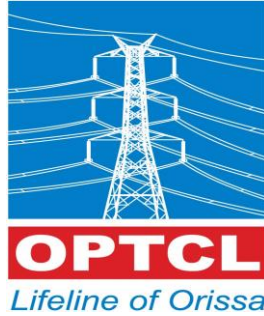


# ODISHA POWER TRANSMISSION CORPORATION LIMITED



OFFICE OF THE  
GENERAL MANAGER (ELECTRICAL)  
E.H.T. CONSTRUCTION CIRCLE , SAMBALPUR  
AT: 132/33 KV GRID SUB-STATION  
GANESH NAGAR, BOHIDAR NUAPALI  
P.O. SANKARMA, VIA : REMED  
DIST. SAMBALPUR, PIN – 768 006 (ORISSA)  
FAX : 0663 – 2540974

## TENDER SPECIFICATION NO. EHT (C) / T / 01/ 2019-20

**FOR**

**BID DOCUMENT FOR**

**(Procurement of hardware fittings and accessories for diversion of 132 KV  
RSP SAIL line)**

START OF SALE OF TENDER SPECIFICATION	: 22.05.2019
LAST DATE OF SALE OF TENDER SPECIFICATION	: Up to 1.00 P.M. of 31.05.2019
LAST DATE OF SUBMISSION OF TENDER	: Up to 3.00 P.M. of 31.05.2019
DATE & TIME OF OPENING OF TENDER	: At 3.30 P.M. of 31.05.2019

PRICE : Rs.4,480/- inclusive of GST 12%



**ଓଡିଶା ବିଦ୍ୟୁତ୍ ଶକ୍ତି ସଂଚାରଣ ନିଗମ ଲି.ଃ.**  
**ODISHA POWER TRANSMISSION CORPORATION LIMITED**

(A Government of Odisha Undertaking)  
**E.H.T. CONSTRUCTION CIRCLE, SAMBALPUR**  
**At: 132/33 KV Grid Sub-station, Ganesh Nagar, BohidarNuapali**  
**P.O. Sankarma, Via: Remed, Dist. Sambalpur-768006**  
Telephone: : (0663) 2540974E-mail:[ehc.cle.sbp@optcl.co.in](mailto:ehc.cle.sbp@optcl.co.in)  
CIN: U4102OR2004SGC007553

**TENDER CALL NOTICE No. EHT(C) / T / 01 / 2019-20**

For and on behalf of the Odisha Power Transmission Corporation Limited the undersigned invites sealed tenders from the eligible suppliers / registered firms / manufacturers having valid GST registration certificate, authorized dealership certificate and PAN . The above documents are required to be produced at the time of sale of tender specification / documents and furnish the same with the tender for "**supply of hardware fittings and accessories for diversion of 132 KV RSP SAIL line**" in the prescribed format of tender specification, which can be obtained from the office of the undersigned during working hours from dt.**22.05.2019** to 1.00 P.M. of dt. **31.05.2019** on payment of non-refundable cost of tender specification amounting to Rs.4000.00 + 12% GST = Rs.4480.00 (Rupees Four Thousand Four Hundred Eighty) only in shape of Cash / Bank Draft drawn on any Nationalized Bank payable at Sambalpur in favour of "**EHT (Construction) Circle, OPTCL, Sambalpur**". The complete tender along with E.M.D. @ 1% of their total quoted amount in shape of Cash / Bank Draft drawn in the manner prescribed above will be received up to 3.00 P.M. of **31.05.2019** and the tender will be opened at 3.30 P.M. on the same day in presence of the bidders or their authorized representatives if any. The undersigned reserves the right to accept or reject any or all tenders without assigning any reason thereof, if the situation so warrants and OPTCL shall not be responsible for any postal delay at any stage. For more details please visit our website [www.optcl.co.in](http://www.optcl.co.in).

**General Manager (Elect.)**  
**E.H.T. Const. Circle, Sambalpur**

Memo No: / Dated, Sambalpur

Chief General Manager (Constn.), Zone-II, OPTCL, Sambalpur / Chief General Manager (Constn.), OPTCL, Bhubaneswar for kind information.

Dy. General Manager, EHT (Constn.) Division Jharsuguda / Bolangir / Dy. General Manager, EHT (O&M) Division, Burla / General Manager, EHT(Constn.) Circle, Bhubaneswar /

General Manager, EHT (O & M) Circle, Burla for information. They are requested to display the Tender Notice in their Notice Board.

