

**RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.**  
(An ISO 9001: 2000 Certified Company)  
(TRANSMISSION LINE PROCUREMENT CIRCLE)  
NEW MM BUILDING, OLD POWER HOUSE, PREMISES, BANI PARK, JAIPUR  
(FAX NO.0141-2208916)

***COVER NOTE***

“An NIT for procurement of G.I. Bolts & Nuts (ISI marked) of assorted size is likely to be issued in near future by Material Management Wing of RVPN Jaipur. Detailed Technical specification including Pre-Qualification Requirement (PQR) has been uploaded on RVPN web site and on the web site rajenergy.com. Comments on the technical specification are invited from the prospective bidders/manufacturers/ experts within a period of 15 days from the date of specification uploaded on the web site. Comments may be sent to the following address:

***OFFICE OF THE SUPERINTENDING ENGINEER  
(TRANSMISSION LINE PROCUREMENT CIRCLE)  
NEW MM BUILDING, NEAR RAM MANDIR, BANIPARK, JAIPUR-302006  
TELEPHONE/ FAX: 141-2208916***

Comments may also be sent through e-mail on [se\\_tlpc@rvpn.co.in](mailto:se_tlpc@rvpn.co.in).

For any further enquiry may please contact in the office of the **Superintending Engineer (TLPC), RVPN, Jaipur**. Please note that the base date for price variation shall be the first date of the calendar month preceding the month in which tender is opened. ”

***PROPOSED SPECIFICATION FOR SUPPLY OF  
G.I.BOLTS AND NUTS (ISI MARKED) OF ASSORTED  
SIZE AGAINST NIT TO BE ISSUED UNDER TN-3746***

---

**SECTION- III**

**TECHNICAL SPECIFICATION OF  
G.I.BOLTS & NUTS (ISI MARKED)  
AGAINST TN-3746.**

**1. SCOPE :**

The specification covers the design ,manufacture, shop testing, marking, packing and supply of half threaded G.I. Bolts & Nuts (ISI Marked ) for EHV transmission line tower and operation & maintenance works.

Before despatch of material inspection, testing & checking will be the witnessed by the representative of purchaser.

G.I. Bolts & Nuts having ISI Certification Mark shall only be purchased against this specification. Bidder should furnish copy of valid ISI Certification Mark, duly attested by Notary

## 2. SPECIFICATION AND STANDARDS :

Both type of Nuts & Bolts shall conform to the latest edition, of the following standards except where specified otherwise in specification. :

S. No.	Particulars	For G.I. Bolts& Nuts (ISI marked)
1.	Grade	Grade "C" as specified in IS-1367 (Part-II: 2002).
2.	Dimension	Nominal dia.- 16mm Length of bolts- 35,40,45,50,55,65,75 &85mm  (as per IS-12427/2001) Length of Nut-15 mm (as per IS-1363-part-3/1992.)
3.	Raw Materials	Low or medium carbon Steel.
4.	Tolerance	As per IS-1367 (part-II) 2002
5.	Mechanical properties & Chemical Composition	For Bolts : IS-1367(part-3)2002 For Nuts : IS-1367(part-6)1994 & IS-14394 / 1996
6.	Testing	For Bolts : IS-1367(part-3)2002 For Nuts : IS-1367(part-6)1994 & IS-12427/2001
7.	Sampling	As per IS-1367 (Part-17) 1996 for bolts & Nuts
8.	Galvanizing	Hot dip galvanised as per IS- 1367(part-XIII) 1983

## 3. TECHNICAL REQUIREMENT OF TENDER :

The following documents are required & must be accompany with the tender for consideration otherwise offer shall be ignored.

### 3.1 GUARANTEED TECHNICAL PARTICULARS :

The technical characteristics of the material offered be furnished in Schedule-V of Guaranteed and other technical particulars:-

### 3.2 TEST CERTIFICATE:

Test certificate not older than 7 years from the date of bid opening from a Govt. / a Government approved / a Govt. recognised / NABL accredited Laboratory / ILAC i.e. International Laboratory Accreditation Cooperation ( in case of foreign laboratory) shall be furnished along with the tender. Also furnish the routine /acceptance test certificates carried out at firm's works as per Clause No.1.28 of Section-II. The type test reports for following tests are to be furnished to meet qualifying requirement of specification.

#### (i) Chemical Composition

##### a) For Bolts :

Carbon  
Phosphorous  
Sulphur.

