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ODISHA POWER TRANSMISSION CORPORATION LIMITED

OFFICE OF THE G.M. (ELECT.), EHT (O&M) CIRCLE, JAJPUR ROAD
AT: QR. NO.: 4R1, TTS COLONY, P.O.: SOBRA, DIST: JAJPUR, PIN-755019, ODISHA.
E-mail:- ehtm.cle.jjp@optcl.co.in, CIN: - U40102OR2004SGC007553

TENDER SPECIFICATION NO. - JJPC-OT-27/2025-26

For

**Supply of different types of hardware fittings, clamps and connectors for GSS, Joda under
EHT(O&M) Division, Joda.**

COST OF TENDER DOCUMENT: Rs. 4000/-+ GST @ 18 %(Rs.720/-) =Rs 4,720.00

EMD: Rs.10,000/-

COMMENCEMENT OF SALE OF TENDER PAPER: Dt. 06.03.2026.

LAST DATE OF SALE OF TENDER PAPER: Dt. 30.03.2026 up to 12:00 PM

LAST DATE OF RECEIPT OF TENDER PAPER: Dt. 30.03.2026 up to 01:00 PM

DATE OF OPENING OF TENDER PAPER: Dt. 30.03.2026 on or after 3.00PM

ISSUED TO

M/s

.....

MONEY RECEIPT NO. / DATE.....

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SECTION- I



ଓଡ଼ିଶା ବିଦ୍ୟୁତ ଶକ୍ତି ସଂଚାରଣ ନିଗମ ଲିଡ.

ODISHA POWER TRANSMISSION CORPORATION LIMITED

(A Government of Odisha Undertaking)

Regd.Office: Janapath Bhubaneswar-751022

OFFICE OF THE G.M. (ELECT.) E.H.T.(O&M) CIRCLE, JAJPUR ROAD.

AT-TTS COLONY, PO-SOBRA, JAJPUR ROAD, DIST: - JAJPUR PIN: - 755019 (ODISHA)

E-mail:- ehtm.cle.jjp@optcl.co.in, CIN: - U40102OR2004SGC007553.

TENDER CALL NOTICE NO.JJPC-OT-27/2025-26

Sealed Tenders in prescribed proforma in duplicate are invited from reputed authorized dealer / manufacturer must possess valid goods & service tax registration certificate and experience certificate, for the work as detailed below:

Sl No	Description of work	Estimated Cost	Cost of tender paper. (Non-refundable)	EMD Amount
1	Supply of different types of hardware fittings, clamps and connectors for GSS, Joda under EHT(O&M) Division, Joda	Rs. 9,97,611/- (Including all Taxes)	Rs. 4,720/- (Including GST)	Rs.10,000/-

The tender documents can be made available in the office of undersigned on written request and payment of required dues by Cash / Demand Draft in favour of General Manager (Electrical), EHT (O&M) Circle, OPTCL, Jajpur Road payable at Jajpur Road. Additional amount of Rs.100/- (Rupees one hundred) only may be paid for postal delivery of Tender documents. The undersigned shall not be held responsible for any postal delay.

The Tender bid must be accompanied with clear attested photo copies of valid (i) PAN card of the Tenderer (ii) GST registration certificate (iii) Experience Certificate of the firm.

1. Cost of tender paper (Non-refundable) : Rs.4,000/- + GST 18% = Rs.4,720/-
2. Sales of Tender Paper from : Dt. 06.03.2026 to 23.03.2026 up to 12:00 PM.
3. Last date & time of receipt of tender paper : Dt. 23.03.2026 up to 01:00 PM.
4. Date & time of opening of tender paper : Dt. 23.03.2026 on or after 4.00PM at EHT (O&M) Circle, Jajpur Road.

The Tender bids will be opened on Dt. 23.03.2026 on or after 4:00 PM in presence of Tenders or their representatives (one person only with original authorization letter). Incomplete Tender paper shall be rejected. Besides these, the undersigned reserves the right to accept or reject any or all tenders without assigning any reason thereof.

General Manager (Elect.)
EHT (O&M) Circle, Jajpur Road.

CORRIGENDUM TO OPEN TENDER CALL NOTICE NO.: JJPC-OT-27/2025-26

This is to notify that the scheduled dates of this office Open Tender No. JJPC-OT-27/2025-26 for the “**Supply of hardwire fittings and clamp & connectors for 132KV Bus Augmentation from ACSR Zebra to ACSR Double Moose at 220/132/33KV Grid S/S, Joda under EHT(O&M) Division, Joda**” are as below:

Last date & time of Sales of Tender Paper up to	: Dt. 30.03.2026, 12:00 PM.
Last date & time of submission of tender paper up to	: Dt. 30.03.2026, 01:00 PM.
Date & time of opening of tender paper on or after	: Dt. 30.03.2026, 4.00PM