Copy to Notice Board / Cashier, EHT (Constn.) Circle, Sambalpur for information.

**General Manager (Elect.)**



## ODISHA POWER TRANSMISSION CORPORATION LIMITED

( A Government of Odisha Undertaking )

OFFICE OF THE GENERAL MANAGER, ELECTRICAL  
E.H.T. CONSTRUCTION CIRCLE, SAMBALPUR

At: 132/33 KV Grid Sub-station, Ganesh Nagar, Bohidar Nuapali

P.O. Sankarma, Via: Remed, Dist. Sambalpur-768006

Phone / Fax : 0663 - 2540974

### TENDER SPECIFICATION NO. EHT (C) / T / 01 / 2019-20

#### Contents:

1. SECTION – I : Instructions to Tenderers.
2. SECTION – II : General Conditions of Contract.
3. SECTION –III : Technical Specification
4. ANNEXURES : I to VI

No. \_\_\_\_\_ / dated, Sambalpur the

Issued to:

M/s.....

**General Manager, Elec.  
EHT (Constn.) Circle, Sambalpur**

## SECTION – I

### INSTRUCTIONS TO TENDERERS

1. Sealed Tenders in duplicate (each complete with all details in the manner here-in-after specified) together with the declaration form duly signed by the tenderer are to be submitted in the office of the General Manager, EHT (Construction) Circle, OPTCL, Sambalpur in sealed covers superscribed with the relevant tender specification number and due date of opening as indicated in the tender notice as well as on the cover page of this specification .
2. The specification is divided into four sections : -
  - (i) Section – I – Instruction to Tenderers.
  - (ii) Section – II – General Conditions of Contract.
  - (iii) Section – III – Technical Specifications.
  - (iv) Section – IV – Schedules and Forms, Annexure etc.
3. The Authority may alter the quantities of material at the time of placing Work Orders. Work Orders may also be split up among more than one bidder.
4. Tenders will be opened in the office of the General Manager, EHT Construction Circle, At: 132/33 KV Grid Sub-station, Ganesh Nagar, Bohidar Nuapali, P.O.: Sankarma, Via: Remed, Dist.: Sambalpur-6 at 3.30 PM on date prescribed in the Tender Call Notice in the presence of the renderers or their authorized representatives who may be required to produce their letter of Authorization, failing which they may not be allowed.
5. Only those who have purchased the copy of relevant "Specification No.EHT(C)/T/01/2019-20" can only submit their tender. Tenders submitted by others will be rejected.
6. The Authority reserves the right to reject the lowest or any other tenders or all the tenders without assigning any reason what so ever if it is considered expedient in the overall interest of OPTCL.
7. The tender should be submitted in person or by Registered post with A.D. Any other means of delivery shall not be accepted. When submitted by post, postal delay shall not be entertained. When delivered in person, the tenders shall be received by a responsible officer of the office of the tender issuing Authority who shall officially acknowledge the receipt of the same.
8. Tenders received after due date and time shall be returned unopened. Telegraphic or Fax Tenders shall not be accepted under any circumstances.
9. **EARNEST MONEY DEPOSIT :**  
The tender shall be accompanied by Earnest Money Deposit @ 1% of their total quoted amount in shape of Bank draft drawn in any

Nationalized Bank in favour of "**EHT (Construction.) Circle, OPTCL, Sambalpur**" payable at Sambalpur subject to the condition mentioned below.

- (i) No interest shall be paid on Earnest Money Deposit.
- (ii) No adjustment towards Earnest Money Deposit shall be permitted against any outstanding amount with OPTCL.
- (iii) In the case of unsuccessful tenderer, the Earnest Money will be refunded only after finalization of tender. In the case of the successful bidder the Earnest Money will be taken into account in arriving at the Security Money referred to in clause (3) of Section - II General Condition of Contract.
- (iv) Earnest Money / Security Deposit will be forfeited if the tenderer fails to accept the letter of intent and / or Work Orders issued in his favour.
- (v) Tenders not accompanied by Earnest Money shall be disqualified.
- (vi) Earnest Money will be forfeited if the tenderer fails to execute the works.

**10. Validity :**

The tenders should be kept valid for a period of 120 days from the date of opening of the tenders as notified in the tender notice and subsequent amendment thereof, failing which the tenders will be rejected .

11. Tenderers are required to submit tenders in the following manner. All documents/ informations as described below shall be placed in each sealed cover.