##### b) For Nuts :

Carbon  
Phosphorous  
Sulphur.

#### (ii) Mechanical Properties :

##### (a) For Hexagonal Bolts :

1. Tensile strength.
2. Yield stress.
3. Stress under proof load
4. Brinell Hardness.
5. Rockwell hardness.
6. Vickers hardness.
7. Elongation after fracture
8. Strength under wedge loading .
9. Head soundness.
10. Impact Strength Test.

##### (b) For Hexagonal Nuts :

1. Proof stress.
2. Vickers Hardness

#### (iii) Galvanising (hot dip mass & eqt.

##### Thickness of coating)

##### (a) Min.. average

Mass of coating.  
Thickness of coating.

##### (b) Min. individual

Mass of coating.  
Thickness of coating.

### 3.3 PAST PERFORMANCE :

The tenderer must furnish list of past supplies in the Schedule-VII of the specification.

### 3.4 EQUIPMENTS AND TECHNICAL HANDS

#### AVAILABILITY :

The tenderer must furnish list of equipments and technical hands available with the firm in the Schedule-IX of the specification along with the tender offer.

#### 4. INSPECTION & TESTING :

Reference be made to this clause as incorporated in Section-II of GCC Clause No. 1.27.

#### 5. MARKING :-

The bolts shall be marked with the following symbols on the top of the bolt head, either embossed, or Indented , as per IS:12427-2001 (Latest) :

- (a) The Manufacturer's identification symbol.
- (b) Transmission tower bolt identification symbol " T"
- (c) Word "RVPN " .
- (d) Property Class.

#### 6. PACKING :-

The packing of material shall be made as per clause No. 1.30 of Section -II in double gunny bags containing 50 Kgs. Weight of Bolts & Nuts (Net wt.). The packing shall bear transportation hazards. The packing shall be such as to protect the material from the atmospheric effect like rains, humidity etc. The packing shall have the following marking :

- (a) Particulars of material.
- (b) Quantity.
- (c) Manufacturer's identification mark.
- (d) Complete despatch details like name of the consignee and destination etc.
- (e) The packing of the G.I. Bolts & Nuts shall be in accordance with the IS-1367 (Part-18)/1996.

7. REQUIREMENT :-

The requirement of G.I. Bolts & Nuts (ISI Mark) is as follows :

Sl. No .	Particulars of material required	Quantity in MT.	Remarks
----------	----------------------------------	-----------------	---------

**G.I. Bolts & Nuts (ISI Marked) (Half Threaded)**  
(As per IS:12427/2001 as amended)

<u>SIZE</u>	
(a) M16x35N	MT
(b) M16x40N	MT
(c) M16x45N	MT
(d) M16x50N	MT
(e) M16x55N	MT
(f) M16x60N	MT
(g) M16x65N	MT
(h) M16x70N	MT
(i) M16x80N	MT
(j) M16x85N	MT
(k) M16x90N	MT

8. CHARACTERSTIC / PROPERTIES REQUIRED :

A) <u>For Bolts &amp; Nuts</u> :	(Properties class).
i) Properties class for - bolts required	5.6 as per IS12427/2001 & Properties as specified in IS:1367(Part-3)/2002
ii) Properties class for - nuts required	5 as per IS12427/2001 & Properties as specified in IS:1367(Part-6)/1994.
B) <u>Chemical Composition</u>	
i) <u>For Bolts</u> :	
Carbon	% min/max      0.15 to 0.55
Phosphorous	% max.            0.05
Sulphur.	% max.            0.06
ii) <u>For Nuts</u> :	
Carbon	% max.            0.50
Phosphorous	% max.            0.06
Sulphur.	% max.            0.15

C) Mechanical Properties :

i) For Hexagonal Bolts :

a) Tensile strength.	N/mm sq.	500 (Min)
b) Yield stress.	N/mm sq.	300 (Min)
c) Stress under proof load	N/mm sq.	280 (Min)
d) Brinell Hardness.	HB	147 (Min)
e) Rockwell hardness.	HRB	79 (Min)
f) Vickers hardness.	HV	155 (Min)
g) Elongation after fracture	--	20% (Min)
h) Strength under wedge loading .	N/mm sq.	500 (Min)
i) Head soundness.	---	No fracture
j) Impact Strength Test.	J	25 (Min)

ii) For Hexagonal Nuts :

a) Proof stress.	N/mm sq.	490 Max.
b) Vickers Hardness	HV-Min.130 to HV-Max.	302

D) Galvanising (hot dip mass & eqt. thickness of coating)

i) Min. average

Mass of coating.	g/msq.	375
Thickness of coating.	Micrometer	54

ii) Min. individual

Mass of coating.	g/msq.	300
Thickness of coating.	Micrometer	43

9. DELIVERY :

The material shall be supplied as per Delivery Schedule of this specification.