General Manager (Elect)
EHT (O&M) Circle, Jajpur Road

SECTION - II

INSTRUCTION TO TENDERERS

1. The bidders must read in detail the "Instruction to Tenderers", "General terms and conditions" and all other sections carefully before filling the Tender documents. There are six sections in this Tender Specification.
2. **TENDER SHALL BE IN TWO PARTS:** The Tenderers are required to submit the tenders in two parts viz Part-I (Techno commercial) & Part-II (Price bid). Sealed tenders in duplicate duly superscribed as "TENDER AGAINST TENDER NOTICE NO. - JJPC-OT-27/2025-26" are invited from reputed authorized dealer / manufacturer along with valid IT PAN Card, GST registration and experience certificate, for the work "Supply of different types of hardware fittings, clamps and connectors for GSS, Joda under EHT(O&M) Division, Joda." as per technical specification enclosed to be received in this office on or before 1:00 PM dated 30.03.2026 and the same will be opened on dated 30.03.2026 on or after 4:00 PM in the presence of the tenderers or their authorized agent. Tenders received after 1:00 PM on Dt. 30.03.2026 will not be accepted since the tender box will be closed at 1:00 PM.
3. **ELIGIBILITY FOR SUBMISSION OF BIDS:-**

Bidders should not have any legal suit or pending litigation against OPTCL / GRIDCO Ltd / SLDC are only eligible for submission of Bids. Firms banned / blacklisted for business dealings by any organization are not eligible to participate in the tender. Participation in the tender by suppression of the above facts shall invite penal action, whenever detected.

The bidders must have in possession of following qualifications for participation in tender:-

- 3.1. GST Registration Certificate. (Mandatory)
 - 3.2. Permanent Account Number (PAN) issued by Income Tax Department. (Mandatory)
 - 3.3. The bidder who will quote for above work shall have supply experience of tendered equipment /material to that quoted, supplied and installed during the last three (03) years with the name(s) of the Organizations to whom supplied wherein, at least one (1) certificate shall be from a state/central Govt. or their undertakings indicating satisfactory performance of the equipment/materials for at least one year from the date of commissioning. The documents may be verified with original copy as required (Mandatory)
4. (A) Tender document can be purchased from the office of the undersigned in the working hours on written request from Dt. 06.03.2026 to Dt. 30.03.2026 up to 12:00PM. Tender documents can also be issued by post on payment of Rs 100/- (Rupees One Hundred) only towards postal charges over & above the cost of tender document.

(B) Tender documents will be received from the tenderers who have only purchased the tender paper from this office within due date. The money receipt towards purchase of tender paper should be enclosed with the tender documents failing which the tenders will be rejected. The Tender may be submitted in duplicate with original signature in both copies in a sealed cover.

5. Tender shall be submitted in person or by Registered post with A/D. Any other means of delivery shall not be accepted. When delivered in person, the tender shall be dropped in tender box with acknowledgement of responsible officer of the office of the **General Manager (Electrical), EHT (O&M) Circle, Jajpur Road** who shall officially acknowledge the receipt of the same. Tender received after due time & date shall not be accepted & liable for rejection.
6. The successful L-1 bidder shall be required to submit **specimen samples of each item within 15-days from the date of issue LOA or purchase order** at their own cost. It's suitability in line with the technical specification shall be assessed by a **Scrutiny Committee**, comprised of official of OPTCL. If samples are found suitable and conforming to the Technical Specification and are duly approved by Scrutiny Committee, the L-1 bidder shall be permitted to proceed with dispatch of the tendered quantity.
7. No telegraphic tenders/forwarding by FAX will be accepted.
8. This office will not be responsible for non-receipt/late receipt of the tender documents due to postal delay.
9. The tenders shall be furnished strictly as per the terms and conditions of the tender specification. Tender received in incomplete shape will be rejected.
10. The Authority may alter the quantum of work at the time of placing orders. Orders may also be split up among more than one tenderer depending upon necessity & urgency.
11. Only those, who have purchased the tender specification from this office by their name/Firm's name, can submit their tender. Tenders submitted by others will be rejected.
12. Bidders themselves or their authorized representatives shall be allowed to attend opening event of the tender. Bidders have right to know information on competitors only at the time of opening of the bids. No further information on competitors shall be provided at any other point/ stage of the tender without prejudice to Right to Information Act. 2005.
13. OPTCL reserves the right to reject the lowest or any other tenders without assigning any reason there of whatsoever.
14. Offers should be neatly typed without any overwriting and corrections. Each overwriting should be duly attested by tenderer.
15. In the event of discrepancy or arithmetical error in the bid, the decision of the purchaser shall be final and binding on the tenderer.
16. For evaluation, the price mentioned in words shall be taken, if there is any difference in figure and words in the price bid.

17. Conditional tender shall not be accepted and no discount other than the quoted price will be allowed as mentioned in the original offer.
18. The tenderers are advised to visit the site and make them acquainted with the site condition before submission of tender.
19. **Submission of Drawing & Approval:** The successful bidder shall submit detailed drawing in triplicate for all single tension hardware fittings for approval at this office prior to manufacturing/supply. The bidder has to submit detailed GA drawings, fabrication drawing and bill of material (BoM) within 15-days from date of LOA/P.O. No manufacturing or supply shall be carried out without written approval of drawing by the employer. Approval of drawing by employer doesn't relieve the contractor of design responsibility, performance or guarantee obligation.
20. Tenderers are expected to be fully conversant with the meaning of all clauses of the specification before submitting their tender. In case of doubt regarding the meaning of any clause the tenderer may ask for clarification from the undersigned in writing. This however doesn't entitle the tenderer to ask for time beyond due date fixed for receipt of tender.
21. The Tender should be accompanied with attested Xerox copy of (i) PAN card of the Tenderer (ii) GST registration certificate of the firm (iii) Experience certificate regarding the works executed earlier.