- (i) General Information - Annexure - I
- (ii) Declaration Form - Annexure - II
- (iii) Abstract of Terms & Conditions - Annexure - III
- (iv) Experience Record - Annexure - IV
- (v) Litigation History - Annexure - V
- (vi) Schedule of prices - Annexure - VI

The tenderer must fulfill the following requirements and submit copies of the documents in support of the same along with their Tender.

- (i) Adequate experience in the similar field is required failing of which the price bid will not open and tender likely to be rejected.

- (ii) Valid GST & PAN No. on favour of the tenderer.

The Tender should be accompanied By Earnest Money Deposit as per Clause-9 of this Section. Tenders not accompanied by Earnest Money Deposit shall be disqualified.

12. Bidders must quote their price in line with the specification and conditions. Any deviations from the above shall be considered as an alternate bid. Bids will be evaluated based on the main offer only.

13. (i) Overwriting shall be avoided.  
(ii) Overwriting, erasures and other changes shall bear the dated initial of the person signing the tender.

- (iii) In the event of discrepancy or arithmetical error in the schedule of price the unit price shall prevail and the purchaser shall accordingly correct the total price. The above arithmetical correction shall be accepted but the decision of the OPTCL shall be final and binding on the tender.
  - (iv) For evaluation, the price mentioned in word shall be taken if there is any difference in figures and words in the price bid.
  - (v) The quoted price should be kept valid for 120 days from the date of opening of the tender. Bidders are requested to quote Firm price only.
  - (vi) Each page of the tender document shall be signed and sealed with official rubber stamp by the tenderer.
14. Price quoted should be inclusive of all taxes and duties.

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## SECTION –II

### GENERAL CONDITIONS OF CONTRACT.

1. **Scope:** - The scope of the contract shall be to design, manufacture, supply of materials/ equipments as per the specification and drawing at the consignee's site, and rendering services in accordance with the enclosed technical specification and bill of quantity
2. **Drawing & Descriptive Literatures:** -Out line drawings and descriptive literatures of materials should accompany the tender giving full details of the stores to be supplied.
3. **Samples and Test Certificates:** - One set Sample and Type Test Certificate has to be submitted by the successful tenderer for approval within 7 days of issue of the purchase order failing which the order is liable for cancellation. The test certificate from ISI approved testing laboratory will also be accepted as and where applicable
4. **Standards:** - The materials should confirm to the latest publications of relevant I.S.S.
5. **Guarantee:** - The materials should be guaranteed for satisfactory operation for a period of at least 18 months from the last date of supply or 12 months from the date of use whichever is earlier. Any defect noticed during the period should be rectified by the supplier free of cost provided such defects are found to be due to faulty design, bad workmanship or bad materials used. Otherwise the security deposit shall be forfeited.

The tenders should guarantee the following among other things.

- i) Quality and strength of materials used.
  - ii) Safe mechanical strength of all parts of materials as required under relevant I.S.S.
  - iii) Satisfactory operation during guarantee period.
6. **Price:**  
The price should be FIRM, FOR delivery at EHT(C) S/D office, Rourkela including packing, forwarding, freight, insurance and taxes. The break-up of FOR destination price as per schedule of prices at Annexure-VI must be submitted along with the tender. Any price other than FOR destination price as mentioned above shall not be considered.



7. **Terms of Payment:**

The terms of payment for the stores covered by the specification are:- 100% of the total contract value of the material delivered with the GST shall be paid within one month subject to funds received from Hqrs. Office after receipt of materials with relevant documents at site in good condition after due approval of Guarantee Certificate and Test Certificates.

8. **Delivery and Penalty:**

Delivery of the materials covered under this specification shall commence within 10 (ten) days and shall be completed within 20(twenty) days from the date of issue of Purchase Order. The detail delivery program shall be mentioned in the purchase order.

If the delivery is delayed beyond the stipulated delivery period, penalty @ half percent of the contract value of the undelivered materials per week subject to a maximum of 5% of the contract price of the same shall be levied.

9. **Security Deposit:**

The successful tenderers will be required to deposit a sum amounting to 10% of the contract value in any of the approved forms viz: Bank Draft / Bank Guarantee / State Government Securities, Security Deposit offered in shape of Bank Draft should be made payable to the "Dy.General Manager, EHT Construction Division, OPTCL, Jharsuguda" and Security Deposit offered in other forms of securities should be paid in favour of E.H.T. Construction Division, OPTCL, Jharsuguda otherwise the same will be deducted from the bill.