**ANNEXURE-3**

PRICE VARIATION FORMULA FOR G.I. BOLTS AND NUTS  
(ISI MARKED) AGAINST SPECIFICATION NO.3746.

Prices payable to the supplier as stated in the contract shall be subject to adjustment during performance of the contract to reflect changes in the cost of Labour and material components in accordance with the formula :-

$$P1 = P_0 \times \left( a + b \frac{L1}{L0} + c \frac{M1}{M0} \right) - P_0$$

$$c \frac{M1}{M0} = \left( 0.55 \frac{S1}{S0} + 0.15 \frac{Zn1}{Zn0} \right)$$

in which

P1 = Adjustment amount of Ex-works Price payable per MT to the supplier.

P<sub>0</sub> = Contract Ex-works price per MT ( base price )

a = Fixed element representing profits and overheads included in the contract price i.e. a=0.15.

b = Estimated percentage of labour component in the contract price i.e. b=0.15

c = Estimated percentage of material component in the contract price i.e. c=0.7

L<sub>0</sub> & L<sub>1</sub> = Labour indices applicable to the appropriate industry in the country of

origin on the base date and date for adjustment, respectively.

M<sub>0</sub> & M<sub>1</sub> = Material indices for the major raw material on the base date and

date for adjustment, respectively, in the country of origin.

S<sub>0</sub> & S<sub>1</sub> = Material prices for steel on the base date and date for adjustment respectively in the country of origin.

Zn<sub>0</sub> & Zn<sub>1</sub> = Material prices for HZL sale price for Electrolytic high grade Zinc on the base date and date of adjustment respectively in the country of origin.

For inputs indices as below will apply.

S1(Steel)- IEEMA - (Ex-stockyard price of steel angle of size 150 x 150 x 12 mm) as per IS:2062. The rate of this raw material is as published and circulated by IEEMA as prevailing on the first day of calendar month covering the date two months prior to the date of delivery.

Zn1 (Zinc) = IEEMA - (HZL sale price for Electrolytic High grade Zinc) The rate of this raw material is as published and circulated by IEEMA as prevailing on the first day of calendar month covering the date two months prior to the date of delivery.

L1(Labour) = Consumer price Index Number for Industrial Worker, general index as published by the Labour Bureau, Chandigarh would be for the month four months prior to the date of delivery (This index is also circulated by IEEMA).

Base date = One month prior to date of tender opening i.e. **01.07.2011**

Applicable for

- i) Steel (size 150x150x12mm) = So
- ii) Zinc = Zno
- iii) Labour = Lo

Date of adjustment - Two month prior to date of delivery.

NOTE :

(i) IEEMA prices shall exclude excise duty and other taxes.

(ii) When the material is offered within stipulated delivery schedule:

For allowing P. V. the date of delivery shall be considered the date on which material is notified as being ready for inspection (date of receipt of inspection call in the office, if the offered material is lying ready) or the date of actual delivery, which ever is beneficial to the Nigam.

(iii) When the material is offered after expiry of stipulated delivery schedule:

For allowing P.V. in the cases the supplies are made after the expiry of scheduled delivery, the price prevailing in the last month of the stipulated scheduled delivery or the date on which material is notified as being ready for inspection (date of receipt of inspection call in the office if the offered material is lying ready) or actual date of delivery whichever is beneficial to Nigam.

(iv) When the material is offered ahead of delivery schedule on the request of RVPN:

Normally supplies ahead of delivery schedule shall not be accepted. However in case of urgency of material, if supplies are accepted ahead of delivery schedule, PV shall be allowed on the basis the material is notified as being ready for inspection (date of receipt of inspection call in the office if the offered material is lying ready) or the actual date of delivery whichever is beneficial to Nigam.