General Manager (Elect.)
EHT (O&M) Circle, Jajpur Road

SECTION -III
GENERAL TERMS & CONDITIONS OF CONTRACT

1. **SCOPE OF CONTRACT:** Detailed scope of work is appended at Section-IV. The scope of contract covers “**Supply of different types of hardware fittings, clamps and connectors for GGS, Joda under EHT(O&M) Division, Joda**” by following safety procedure, as per the instruction of the site engineer In-charge and technical specification of this tender.
2. **PRICE:** The bidders are advised to quote their rate as per the price schedule in Section-V **in separate sealed envelope** with break up prices including of all Taxes & Duties and shall remain valid up to the validity of tenders. The price should be firm and shall include the cost of all the materials, labour and transportation of all the materials to site including mobilization to complete the work in all respect and also shall cover all incidental expenses towards execution of supply including T&P etc.
3. **DELIVERY PERIOD:** Time being the essence of the contract; the equipment shall be supplied within **thirty (30) days** from the date of placing the Letter of Intent/Purchase order, as may be specified in LOI / Purchase order. The Purchaser, however, reserves the right to reschedule the delivery and change the destination if required.
4. **EXTENSION OF TIME:** If the work could not be completed due to reasons beyond the control of Contractor, he shall without delay give notice to the Authority in writing for an extension of time. The Authority on receipt of such notice may agree to extend the completion period as may be reasonable but without prejudice to other terms and conditions of the contract.
5. **VALIDITY:** The tenderers are requested to keep the validity of their offer for a period of 180 days from the date of opening of the tender.
6. **TERMS OF PAYMENT:** 100% taxable value of each consignment with 100% Goods and Services Tax in full as applicable will be paid on receipt of materials in good condition at desired site and verification thereof subject to i) verification by the verifying officer ii) deposit of security deposit thereof in form of DD/Bank Guarantee iii) furnishing approved copy of Guarantee Certificate and iv) submission of Test Certificates.
7. **PENALTY FOR DELAY IN COMPLETION OF WORK:** If the contractor fails to complete the work within the scheduled period as stipulated in the work order the authority shall recover penalty from the contractors bill, an amount @ 0.5%(half) of the uncompleted work for each calendar week of delay subject to maximum of 5% (Five percent) of the contract value. However, imposition of penalty clause is subject to force majeure condition.
8. **GUARNTEE PERIOD:** The materials supplied shall be guaranteed for a period of at least **18 [Eighteen]** months from the last date of delivery or **12 [Twelve]** months from the date of commissioning whichever is earlier. The above guarantee certificate shall be furnished in triplicate to the purchaser for his approval. Any defect noticed during this period should be rectified by the supplier free of cost to the purchaser provided such defects are due to faulty design, bad workmanship or bad materials used, within one month upon written notice from the purchaser.

9. **GST REGISTRATION & CLEARANCE CERTIFICATE, PAN CARD:** Clear attested Xerox copies of (i) PAN card of the Tenderer, (ii) GST registration & Clearance certificate of the firm, (iii) Experience certificate (As per Instruction to Tenderers Section-I clause No. 3.3 of Eligibility of submission of bid) regarding the works executed earlier on the date of opening of tender should be submitted along with tenders without which tender will be rejected in Techno Commercial Evaluation. The Contractor may be requested to produce original PAN Card, GST clearance certificate and all other relevant documents for verification. Those who fail to produce the same and found not to be valid on the date of opening of tender, their tenders will be rejected. All documents of the tender should be signed by the authorized signatory.
10. **SUBMISSION OF PROOF REGARDING PAST EXPERIENCE:** The bidders are requested to submit the details of his experience of equipment/material similar to that quoted, supplied and installed during the last **three (03) years** with the name(s) of the Organizations to whom supplied wherein, at least one (1) certificate shall be from a state/central Govt. or their undertakings indicating satisfactory performance of the equipment/materials for at least **one (01) year** from the date of commissioning. The reputed manufacturers or authorized vendors with experience will be preferred while deciding the Bid for supply of hardware fittings & clamps and connectors in conformity to relevant IS/IEC.
11. **SECURITY DEPOSIT:** The tenderer whose offer qualifies for acceptance & awarded work order for the execution of the works shall have to deposit amount equal to 10% (Ten) percent of the contract value in shape of D.D drawn in favour of paying officer prior to execution of work, subject to fulfilment of the guarantee stated under clause-8 on receipt of application for this purpose. No interest shall be paid to the contractor towards security deposit so deposited by the contractor.
12. **EARNEST MONEY DEPOSIT:** Tenderer are required to submit earnest money deposit(EMD) for an amount of **Rs. 10,000/-** only towards participation in the tender and is to be submitted in shape of **Cash/Demand Draft** only drawn in favour of General Manager(Elect.), EHT (O&M) Circle, OPTCL, Jajpur Road, Payable at Jajpur Road. Offers without EMD are liable to be rejected.
13. **REJECTION OF WORK:** In the event of any of the materials supplied by the contractor are found to be substandard or otherwise not in conformity with the requirement of this contract specification, the OPTCL shall either reject the materials and / or works and a notice is to be issued to the contractor in this respect. The contractor on receipt of such notice shall rectify or replace the defective material and/or rectify the works free of cost. If the contractor fails to do so the OPTCL may,
- (A) As its option replace or rectify such defective materials and / or works and recover the extra cost so involved plus 15% from the contractor AND/OR
- (B) Terminate the contract for balance work / supplies with enforcement of penalty as per contract. Defective materials will not be accepted under any condition & shall be rejected out rightly without compensation.
14. **VERIFYING OFFICER:** *S.D.O.(Elect.), EHT(O&M) Sub-Division, Joda.*
15. **PAYING OFFICER:** *G.M.(Elect.), EHT(O&M) Circle, Jajpur Road.*