Small scale Industries of Orissa registered with the Director of E.P.M. Orissa shall be exempted from payment of Security Deposit.

All Government undertakings whether of Central or State shall be exempted from Security Deposit.

10. No interest is payable either in the case of Earnest money or Security Deposit. Security Deposit will be forfeited if the successful, tenderer fails to execute the order placed on him.

11. **Inspection:** -The stores will be inspected by the Inspecting Officer authorised by this office from time to time prior to their dispatch to destinations or the materials will be verified at the destination by OPTCL Authority. Intimation about readiness of materials for inspection and dispatch should be intimated at least 5 days in advance. The Supplier shall offer all facilities to the Inspecting Officer for such inspection at their works. If the Purchaser has reasons to doubt the adequacy of the Suppliers testing facilities, the tests may be conducted at any other test house approved by the Purchaser. Cost of such testing shall be borne by the Supplier.

12. **Jurisdiction of Court:** - Suits, if any, arising out of this contract shall be filed by either party in a court of law to which the jurisdiction of High Court of Orissa extends.
13. **GST & PAN No:** - GST registration certificate & PAN No should be enclosed with the tender.
14. **Right to Reject / Accept any Tender:** - The purchaser reserves the right either to reject or accept any or all tenders. Orders may also be split up between different tenderers in individual merit of the tenders. The purchaser has exclusive right to alter the quantities of materials 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 the above sections.
15. **Rejection of Materials:-**  
In the event any of the equipments/material supplied by the manufacturer is found defective due to faulty design, bad workmanship, bad materials used or otherwise not in conformity with the requirements of the Specification, the Purchaser shall either reject the equipment/material or ask the supplier in writing to rectify or replace the defective equipment/material free of cost to the purchaser. The Supplier on receipt of such notification shall either rectify or replace the defective equipment/material free of cost to the purchaser within 15 days from the date of issue of such notification by the purchaser. If the supplier fails to do so, the Purchaser may:-  
[a] At its option replace or rectify such defective equipments/materials and recover the extra costs so involved from the supplier plus fifteen percent and/or.  
[b] Terminate the contract for balance work/supplies, with enforcement of penalty Clause as per contract for the un-delivered goods and with forfeiture of Performance Guarantee/ Composite Bank guarantee.  
[c] Acquire the defective equipment/materials at reduced price, considered equitable under the circumstances.
16. **Contractors/Suppliers responsibility:** - Non-withstanding anything mentioned in the specification or subsequent approval or acceptance of the purchase, the ultimate responsibility of the design, materials used and satisfactory performance shall rest with the tenderer.
17. **Cancellation:** - In case the supply is delayed partly or fully by more than 3 (three) weeks, the purchaser shall have the right to cancel the purchase order without further notice to the supplier and the supplier shall have no claim to compensation in any ground.

18. **Free Replacement:** Free replacement of materials lost/damaged due to transit shall be made immediately on receipt of the intimation from the consignee/Paying Officer without awaiting for settlement of the claim of bidders with Railway/Lorry/Insurance Company.
19. **SUBMISSION OF PROOF REGARDING MANUFACTURER'S CERTIFICATE/ AUTHORISED DEALERSHIP CERTIFICATE, PRICE LIST OF THE MANUFACTURER, PAST EXPERIENCE OF EXECUTION OF ORDER PERFORMANCE CERTIFICATE, TECHNICAL LITERATURE AND DRAWING:**  
Legible Xerox copies of necessary Manufacturer's certificate, valid authorized dealer certificate, Manufacturer's Price list and technical literature etc. should be furnished along with the tender. If required, the firms may be requested to produce such original certificates for verification. Past experience of execution of Purchase Orders needs to be furnished by the bidders. The tender shall be accompanied with dimensional drawing and technical literature, leaflets, manuals if any.
20. **Consignee:** -The Consignee for the materials detail of which shall be confirmed through Purchase Order.
21. **Despatch Instruction:** - The materials shall be dispatched to consignee only with proper packing as per I.S.S. as per despatch instruction mentioned in the purchase order.
22. **Paying Officer:** - Bills in triplicate clearly marked as "**Original**", "**Duplicate**", "**Triplicate**", shall be furnished to the paying officer. The name of the Paying Officer shall be confirmed through Purchase Order.

