indicate clearly about the various testing facilities for type test as well as for routine/sample tests as per relevant ISS in respect of M.S.Forged Pins as are available at their works. In case no testing facilities are available at the bidder's works particulars of the place where such testing is proposed to be conducted during the course of inspection must be indicated.

7.0 INSPECTION

All the tests (as mentioned at Clause 6.1.2) and Inspection shall be made at the place of manufacturer unless otherwise especially agreed upon by the bidder and purchaser at the time of purchase. The bidder shall afford the inspection officer(s) representing the purchaser all reasonable facilities without charges, to satisfy him that the material is being furnished in accordance with this specification. The purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is a dispute regarding the quality of supply.

The Inspection may be carried out by the purchaser at any stage of manufacture/ before despatch as per relevant standard.

Inspection and acceptance of any material under the specification by the purchaser, shall not relieve the bidder of his obligation of furnishing material in accordance with the specification and shall not prevent subsequent rejection if the material is found to be defective. The Bidder shall keep the purchaser informed in advance, about manufacturing program so that arrangements can be made for inspection.

The purchaser reserves the right to insist for witnessing the acceptance/ routine testing of the bought out items.

The Bidder shall give 15 days(for local supplies) / 30 days (in case of foreign bidder) advance intimation to enable the purchaser to depute his representative for witnessing the acceptance and routine tests. The inspection charges would be to the purchaser's account.

8.0 PACKING & FORWARDING :

i) All 11 KV Galvanised M. S. Forged pins shall be packed in double bags, one HDP bag (inner) and one gunny bag (outer) or in double gunny bag. The gross weight of each packing shall not normally exceed 50 Kg.

ii) The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.

9.0. PRICES & PRICE VARIATION:

a) The prices quoted shall be variable as per price variation formula given in the specification (**Schedule-II**). The IEEMA formula allowing price variation for transmission line accessories & H/W containing all steel as under, shall hold good for 11 KV Pins.

$$P = \frac{P_o}{100} \left(20 + 58 \frac{LA}{LA_o} + 7 \frac{Zn}{Zn_o} + 15 \frac{W}{W_o} \right)$$

The details of this PV clause are available at (Schedule-II).

- b) If the price variation formula is changed, the same shall be applicable for the price variation. During the transit period when both old and new indices are being circulated , then the admissible price variation shall be applicable, which is advantageous to NIGAM , and the period from which old indices are discontinued then the PV shall be admissible with the new indices.
- c) The date of delivery (i.e. date of readiness of material) is to be considered as per clause No. 1.10 of Section-I(Instructions to bidder).

10. DELIVERY SCHEDULE

The bidder is required to quote monthly delivery. The delivery of quoted quantity should be completed in **Ten months** period including commencement period of **maximum 30 days in equal monthly installments**. In case ordered quantity is different than quoted quantity, then monthly delivery shall be adjusted proportionately. Bids in which monthly delivery schedule is not indicated shall be ignored.

The bidders are required to indicate the delivery schedule in the schedule attached with the Specification.

11.0 TEST CHECKING OF MATERIAL AT STORES

11.1 The material received in the stores of the NIGAM shall be subjected to the test checking at stores before final acceptance of the material, the procedure for the same shall be as under :

11.2 SAMPLING

One sample out of **each sub-lot / lot of 3000 Nos.** or part thereof from each inspected lot received in stores shall be selected for test checking of material and shall be got tested. The selection of sample from the material received at stores shall be done as soon as material is received in stores without the presence of the representative of the supplier. However, testing of sample(s) at CTL shall be carried out in the presence of representative of the supplier after identification / confirmation by him that sample so selected belongs to them. In case the supplier disputes that the selected samples does not pertain to them, then fresh sample shall be selected in the presence of the representative of the supplier and test(s) be carried out.

11.3 TESTS

The following tests shall be carried out on the above items :

- a) Visual Examination, Verification of Dimension, weight and marking
- b) Mechanical Test.
- c) Galvanisation (Uniformity) Test.

11.4 Test of the material shall be got done at the test laboratory of the respective Discom in the presence of representative of supplier. For witnessing of the testing, clear 7 (seven) days notice shall be given to the supplier by fax/ speed post stating date, time & place where the test is to be conducted. In

case the supplier do not attend for witnessing the testing, the testing shall be proceeded and completed and action be taken as per the contract.

11.5 The witnessing officers of the respective Discom or as designated by the purchaser shall send copies of test reports to the purchaser, consignees and the supplier and AO (CPC) of respective Discom.

11.6 Only those tests shall be conducted at CTL for which facility with CTL is available.

12.0 CRITERIA FOR ACCEPTANCE

12.1 Visual Examination, Verification of Dimension, weight and marking .
As per specification/ ISS

12.2 Mechanical test.

In case of failure of sample in Mechanical Test, the material contained in the lot / sub-lot to which the sample belongs, shall be rejected. The rejected material shall have to be replaced by the supplier free of cost.

12.3 Galvanisation (Uniformity) Test.

12.2.1 The sample(s) shall be first tested for (n-2) number of dips where (n) is specified number of dips in the contract. If the sample(s) does not pass the uniformity of Galvanisation Test for (n-2) dips, the material shall be rejected and the material relating to relevant lot / sub-lot to which sample(s) pertains shall have to be replaced by the supplier free of cost.

12.2.2 If the sample has passed the uniformity of Galvanisation Test for (n-2) dips, then it shall be tested for (n-1) dips. If the sample has not passed the uniformity of Galvanisation Test with (n-1) dips, then material pertaining to relevant lot / sub-lot shall be accepted with a deduction @ 10% of cost of material.

12.2.3 If the sample has passed the uniformity of Galvanisation Test with (n-1) dips, then sample shall be tested for last one dip of one minute to complete the test for `n' dips. If the sample does not pass the uniformity of Galvanisation Test with `n' dips, then the material pertaining to relevant lot/ sub-lot shall be accepted with a deduction @ 5% of cost of material.

12.2.4 If the sample(s) have passed the Test with number of dips as specified in the contract (n), then material pertaining to relevant lot / sub-lot shall be accepted.

13.0 TEST CHARGES :

All test charges incurred towards test checking of the material received in our stores shall be borne by the NIGAM.

14.0 PAYMENT :

Payment shall be made only after receipt of successful test report from the CTL of JVVNL/AVVNL/JdVVNL on the samples selected from the material received

at the stores. However, the due dates for payment shall be considered from the date of submission of the bills along with receipted challans to Accounts Officer(CPC) of respective Discom

15.0 IDENTIFICATION & MARKING :

Each 11 KV Pin shall be marked with the manufacturer's name or trade mark.

16.0 QUANTITY TOLERANCE :

Quantity tolerance of plus minus 2% of ordered quantity shall be allowed for completion of supply .