(v) When the material is offered ahead of delivery schedule by firm at their own and accepted by RVPN on the request of firm:

Normally the request of the firm to accept the material ahead of delivery schedule will not be accepted. In case firm offers supplies ahead of delivery schedule at their own and such request is accepted by RVPN, the price prevailing in the first months of stipulated delivery schedule or the date on which material is notified as being ready for inspection (date of receipt of inspection call in the office if the offered material is lying ready) or actual date of delivery whichever is beneficial to Nigam shall be allowed.

**PRE-QUALIFYING REQUIREMENTS FOR BIDDERS FOR SUPPLY OF  
G.I. BOLTS AND NUTS (ISI MARKED) AGAINST TN-3746**

**1.0 Status of Bidder:**

- a) The bidder should be a manufacturer.
- b) The bidder may also quote as sole distributor / sole selling agent provided the manufacturer furnishes valid authorization in prescribed proforma at **Annexure-I** in favour of the bidder furnishing the bid and the manufacturer fulfils the qualifying requirement as provided in the bid document.

**2.0 Past Supply Criteria:**

The bidders shall meet the past supply criteria as detailed below:-

- 2.01.1 The bidder should have supplied a minimum 40% of the NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in any one year (i.e. continuous period of 12 months) during the last five years as on the date of technical bid opening to meet the past supply criteria for full NIT quantity.
- 2.01.2. In case of those bidders who have supplied less than 40% of the NIT quantity but more than 20% of NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in any one year (i.e. continuous period of 12 months) during last five years as on the date of technical bid opening, the quantity for which the bid will be considered to be meeting the past supply criteria shall be worked out proportionately on the basis of quantity supplied (i.e. to qualify for full NIT quantity, the quantity supplied is to be 40% of NIT quantity).
- 2.01.3. The bids of those bidders who have supplied less than 20% of NIT quantity G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in one year (i.e. continuous period of 12 months) during last five years as on the date of technical bid opening, will be considered non-responsive.
- 2.01.4 In support of fulfillment of the past supply criteria, the bidder shall furnish documentary evidence in the form of certificate from Chartered Accountant. This certificate should be either in original or copy duly attested by Notary. The bidder shall also sign and affix seal on the C.A. Certificate. The certificate should have membership number with the name & address of the chartered accountant. It should clearly indicate the quantity supplied, period of supply, size of G.I bolts and nuts etc.

2.02 The bids of the bidder will be considered for the quantity for which the bidder meets the past supply criteria as detailed below:-

Sl. No.	Past Supply Criteria	Quantity for which bid will be considered qualified.
1	2	3
1.	$\geq 40\%$ of NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in any one year (i.e. continuous period of 12 months) during last five years.	If the past supply is for equal to or more than 40% of the NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length); the bid of the bidder will be considered for 100%NIT quantity .
2.	$< 40\%$ of NIT quantity but $\geq 20\%$ of NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in any one year (i.e. continuous period of 12 months) during last five years.	The quantity for which the bid is meeting the past supply criteria will be worked out on the basis of the quantity supplied as explained at 2.01.2.
3.	$< 20\%$ of NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length) in any one year (i.e. continuous period of 12 months) during last five years.	If past supply is for less than 20% of the NIT quantity of G.I Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length),the bids will be considered non responsive.

**NOTE:** In case the quantity worked out for past supply on the basis of percentages is in fraction then the fraction below 0.5 will be ignored and in case the fraction is either 0.5 or higher then next whole number will be considered.

### 3.0 Type Test Criteria:

3.01 The bidder shall furnish valid and authenticated Type test certificate ( as per list at clause no.3.2 section-III) from a Govt / a Govt. approved / a Govt. recognized / NABL accredited laboratory / ILAC i.e. International Laboratory Accreditation Cooperation ( in case of foreign laboratory) for GI Bolts & Nuts of same size or of higher size (Higher size means same dia with longer length of tendered material) for the chemical composition test and mechanical properties test as per IS-1367/2002 Part-3 for bolts including hardness test (all the three tests i.e. Rockwell, Vickers & Brinell's hardness tests are required) and IS-1367/1994 Part-6 & 14394/1996 for Nuts and Galvanising test as per IS-1367/1983 Part-XIII for both bolts & nuts. Such type test certificate should not be older than 7 years as on the date of bid opening. For this purpose date of conducting type test will be considered.

The type test certificate from in house laboratory of tendering firm even if it is a Govt. approved / Govt. recognized/ NABL accredited / ILAC

accredited shall not be accepted in case of their own tender. This will not apply if tendering firm is Govt. company / Public Sector Undertaking.