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## S E C T I O N – I I I

### TECHNICAL SPECIFICATION FOR CLAMPS AND CONNECTORS.

#### **1.0 SCOPE:-**

This Specification covers design, manufacture, testing at manufacturer's Works, supply and delivery of hardware fittings and other accessories suitable for use in diversion work of 132 KV RSP SAIL line. The materials to be supplied shall be **CONFIRMING TO ISS AND IEC**. The firm shall submit the samples and test report of standard laboratory along with the drawing of the materials mentioning the details dimensions of different items as mentioned in schedule of quantity. The hardware and accessories offered, shall be complete with all components, which are necessary or usual for the efficient performance and satisfactory maintenance. Such part shall be deemed to be within the scope of contract. The AGS type clamps shall have inbuilt AGS clamps/PA Rods.

#### **2.0 STANDARDS:-**

The materials covered under this Specification shall comply with the requirement of the latest version of the following standards as amended up to date, except where specified otherwise.

i)	IS:5561 - 1970	Aluminium Clamps and Connectors
ii)	IS:2633	Method of testing of uniformity of coating on zinc coated articles
iii)	IS;2486 Part-II & III	Insulator fitting for overhead power lines with a nominal voltage greater than 1,000 volts
iv)	IS:2121 Part I & II	Conductor accessories for overhead power lines
v)	IS:209	Specification for Zinc.
vi)	BS:916	Specification for Hexagonal bolts and nuts

#### **3.0 MATERIALS AND DESIGN**

Aluminium and aluminum alloys, malleable iron and forged steel, having required mechanical strength, corrosion resistance and machinability depending on the types of application for which accessories / fittings are needed, shall be employed. In manufacturer of the accessories / fittings, the composition of the aluminum alloys used shall be made available to Employer if required for verification.

The materials offered shall be of first class quality, workmanship, well finished and approved design. All castings shall be free from blow-holes, flaws, cracks of other defects and shall be smooth, close grained and true forms and dimensions. All machined surfaces should be free, smooth and well finished.

Metal fittings of specified material for conductor and earth wire accessories and string insulator fittings are required to have excellent mechanical properties such as strength, toughness and high resistance against corrosion. All current carrying parts shall be so designed and manufactured that contact resistance is reduced to the minimum.

resistance against corrosion even in case of high level of atmosphere pollution.

All hooks, eyes, pins, bolts, suspension clamps and other fittings for attaching to the tower or to the line conductor or to the earth wire shall be so designed that the effects of vibration, both on the conductor and the fittings itself, are minimized.

Special attention must be given to ensure smooth finished surface throughout. Adequate bearing area between fittings shall be provided and point or line contacts shall be avoided.

All accessories and hardwares shall be free from cracks, shrinks, slender air holes, burrs or rough edges.

The design of the accessories and hardwares shall be such as to avoid local corona formation or discharge likely to cause interference to tele-transmission signals of any kind.

#### **4.0 GALVANISING:**

All ferrous parts of conductor and ground wire accessories and insulator hardwares shall be galvanized in accordance with IS:2629-Recommended Practice for hot dip galvanizing of iron and steel or any other equivalent authoritative standards. The weight of zinc coating shall be determined as per method stipulated in IS:2633 for testing weights, thickness and uniformity of coating of hot dip galvanized articles or as per any other equivalent authoritative standards. The zinc used or galvanization shall conform to grade Zn 98 of IS: 209. The galvanized parts shall withstand four (4) dips of 1 minute each time while testing uniformity of zinc coating as per IS:2633.

Spring washers shall be electro galvanized.

### **5. CLAMPS CONNECTORS**

#### **5.1 SCOPE:**

This specification covers the design, manufacture, assembly, inspection, testing, packing and delivery of tower accessories, power conductor accessories, earth wire accessories and hardware fittings, suitable for 132 KV line. The material offered shall be complete with all components that are necessary for efficient operation. Such parts shall be deemed to be within scope of the supply whether specifically mentioned or not. Fittings shall conform in all respect to the highest standard of engineering, design, and workmanship and shall be capable of performing trouble free continuous operation.

## **5.2 CLIMATIC CONDITIONS:**

The overall climate is moderate hot, humid, tropical, highly polluted and conducive to rust and fungus growth. The clamps/connector shall be given tropical and fungicidal treatment and shall be capable of satisfactory operation under the hot and humid climatic conditions that would prevail at sites. The climatic conditions are prone to wide range of variation in ambient conditions. The materials offered shall be suitable for installation at any of the switchyards in Odisha.