- 16. OUT RIGHT REJECTION OF TENDER:** Tenders shall be out rightly rejected if the followings are not complied with.
- a. The tenderer shall submit the bid in same original tender paper purchased from office of undersigned on submission of the tender cost on or before the scheduled date and time.
 - b. The Tender shall not be submitted telegraphically or by FAX.
 - c. The prescribed EMD shall be submitted on or before the date and time of submission of bid.
 - d. The Tender shall be kept valid for a minimum period of 180 days from the date of opening of tender.
 - e. The Tender shall be submitted **in two parts** as specified.
 - f. The Tenders shall be accompanied by attested copies of GST, PAN and Work Experience prior to the date of opening of tender As per Instruction to Tenderers Section-I Clause No. 3 of Eligibility of submission of bid.
 - g. The schedule of prices should be filled up fully to indicate the break-up of the prices including taxes and duties. Incomplete submission of this schedule will make the tender liable for rejection.
 - h. The Tenderer should quote '**FIRM**' price only and the price should be kept valid for a minimum period of 180 days from the date of opening of the tender.
 - i. The tenderer shall be submitted with the copy legibly written user's certificate to prove the satisfactory operation of the offered Equipments /materials for a minimum period of 2 (two) years from the date of commissioning /use as per the tender specification. User's certificate shall include the detailed address of the user with Equipment/Material, Name and type as per this specification, number of years of satisfactory use/operation & date of issue of this user's certificate with official seal written in English only & clearly visible must be furnished. At least one of the user's certificates shall be from state or Central Govt. or their Undertakings.
 - j. The bidder should not have any pending litigation with OPTCL with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate or a Notary. Bid furnished by the bidder shall not be eligible for consideration if it is not accompanied by the affidavit. Further the bid / LOA/ LOI shall be liable for outright rejection/ cancellation at any stage if any information contrary to the affidavit / declaration is detected.
- 17. RIGHT & AUTHORITY FOR REJECTION/ACCEPT:** - The purchaser reserves the right either to reject or to accept any or all tenders if the situation so warrants in the interest of the purchaser. Orders may also be split up between different Tenderers on individual merits of the Tenderer. The purchaser has exclusive right to alter the quantities of materials/ equipment at the time of placing final purchase order. After placing of the order, the purchaser may defer the delivery of the materials. It may be clearly understood by the Tenderer that the purchaser need not assign any reason for any of the above action[s].

18. MINIMUM QUALIFICATION CRITERIA OF BIDDERS.

(The following supersedes any other criteria indicated elsewhere in the document)

All the prospective bidders are requested to note that their bids for tendered equipment can only be considered for evaluation if:

- a) The bidder should have supply experience of above rated or higher capacity equipment for a minimum period of **3 (three) years** as on the date of opening of the tender.
- b) At least **25%** of the tendered quantity of above rated or higher capacity equipment should have been supplied within the above-stipulated period.
[Note: "within above stipulated period:- within 3 (three) years from the date of opening of this tender].
- c) The above rated or higher capacity equipment should have at least **1 (One)** year successful performance from the date of commissioning. At least one of the performance certificates shall be submitted from Govt. of India/State Govt.(s) or their undertakings.
- d) The Bidder should have conducted type tests on the tendered equipment's/materials in Government approved or any NABL accredited laboratory within **5 (five) years** from the date of opening of the tender.

19. VARIATION, ADDITION & OMISSIONS: OPTCL shall have the right to alter amend, omit or otherwise vary the quantum of modification work if required, in writing to the contractor. The contractor shall carry out such variation in accordance with the rates specified in contract so far as they may apply and where such rates are not available; those will be mutually agreed upon the OPTCL and the contractor.

20. ACCEPTABILITY CHECK: The successful L-1 bidder shall be required to submit specimen samples of each item within 15-days from the date of issue LOA or purchase order at their own cost. It's suitability in line with the technical specification shall be assessed by a **Scrutiny Committee**, comprised of official of OPTCL. If samples are found suitable and conforming to the Technical Specification and are duly approved by Scrutiny Committee, the L-1 bidder shall be permitted to proceed with dispatch of the tendered quantity.

21. ARBITRATION: In the event of any dispute arising out his contract. The same shall be referred for arbitration to the Director (HRD) OPTCL, Bhubaneswar or any arbitrator appointed by the Chairman- Cum- Managing Director, OPTCL after due notice of claim and such appointment and the award of the arbitrator shall be final and binding arbitration and conciliation Act. 1996 shall apply. The venue of arbitration will be Bhubaneswar.