- 3.02 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).
- 3.03 The type test certificates shall be furnished either in original or copy duly attested by notary.
- 3.04 The bids of only those bidders shall be considered to be meeting the type test criteria who furnishes complete type test certificate with the bid as per above provision.

However in the following cases the bid of the bidder may be considered meeting the type test criteria if the bidder furnishes an undertaking in respect of such type tests that valid type test certificate from a Govt. / Govt. approved / Govt. recognized / NABL accredited /ILAC Accredited laboratory shall be furnished before commencement of supplies (without asking any delivery extension) along with bank guarantee from a Nationalized / Scheduled bank in prescribed proforma at **Annexure-2** or DD / Pay order (in the name of Accounts Officer (TLPC), RVPN, Jaipur ) amounting to Rs. 5 lacs :-

- (i) Where one or more type test (s) is/are older than 7 years.
- (ii) Where new type test have been introduced in the relevant standard.
- (iii) Where some changes in respect of type test procedure of exiting type test have been introduced in the relevant standard.

3.05 In case, the bidder fails to furnish the type test certificate before commencement of supplies, their bank guarantee / DD / pay order will be invoked / forfeited and their performance will be adjudged poor.

- 4.0 The bids of only those bidders will be considered to be qualified for price bid opening who meet the qualifying criteria at 1 to 3 above. Such bidders shall however quote for minimum 20% of NIT quantity, failing which the offer will be considered non-responsive.

#### 5.0 Poor Record of Performance and Delivery:

5.01 RVPN reserves the right to reject any offer on the basis of poor after sales service and performance of the equipment supplied by the bidder against the previous orders. For this purpose the orders executed by bidder upto last three years (as on the date of bid opening) for the same items in RVPN shall be considered.

- 5.02 The bids of existing suppliers will not be considered for opening the price bid in case of the following:-
- (j) The bidders who are defaulters for 25% or more quantity for more than 6 months or any quantity for more than 12 months in making the supplies against order placed during last three years as on the date of technical bid opening beyond the overall delivery schedule for the total ordered quantity.

(ii) The bids of firms which have been debarred, black listed or with whom business relations have been severed.

6.0 The following firms are exempted from submitting the requisite documents towards past supply and performance criteria as detailed below:

- (i) M/S A.V. Forgings, Mohali
- (ii) M/S N.L. Engineering Pvt.Ltd., Mohali

### **7.0 Trial order**

- a) Where the price offered by any qualified firm/bidder which is new to RVPN is L-1 or lower than the price quoted by qualified regular supplier, such new bidder will be considered for placement of trial order only. The trial order for a particular item shall not generally exceed 10% of the total quantity considered for placement of order.
- b) However in case of purchase of any special/ uncommon items where there are not many qualified regular suppliers or where only new bidder(s) get qualified for regular/common item or the regular bidder is not qualified for the NIT quantity /balance quantity after allocating the trial order quantity to new bidder, or regular bidder has not quoted for full NIT quantity or for any other reasons which the purchase committee may feel appropriate, this ceiling/ restriction can be relaxed by the purchase committee competent to decide the purchase.
- c) In other case of purchase of regular/common items, the ceiling of 10% may be relaxed by the CMD level purchase committee.
- d) As far as possible, the material received under the trial order will be put to use promptly with a view to watching its suitability/ performance. The firms executing trial order will be considered for placement of next order as regular supplier in case the performance of the material/ equipment supplied by the firm is found satisfactory for at least 12 months period.
- e) In respect of items where performance criteria is specified in pre qualification requirement, if the performance period of 12 months specified as above is not over till the date of opening of technical bid of the subsequent tender for the same item, the bid of the firm executing trial order may be considered for price bid opening for the trial order again subject to the condition that the firm is meeting the P.Q.R. and has completed the supply of trial order placed on it within specified overall delivery schedule of total ordered quantity.
- f) For items where the performance criteria is not stipulated in P.Q.R. and the performance period of 12 months specified as above is not over prior to the date of technical bid opening, the price bid of the firm executing trial order may be considered for price bid opening as regular supplier subject to the condition that the bidder has supplied the ordered quantity within the stipulated overall delivery schedule.

**8.0** RVPN reserves the right to accept minor deviations in Qualifying requirement & Techno-Commercial Conditions on the merits.