5.2 All casting shall be free from shrinking, blow holes, surface blisters, cavities, cracks, other defects and quality of product shall be uniform throughout. All sharp edges and corners shall be blurred and rounded off.

5.3 Assembly shall be designed and manufactured in such a way so as to have minimum contact resistance.

5.4 The fittings offered shall be inherently resistive to atmospheric corrosion or be suitable to protect against corrosion both during storage as well as in service.

5.5 The clamps/connector shall not cause any damage to the conductor in any way.

5.6 All bolts, clamps, etc. shall have suitable locking arrangements to safe guard against vibration and loosening.

5.7. No part of a clamp shall be less than 15 mm thick for fittings suitable for ACSR Panther/ Zebra/ Moose conductor.

5.8 All ferrous parts shall be hot dip galvanized conforming to IS:2633.

5.9 For bimetallic connectors, copper alloy liner of minimum thickness of 2 mm shall be cast integral with aluminum body.

5.10 Connectors shall be designed to be corona free in accordance with the requirements stipulated in IS: 5561

5.11 The required bolts and nuts for terminal connector must be hot dip galvanized/stainless steel with suitable check nut.

## **6.1 MATERIAL:**

The clamps and connectors shall be made of materials listed below:

i) For connecting ACSR conductor aluminum alloy casting conforming to designation A6 of IS: 617.

ii) Bolts, nuts, plain washers and spring washers for all items: Hot dip galvanized mild steel/stainless steel.

iii) Split pin shall be made of stainless steel.

6.2 The clamps shall be designed to withstand the flow of continuous current as follows:

ACSR Moose/Zebra/ Panther Conductor- 2000 Amp

The temperature rise when carrying full load current shall not exceed 45°C above site ambient temperature of 40°C. The rated current for which the clamp connectors are designed with respect to the specified ambient temperature shall be marked on each component of clamps and connectors.

## **7.0 Hardware Fittings:**

i) The Single Tension Set consists of the following items:-

a) Anchor Shackle.

b) Ball Eye

c) Tower side arcing horn.

- d) Socket Clevis with R-Type security clip.
- e) Line side arcing horn
- f) Compression type dead end clamp. clip – 2 Nos.
- g) Line side arcing horns.
- h) Compression type dead end clamps.

ii) CLAMP:-

**TENSION CLAMPS**

The Tension Clamps shall be made out of aluminium alloy and of compression type suitable for Zebra conductor for ACSR.

The tension clamps shall not permit slipping or damage to failure of the complete conductor or any part thereof at a load less than 90% of the ultimate strength of conductor. The mechanical efficiency of tension / clamps shall not be affected by method of erection involving come / along or similar clamps or tension stringing operation during or after assembly and erection of tension clamp itself. The tension clamp shall be of a design that will ensure unrestricted flow of current without use of parallel groove clamps. The clamps shall be as light as possible.

iii) ARCING HORNS:-

Each hardware assembly shall have provision for attaching arcing horns of both adjustable and non/adjustable type across the suspension and tension strings or tower side. However each hardware assembly shall be provided with arching horn of fixed type on line side only.

iv) TESTING OF HARDWARE FITTINGS:-

1. On Tension hardware fittings only:-

Electrical resistance test for IS 2486 (Part-I) 1971

Dead end assembly.

(a) Heating cycle test for –do dead end assembly.

(b) Slip strength test for IS 2486 (Part-I) dead end assembly.

(c) Mechanical strength test.

2. On tension hardware fittings only:-

(a) Slip strength test for dead end assembly. IS-2121 (Part-I)

All the acceptance tests stated at clause shall also be carried out on composite insulator unit, except the eccentricity test at clause. In addition to these, all the acceptance tests indicated in IEC 1109 shall also be carried out without any extra cost to the employer.

3. For hardware fittings:-

(a) Visual examination. IS-2121 (Part-I)

(b) Proof & test.

**8.0 DESIGNS:**

Responsibility of satisfactory design of the clamps/connectors to safely withstand the specified mechanical stresses and carry the rated current without exceeding the temperature rise specified, shall solely rest with the bidder. For this purpose, a minimum factor of safety 2 (two) shall be taken into account.

**9.0 INTERCHANGEABILITY:**

All fittings shall be of standard design and made to gauge or jig and shall be interchangeable in all respects with similar items.

**10.0** (a) True copies of all the Type Test Certificates of Govt. recognized Laboratory in respect of the offered items only shall be furnished.