22. JURISDICTION OF COURT: Suits if any arising out of this contract shall be filed by either party in any court of law to which the jurisdiction of Odisha High court extends.

**General Manager (Elect.)
EHT (O&M) Circle, Jajpur Road**

SECTION - IV

TECHNICAL SPECIFICATION

(For 220 kV Hardware Fittings Suitable for Twin ACSR Moose Conductor – 250 mm Spacing)

1. SCOPE

This specification covers design (wherever required), manufacture, testing at manufacturer's works, inspection, supply and delivery of hardware fittings for string insulators and associated conductor fittings suitable for use in 220 kV overhead transmission lines and Grid Sub-Stations of OPTCL for twin ACSR Moose conductor having 250 mm sub-conductor spacing

The hardware fittings covered under this specification include:

1. 220 kV Single Tension Hardware Fitting for Twin ACSR Moose Conductor (250 mm spacing)
2. 220 kV Single Suspension Hardware Fitting for Twin ACSR Moose Conductor with straight clamp (250 mm spacing)
3. Spacer Clamp suitable for Twin ACSR Moose conductor
4. PI Clamp for Single Moose Conductor
5. Spacer T Clamp Aluminium suitable for Twin Moose run to Single Moose drop
6. Spacer T Clamp Aluminium suitable for Twin Moose run to 30 mm dia isolator stud drop
7. Bimetallic T Clamp suitable for Single Moose run to 30 mm dia Copper Isolator stud
8. Bimetallic Pad Clamp for Single Moose conductor to 132 kV Isolator Copper Pad (100 mm × 100 mm)
9. PI Clamp for Twin Moose Conductor (250 mm spacing)

The hardware to be supplied shall be as per approved drawings of OPTCL. Any deviation or change in design, dimensions or material shall be made only with prior written permission of the General Manager (Electrical), EHT (O&M) Circle, Jajpur Road. The successful bidder shall submit Guaranteed Technical Particulars (GTP) and detailed drawings for approval of OPTCL and manufacturing shall be commenced only after obtaining such approval wherever required.

The materials and equipment offered shall be complete in all respects including all components, accessories, bolts, nuts, washers, split pins, compression sleeves, armour rods wherever applicable and all other parts necessary for efficient performance and satisfactory maintenance. Any component or accessory not specifically mentioned in this specification but required for completeness, safety and proper functioning of the equipment shall be deemed to be included within the scope of the contract without any extra cost to OPTCL.

2. APPLICABLE STANDARDS

The materials covered under this specification shall comply with the latest revisions of the following Indian Standards, except where specified otherwise:

- IS: 2486 (Part-II & III) – Insulator fittings for overhead power lines
- IS: 5561 – Power Connectors
- IS: 617 – Aluminium & Aluminium Alloy
- IS: 209 – Specification for Zinc

- IS: 2629 – Recommended Practice for Hot Dip Galvanizing
- IS: 2633 – Method of Testing Uniformity of Zinc Coating
- BS: 916 – Hexagonal Bolts and Nuts

Materials conforming to any other authoritative standards ensuring equal or superior performance shall also be acceptable, provided full particulars are furnished in the bid.

3. SYSTEM PARTICULARS

The hardware fittings shall be suitable for 220 kV system voltage and shall be designed specifically for twin ACSR Moose conductor configuration with sub-conductor spacing of 250 mm. All fittings shall match the mechanical strength, current carrying capacity and operational requirements of the ACSR Moose conductor and shall be suitable for installation in EHT substations and overhead transmission lines of OPTCL.

4. MATERIALS AND WORKMANSHIP

All hardware fittings shall be manufactured from aluminium, aluminium alloys, malleable iron and forged steel having adequate mechanical strength, corrosion resistance and machinability suitable for the intended application. The aluminium used in current carrying parts shall have purity not less than 99.5 percent and shall conform to designation A6 of IS: 617 or equivalent approved grade. The fittings shall be of first class quality and workmanship and shall be well finished. All castings shall be sound, free from blow holes, porosity, cracks, flaws or other defects and shall be true to form and dimensions. All machined surfaces shall be smooth and free from burrs and sharp edges.

All steel or ferrous components shall be hot dip galvanized strictly in accordance with IS: 2629. The galvanizing shall be smooth, uniform and free from blisters, peeling or roughness. The uniformity and thickness of zinc coating shall be tested as per IS: 2633 and shall meet the specified requirements. Bolts, nuts and washers shall be of high tensile steel, properly threaded and hot dip galvanized. Spring washers and plain washers shall be provided wherever necessary to ensure firm tightening and to prevent loosening under vibration.

5. MECHANICAL REQUIREMENTS

All hardware fittings including tension fittings, suspension fittings, spacer clamps, PI clamps and T clamps shall be capable of withstanding the mechanical loads imposed during stringing, normal operation, wind load conditions and short circuit forces. The tension hardware fittings shall be designed to withstand the full breaking strength of the ACSR Moose conductor without causing slippage or strand damage. The suspension fittings shall firmly grip the conductor and shall maintain proper alignment without permitting conductor damage. Spacer clamps shall maintain the specified 250 mm spacing between twin conductors and shall prevent clashing under dynamic conditions. The design of all fittings shall ensure uniform distribution of mechanical stress and shall avoid stress concentration. No permanent deformation shall occur under rated load conditions.

6. ELECTRICAL REQUIREMENTS

The current carrying parts of all clamps and connectors shall have current carrying capacity not less than that of the ACSR Moose conductor. The electrical contact surfaces shall provide low contact resistance and high conductivity. The temperature rise of connectors and clamps when carrying rated

current shall not exceed 45°C above the reference ambient temperature of 50°C. All fittings shall be designed to avoid corona formation under 220 kV operating conditions and there shall be no audible or visible discharge during service. Adequate contact pressure shall be ensured by proper bolt arrangement so that overheating and relaxation due to thermal cycling do not occur.

7. TENSION HARDWARE FITTINGS

The 220 kV single tension hardware fitting suitable for twin ACSR Moose conductor with 250 mm spacing shall be compression type and shall ensure uniform load distribution on both sub-conductors. The fitting shall be compatible with the insulator string hardware and shall provide secure anchoring of the conductor without damaging aluminium strands. The design shall ensure that no relative movement occurs between conductor and fitting under normal and emergency loading conditions.

8. SUSPENSION HARDWARE FITTINGS

The 220 kV single suspension hardware fitting with straight clamp suitable for twin Moose conductor shall provide firm grip without causing strand damage. The clamp shall be designed to prevent conductor slip and shall be suitable for installation on insulator strings used in 220 kV system. The fitting shall maintain the required geometry of twin conductors under service conditions.

9. SPACER CLAMPS

The spacer clamps suitable for twin ACSR Moose conductor shall maintain fixed spacing of 250 mm between sub-conductors. The spacer shall be mechanically strong, corrosion resistant and capable of reducing vibration and preventing clashing of conductors. The design shall ensure that the conductor strands are not damaged and that the clamp does not introduce undue stress on the conductor.

10. PI CLAMPS AND T CLAMPS

The PI clamps suitable for single and twin Moose conductor shall provide uniform contact pressure and adequate contact area to avoid local overheating. Spacer T clamps made of aluminium suitable for twin Moose run to single Moose drop and twin Moose run to 30 mm diameter isolator stud shall ensure proper mechanical support and uniform current transfer. The clamp surface in contact with the conductor shall be smooth and free from sharp projections.

11. BIMETALLIC CLAMPS

Where aluminium conductor is required to be connected to copper isolator stud or copper pad, bimetallic clamps shall be provided. The bimetallic portion shall consist of copper cladding of minimum 4 mm thickness on the aluminium portion coming in contact with the copper surface or alternatively an aluminium copper strip of minimum 2 mm thickness shall be provided. The bonding between aluminium and copper shall be permanent and of high integrity so as to prevent galvanic

corrosion. The contact pressure shall be evenly distributed through suitable arrangement of bolts and washers so as to maintain reliable electrical contact under all service conditions.

12. INTERCHANGEABILITY

Corresponding parts of similar clamps and fittings shall be made to gauge and shall be interchangeable in every respect. Standardization of bolts, pins and washers shall be maintained to facilitate ease of maintenance.

13. TYPE TESTS CERTIFICATES

The offered hardware fittings shall be fully type tested as per latest IS/IES standards (IS 2486, IEC61284 or relevant standards). Valid type test report shall be carried out in any NABL accredited / Government approved laboratories of India and shall not be older than 5-years from the date of bid opening. And test report shall corresponds to the same design, rating and configuration offered. In the absence of valid report, type test shall be carried out at bidder's cost without affecting delivery schedule. Type test shall include, but not to be limited to-

1. Ultimate tensile test
2. Slip strength test
3. Electrical resistance test,
4. Mechanical failing load test of full string assembly
5. Heating cycle test
6. Galvanizing test

All fittings, clamps, connectors and hardware accessories covered under this specification shall be tested in accordance with the latest editions and amendments of relevant Indian Standards such as IS: 2121, IS: 2486, IS: 9708 and BS: 916 for hexagonal bolts and nuts or any other authoritative equivalent standards ensuring equal or superior performance. The bidder shall submit valid Type Test Certificates, Routine Test Certificates and performance reports for the offered items along with the bid. The certificates shall be from recognized testing laboratories and shall clearly indicate compliance with the relevant standards.

**General Manager (Elect.)
EHT (O&M) Circle, Jajpur Roa**

SECTION - V

PRICE SCHEDULE

(To be Submitted in Separate Sealed Envelope)

Name of Work: Supply of different types of hardware fittings, clamps and connectors for GSS, Joda under EHT (O&M) Division, Joda