(b) Descriptive literature, dimensional drawings catalogues, etc. shall be submitted for the offered items.

(c) Offers without samples and type tests reports will be out rightly rejected.

**11. GENERAL:**

1. All ferrous parts including fasteners shall be hot dip galvanized, after all machining has been completed. Nuts may however be tapped (threaded) after galvanizing and the threads oiled. Spring washers shall be electro-galvanized. The bolt threads shall be undercut to take care of the increase in diameter due to galvanizing. Galvanizing shall be done in accordance with IS-2629-1985 and shall satisfy the tests mentioned in IS 2633-1986. Fasteners shall withstand four dips while spring washers shall withstand three dips of one-minute duration in the standard Preece test. Other galvanized materials shall be guaranteed to withstand at least six successive dips each lasting one minute under the Standard Preece test for galvanizing.
2. The zinc coating shall be perfectly adherent of uniform thickness, smooth, reasonably bright, continuous and free from imperfections such as flux, ash, rust stains, bulky white deposits and blisters. The zinc used for galvanizing shall be of grade Zn 99.95 as per IS 209-1979.
3. Pin balls shall be checked with the applicable “G)” gauges in at least two directions, one of which shall be across the line of die flashing and the other 90 deg. to this line. ‘NO GO’ gauges shall not pass in any direction.
4. Socket ends, before galvanizing shall be of uniform contour. The bearing surface of socket ends shall be uniform about the entire circumference without depressions or high spots. The internal contours of socket ends shall be concentric with the axis of the fittings as per IS 2486/IEC-120. The axis of the bearing surfaces of socket ends shall be coaxial with the axis of the fittings. There shall be no noticeable tilting of the bearing surfaces with the axis of the fittings.
5. All current carrying parts shall be so designed and manufactured that contact resistance is reduced to minimum.
6. Welding of aluminum shall be by inert gas shielded tungsten arc or inert gas, shielded metal arc process. Welds shall be clean, sound, smooth, and uniform without overlaps, properly fused and completely sealed. There shall be no cracks, voids incomplete penetration, incomplete fusion, under-cutting or inclusions Porosity shall be minimized so that mechanical properties of the aluminum alloys are not affected. All welds shall be properly finished as per good engineering practices.

**Electrical Design:**

The heavy duty suspension, and heavy duty tension insulator sets shall all comply with the technical requirements of schedule C and ISS and IEC and satisfy the test requirements stated in Section-7.



**Mechanical design:**

The mechanical strength of the insulators and insulator fittings shall be as stated in Schedule-C

The design shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to the development of defects.

Insulating material shall not engage directly with hard metal. All fixing materials shall be of approved quality, shall be applied in an approved manner and shall not enter into chemical action with the metal parts or cause fracture by expansion in service. Where cement is used as a fixing medium, cement thickness shall be as small and even as possible and proper care shall be taken to correctly centre and locate the individual parts during cementing. Besides the above the following points should be incorporated.

1. All ferrous parts are to be electro galvanized.
2. Contact surface are to be machine finished.
3. All nuts & bolts should be electro galvanized passivated with zinc chromate solution.

**Note : Besides the above specification, the tenderer are requested to follow the corrected instruction/specification provided with the sample drawing. The IS provided with the drawing should be strictly followed. In case of any deviation of the above specification and the sample drawing, the specification of sample drawing will be prevailed.**

**General Manager, Elec.  
EHT (Constn.) Circle, Sambalpur**

ANNEXURE - I  
GENERAL INFORMATION

The bidder shall furnish general information in the following format.

1. Name of the Firm :

2. Head Office address :

3. Contact persons:

Telephone No.

Office:

Residence:

Fax No.

Telex.

4. Place of incorporation / Regn.

5. Year of incorporation / Regn.

**SIGNATURE OF TENDERER**

**NAME:**

**DESIGNATION (SEAL):**

*ANNEXURE - II*  
**DECLARATION FORM**

SPECIFICATION No. EHT (C)/ T / 01 / 2019-20

To

The General Manager,  
E.H.T. Construction Circle,  
OPTC Ltd., Sambalpur.