Sl. No.	Description of Item	Unit	Quantity	Unit Rate (₹)	Total Amount (₹)
1	220 kV Single Tension Hardware Fitting suitable for Twin ACSR Moose Conductor (250 mm spacing)	No	44		
2	220 kV Single Suspension Hardware Fitting suitable for Twin ACSR Moose Conductor with straight clamp (250 mm spacing)	No	10		
3	Spacer Clamp suitable for Twin ACSR Moose Conductor	No	220		
4	PI Clamp suitable for Single ACSR Moose Conductor (250 mm spacing)	No	15		
5	Spacer T Clamp Aluminium suitable for Twin ACSR Moose Run to Single ACSR Moose Drop (250 mm spacing)	No	34		
6	Spacer T Clamp Aluminium suitable for Twin ACSR Moose Run to 30 mm dia Isolator Stud Drop (250 mm spacing)	No	17		
7	T Clamp Bimetallic suitable for Single ACSR Moose Run to 30 mm dia Copper Isolator Stud Drop	No	26		
8	Bimetallic Pad Clamp suitable for Single ACSR Moose Conductor to 132 kV Copper Isolator Pad (Pad size 100 mm × 100 mm)	No	26		
9	PI Clamp suitable for Twin ACSR Moose Conductor (250 mm spacing)	No	12		
Total					
GST@ _____%					
Grand Total (Including GST)					

Signature of Bidder with Date & Seal

SECTION - VI
SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS

HARDWARE FITTINGS AND ACCESSORIES FOR AAAC/ ACSR PANTHER/ZEBRA/MOOSE CONDUCTOR

A.	HARDWARES	SUSPENSION		TENSION
i	Maker's name, Address and Country			
ii	Size and designation of ball and socket with standard specification to which conforming	16mm as per IS 2486		20mm as per IS 2486
iii	Material			
a)	Anchor shackle	NA		Forged steel Galvanized
b)	Chain Link	NA		Forged Steel Galvanized
c)	Ball hook / Ball Link (HH)	Forged Steel Galvanized		Forged Steel Galvanized
d)	Socket Eye (HH)	Forged Steel Galvanized		NA
e)	Ball Clevis	Forged Steel Galvanized		Forged Steel Galvanized
f)	Socket Clevis	Forged Steel Galvanized		Forged Steel Galvanized
g)	Yoke Plate	Mild Steel Galvanized		Mild Steel Galvanized
h)	Arcing Horn	Mild Steel Galvanized		Mild Steel Galvanized
I)	Clamp Suspension	A.G.S. Clamp		NA
J)	Dead End/Cross arm strap	NA		NA
k)	Dead end clamp (Compression)	NA		Extruded Aluminum Alloy
iv	Standard specification to which the Hardware conform	IS 2486, IS: 2004, IS:617, IS-2633, & IS-733		
v	Standard specification to which conforming	IS: 2486		
vi	Galvanizing			
a)	Ferrous parts	Hot Dip Galvanized		
b)	Spring washers	Electro Galvanized		
c)	Quality of zinc used	99.5%		
d)	Number of dips which the clamp can withstand	4/ 1 minute dips		
vii	Standard to which conforming	IS 2633		
Viii	Reference to drawing No.			
ix	Minimum failing load in kg	For AAAC/ ACSR Panther (132 KV)	For AAAC/ ACSR Zebra (220 KV)	For AAAC/ ACSR Moose (220 KV)

a)	For Single Tension Hardware Fittings	120 KN	160 KN	160 KN
b)	For Double Tension Hardware Fittings	120 KN	160 KN	160 KN
c)	For Single Suspension Hardware Fittings	90KN	120KN	120KN
d)	For Double Suspension Hardware Fittings	90 KN	120 KN	120 KN
B.	TENSION CLAMPS	Suitable for AAAC/ ACSR Panther, Zebra & Moose		
i	Type	Compression type tension clamp		
ii	Material	Ext. Al. Alloy/ Ext. Al.		
iii	Breaking Strength	95% of UTS of Conductor		
iv	Slipping strength	95% of UTS of Conductor		
v	Galvanising			
a)	Ferrous parts	Hot Dip Galvanized		
b)	Spring washers	Electro Galvanized		
c)	Quality of zinc used	99.5%		
d)	Number of dips which the clamp can withstand	4/ 1 minute dips		
vi	Standard to which conforming	IS 2633		
vii	Electrical Conductivity			
	a. Results of heating cycle test carried out			
	b. Electrical resistance	Not more than 75% of equivalent length of conductor		
viii	Reference to type tests and other tests reports attached			
ix	Make of bolts and nuts used			
C.	SUSPENSION CLAMPS	AAAC/ ACSR Panther	AAAC/ ACSR Zebra	AAAC/ ACSR Moose
i	Type	AGS Type		
ii	Type of material used for retaining rod for AGS assembly giving reference of ISS	Aluminum Alloy 6061/ Equivalent	Aluminum Alloy 6061/ Equivalent	Aluminum Alloy 6061/ Equivalent
iii	Minimum tensile strength of retaining rod material	35 kg/mm ²	35 kg/mm ²	35 kg/mm ²
iv	Chemical composition of retaining rod material	As per IS:733	As per IS:733	As per IS:733
v	Electrical conductivity of Armour Rod material (in percentage of the conductivity of IACS i.e. International	Not less than 40% of IACS	Not less than 40% of IACS	Not less than 40% of IACS

	Annealed Copper Standard				
vi	Slipping strength of cushioned suspension assembly	8% to 15% of UTS of Conductor	20 to 29 KN	20 to 29 KN	20 to 29 KN
vii	Breaking strength of suspension Clamp	9000kgf	12000kgf	12000kgf	12000kgf
viii	Physical properties of neoprene cushion				
a)	Minimum Tensile Strength	2000 psi	2000 psi	2000 psi	2000 psi
b)	Minimum ultimate Elongation	300%	300%	300%	300%
ix)	Ageing (guaranteed life of the assembly)	40 years	40 years	40 years	40 years
x)	Hardness	65 to 80 A	65 to 80 A	65 to 80 A	65 to 80 A
D.	Mid-Span Compression Joints	Panther		Zebra	
		AAAC	ACSR	AAAC	ACSR
i	Type	Compression Type			
ii	Suitable for	AAAC	ACSR	AAAC	ACSR
		Panther	Panther	Zebra	Zebra
iii	Materials				
a	Outer Sleeve	Ex. Al. Alloy	Ex. Al.	Ex. Al. Alloy	Ex. Al.
b	Inner Sleeve	N.A.	Galvanized Steel	N.A.	Galvanized Steel
iv	Outer Sleeve				

a	Outer Dia. Before compression (mm)	Ø 38	Ø 38	Ø 48	Ø 48
b	Flat to Flat After compression (mm)	32	32	40	40
v	Length of Outer Sleeve				
a	Before compression (mm)	610	610	711	711
b	After compression (mm)	655	660	760	768
vi	Inner Sleeve				
a	Outer Dia. Before compression (mm)	N.A.	Ø 18	N.A.	Ø 19.2
b	Flat to Flat After compression (mm)	N.A.	15.1	N.A.	16.1
vii	Length of Inner Sleeve				
a	Before compression (mm)	N.A.	203	N.A.	241
b	After compression (mm)	N.A.	230	N.A.	273
viii	Weight of Sleeve				
a	Aluminum (kg)	1.2	1.2	2.032	2.032
b	Galvanized Steel (kg)	N.A.	0.295	N.A.	0.410
ix	Galvanizing				
a	Ferrous parts	Hot Dip Galvanized			
b	Spring washers	Electro Galvanized			
c	Quality of zinc used	99.5%			
d	Number of dips which the clamp can withstand	4/ 1 minute dips			
x	Standard to which conforming	IS 2633			
xi	Slipping strength of mid span joint expressed as percentage of UTS of conductor	95%			
xii	Breaking strength of mid span joint expressed as percentage of UTS of conduct	95%			
xiii	Conductivity of Compression joint expressed as percentage of conductivity of cable	100% of equivalent length of conductor			
	Resistance as percentage of measured				

xiv	resistance of equivalent length of conductor	Not more than 75% of equivalent length of conductor
E.	Compression type Tension clamp/ dead end Assembly for 7/3.15mm Galvanized Stranded Steel Wire	
i	Materials	Forged steel
ii	Size	As per drawing
iii	Suitable for ground wire	Yes (7/3.15)
iv	Weight in kg	3.69
v	Minimum failing load	70 KN
vi	Galvanising	
a	Ferrous parts	Hot Dip Galvanised
b	Spring washers	Electro Galvanized
c	Quality of zinc used	99.5%
d	Number of dips which the clamp can withstand	4/ 1 minute dips
vii	Standard to which conforming	IS 2486 and IS 2633

SECTION - VII
DECLARATION BY THE BIDDER

1. Name of the bidder with
Detailed postal address with
Contact Number.
2. Xerox copy of Authorized dealership certificate Furnished/ not furnished
3. Xerox copy of PAN No: Furnished/ not furnished
4. Xerox copy of GST Registration certificate: Furnished/ not furnished
5. Agreed to furnish & accept Contract Security deposit clause: Yes/ No.
6. Agreed to accept payment terms as per Tender Specification. Yes/ No.
7. Agreed to adhere delivery period as per the contract: Yes/ No.
8. Agreed to accept penalty clause as per the tender: Yes/ No.
9. Attach past experience certificate for the similar jobs
in Central/State Govt.(s) or their Undertakings
Yes/ No.
10. Agreed to keep validity of the offer for 180 days from the
Date of tender opening without any variations in tender clause: Yes/ No.
11. Name of the manufacturer mentioned Yes/No
12. Guaranteed Technical particulars furnished Yes/No
13. Technical literature & manufacturer's price list furnished. Yes/No

Date:
Place:

Signature of the Bidder
with seal

ANNEXURE -I

LITIGATION HISTORY

Calender Year.	Award for or against bidder	Name of client, cause of litigation and matter in dispute	Disputed amount (current value in Rs.)

Place: -
Date

Signature of Tenderer:
Name, Designation, Seal

THE BIDDERS ARE REQUIRED TO FURNISH THE FOLLOWING DETAILS AS PER THE FORMAT GIVEN BELOW WHICH IS A MANDATORY REQUIREMENT FOR EVALUATION OF BIDS

SL NO	DETAILS	TO BE FILLED BY THE BIDDER
1	BIDDER'S NAME	
2	BIDDER'S SITE NAME (NAME OF THE PLACE)	
3	ADDRESS	
4	CITY	
5	STATE	
6	COUNTRY	
7	PIN CODE	
8	PHONE NUMBER	
9	GST REGISTRATION NUMBER	
10	PAN NUMBER	
11	TAN NUMBER	
12	CONTACT PERSON'S NAME	
13	CONTACT PERSON'S E-MAIL ID	
14	CONTACT PERSON'S PHONE NO.AND MOBILE NO.	

Signature of Bidder with Date & Seal