Sir,

1. After careful examination of the above specification together with tender conditions referred to therein, I / we undersigned hereby offer to execute the work contract covered therein complete in all respect as per the specification and general conditions, at the rates quoted in attached contract schedule of prices in the tender. Our offer is valid upto 180 days from the date of opening of tender and the prices, which are on firm basis, will remain valid for two years from the date of opening of tender.
2. I / We hereby undertake to have the works completed within the time specified in the tender.
3. I / We certify to have purchased a copy of the specification by remitting cash/ demand draft of Rs 4,480/- (Rupees Four Thousand Four Hundred Eighty) only inclusive of GST @ 12% and this has been acknowledged by you in your receipt No..... Dated .....
4. In the event of work order being decided in my / our favour, I / We agree to furnish the security deposit in the manner acceptable to Orissa Power Transmission Corporation Limited and for the sum as applicable to me / us as provided in the general conditions of contract (Section-II) of this specification within 10 days of issue of Work Order, failing which I / We clearly understand that the said work order will be liable to be withdrawn by OPTCL.
5. I/We certify that we are having valid labour license for engagement of labours for the referred work duly insured to cover all fatal & non-fatal accidental dues or any mishap happening during execution of work.

Signed this ..... day of .....  
2019/20.

Yours faithfully,

Signature with  
designation & Seal of  
Tenderer

**Note:** This form should be duly filled by the tenderer and returned to the General Manager, E.H.T. Construction Circle, OPTC Ltd., Sambalpur along with tender.

## ANNEXURE - III

### ABSTRACT OF TERMS & CONDITIONS

( This proforma should be filled in with all information by the tenderer and should be furnished alongwith the Tender )

1. i) Name & address of the firm

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ii) Earnest Money Furnished

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a) Cash

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b) Bank Guarantee

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c) Bank Draft

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d) Validity(EMD)

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2. Validity: (Tender)

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3. Nature of Price: Firm / Variable

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4. Rate of GST \_\_\_\_\_
5. Rate of other taxes/ levies / duties  
\_\_\_\_\_
6. Terms of Payment : Whether agreeable to OPTCL Yes / No  
terms or not ?
7. Schedule of Completion : Whether agreeable to OPTCL Yes / No  
of work. terms or not ?
8. Guarantee : Whether agreeable to OPTCL Yes / No  
terms or not ?
9. Penalty : Whether agreeable to OPTCL Yes / No  
terms or not ?
10. Whether agreed to Technical Specifications and drawings : Yes / No

**Signature of Tenderer**

**Name :**

**Designation (Seal)**

## ANNEXURE – IV

### EXPERIENCE RECORD

The bidder shall furnish details of Work Order for similar nature of work received during last three years and already completed and under execution.

Sl. No.	Work Order No. & Date	Name & address of the authority placing order.	Value of contract	Scheduled date of completion of work	Lapses if any in executing the Work Order	Remarks
1	2	3	4	5	6	7

**SIGNATURE OF TENDERER:**

**NAME :**

**DESIGNATION ( SEAL ):**

ANNEXURE – V  
LITIGATION HISTORY

**Name of the Applicant**

Bidder should provide information on any history of litigation or arbitration resulting from contracts executed in the last five years or currently under execution.

Year	Award for or against bidder	Name of client, cause of litigation and matter in dispute	Disputed amount (Current value in Rs.)
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**Signature of Tenderer**

**Name :**

**Designation (Seal)**

**ANNEXURE-V1  
PRICE SCHEDULE**

Sl. No.	Description of Materials	Unit	Qty. In Nos.	Unit Rate in Rs. (excluding of GST ___%)	Total In Rs.
	<b>Supply of the following tower accessories as per technical specification and given drawing and as directed by the engineer in charge.</b>				
1	Danger Board	No	7		
2	Number Plate	No	7		
3	Phase Plate	No	42		
4	Anticlimbing Device in total set	No	7		
5	Circuit Plate	No	14		
	<b>Power conductor Accessories for ACSR Zebra</b>				
6	Vibration Damper	No	120		
7	Mid-span Joint	No	6		
8	Repaie Sleeve	No	4		
	<b>Hardware fittings for ACSR Zebra</b>				
9	Single suspension hardware fittings suitable for 120 KN Antifog type insulator for pilot string	No	15		
10	Single tension hardware fittings suitable for 160 KN Antifog type insulator	No	78		
11	Double tension hardware fittings suitable for 160 KN Antifog type insulator	No	78		
12	<b>SUB-TOTAL</b>				
13	<b>GST@___% ON SL. NO-12</b>				
14	<b>TOTAL</b>				
	or say				

SIGNATURE OF TENDERER:  
DESIGNATION ( SEAL ):

NAME :