



ODISHA POWER TRANSMISSION CORPORATION LTD

OFFICE OF THE ENGINEER - IN- CHARGE

BHARATNET PROJECT

JANPATH, BHUBANESWAR - 751022

TENDER SPECIFICATION

NO. EIC. BharatNet –e-Tender- 216 /2023-24

FOR SUPPLY OF 24F/48F/96F JOINT CLOSURE.

(E tendering mode only)

Sl. No.	ITEM DESCRIPTION	UNIT	Total Qty.
1	24F Joint closure (Plastic enclosure Dome Type)	Nos	4200
2	48F Joint Closure (Plastic enclosure Dome Type)	Nos	700
3	96 F Joint Closure (Plastic enclosure Dome Type)	Nos	500

The bidders are requested to quote their rates for all items under the Tender.

Request for online tender documents – From Dt- 26.12.2023 (10.00 AM) to Dt- 22.01.2024 (12.30 PM)

Last date of submission of online tender - Dt- 23.01.2024 (12.30 PM)

Date of opening of Tender - Dt- 24.01.2024 (03.00 PM)

Pre-bid conference - Dt- 05.01.2024 (11 AM)(online)



ODISHA POWER TRANSMISSION CORPORATION LTD.

REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,

ODISHA

EIC. BharatNet –e-Tender-216 / 2023-24

For and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD, Engineer – in-Charge [BharatNet] invites Tenders from reputed manufacturers in two part bidding system for supply of 24F/48F/96F Joint Enclosure. The interested bidders would be required to enrol themselves on the tender portal www.tenderwizard.com/OPTCL. Complete set of bidding documents are available at www.tenderwizard.com/OPTCL from Dt. **26.12.2023** at 10.00 A.M to Dt. **22.01.2024** at 12.30 P.M.. Interested bidder may visit OPTCL's official web site <http://www.optcl.co.in> and www.tenderwizard.com/OPTCL for detail specification.

N.B:-All subsequent addendums / corrigendum to the tender shall be hosted in the www.tenderwizard.com/OPTCL only.

Engineer-in-Charge

BharatNet Phase-II Project

NOTICE INVITING TENDER
ODISHA POWER TRANSMISSION CORPORATION LTD.,
REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,
ODISHA, INDIA.

EIC. BharatNet –e-Tender 216 / 2023-24

For and on behalf of the ODISHA POWER TRANSMISSION CORPORATION LTD., the undersigned invites bids from manufacturers under two-part bidding system in e- tendering mode only as per the following details.

Tender Specification No.	Sl	Item description	Unit	Quantity	EMD in (Rs)	Cost of tender document in (Rs)	Tender Processing Fee (Rs)	Last date of receipt & opening of tender
EIC.BharatNet –e-Tender-216/2023-24	1	24F Joint closure(Plastic enclosure)	Nos	4200	83,767/- (Bid Security Declaration to be furnished in Annexure-I(A)	12,000/- (INR) + GST@ 18%= 14,160/-	5000/- (INR) + GST @ 18%= 5900/-	23.01.2024 (12.30 Hrs) & 24.01.2024 (15.00 Hrs)
	2	48F Joint Closure (Plastic enclosure)	Nos	700				
	3	96 F Joint Closure (Plastic enclosure)	Nos	500				

The bidders can view the tender documents from Tender Portal free of cost.

TENDER COST:

The bidders who want to submit bids shall have to pay non-refundable amount Rs. 14,160/- (Rupees Fourteen Thousand One Hundred Sixty) Only towards the tender cost **online** through e-payment gateway link provided in e-tender portal (by using Net Banking, Debit Card or Credit Card). They have to also submit notarized hard copy of GST registration certificate on or before the date & time of opening of techno-commercial bid (Part-I). The bidders can also submit Tender Cost as per tender notice, The online payment can be made prior to last date & time of submission of online tender.

TENDER PROCESSING FEE:

The bidders shall have to submit non-refundable amount of Rs.5,900/- (Rupees Five thousand nine hundred) only including GST @ 18%) towards the tender processing fee to K.S.E.D.C.Ltd, in e-payment mode. The e-payment of above amount is to be made to enable the bidder to download the bid proposal sheets & bid document in electronic mode.

SUBMISSION OF TENDER COST & TENDER PROCESSING FEE & EMD:

The bidder shall deposit the tender cost, tender processing fee and EMD prior to last date & time of opening of bid(Part-I) as notified in tender notice.

The bidders shall scan and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original as stated above. The bidder(s) shall submit Proof of payment of Tender Cost, Tender Processing fees, EMD and shall upload the same in the prescribed attachment in .gif or .jpg format in addition to submitting the original to the undersigned on or before the scheduled date and time for opening of Technical Bid.

The prospective bidders are advised to register their user ID, Password, company ID from website www.tenderwizard.com/OPTCL by clicking on hyper link "Register Me".

Any clarifications regarding the scope of work and technical features of the tender can be had from the undersigned during office hours.

Minimum qualification criteria of bidders: AS STIPULATED IN SECTION-II, (G.T.C.C) OF THE TENDER SPECIFICATION.

Engineer-in-Charge

BharatNet Phase-II Project

**ODISHA POWER TRANSMISSION CORPORATION LTD.
OFFICE OF THE ENGINEER –IN-CHARGE
BHARATNET PHASE-II PROJECT
JANAPATH, BHUBANESWAR – 751022**

**TENDER SPECIFICATION
NO. EIC.BharatNet –e-Tender-216/2023-24**

CONTAINING

PART – I

- SECTION – I : INSTRUCTION TO TENDERERS**
- SECTION – II : GENERAL TERMS AND CONDITIONS OF
CONTRACT (G.T.C.C.) (COMMERCIAL)**
- SECTION – III : LIST OF ANNEXURES (COMMERCIAL)**
- SECTION – IV : TECHNICAL SPECIFICATION
of 24F/48F/96F Joint Closure for Optic Fiber cable.**

PART – II PRICE BID.

PART – I.
SECTION – I.

INSTRUCTIONS TO TENDERERS

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COMMERCIAL SPECIFICATION.

P A R T - I

S E C T I O N - I

INSTRUCTIONS TO TENDERER

1. Submission of Bids:-

The bidder shall submit the bid in Electronic Mode only i.e www.tenderwizard.com/OPTCL. The bidder must ensure that the bids are received in the specified website of the OPTCL by the date and time indicated in the Tender notice. Bids submitted by telex/telegram will not be accepted. No request from any bidder to the OPTCL to collect the Bids in physical form will be entertained by the OPTCL.

The OPTCL reserves the right to reject any bid, which is not deposited according to the instruction, stipulated above. The participants to the tender should be registered under GST Laws.

1. For all the users it is mandatory to procure the Digital Signatures of Class-III.
2. Contractors / Vendors / Bidders / Suppliers are requested to follow the below steps for Registration:
 - a. Click “Register”, fill the online registration form.
 - b. Pay the amount of Rs. 2360/- through e-payment/DD in favour of K S E D C Ltd Payable at Bangalore.
 - c. Send the acknowledgment copy for verification.
 - d. As soon as the verification is being done the e-tender user id will be enabled.
3. After viewing Tender Notification, if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs.
4. If any Bidder wants to participate in the tender he will have to follow the instructions given below:
 - a. Insert the PKI (which consist of your Digital Signature Certificate) in your System.
(Note: Make sure that necessary software of PKI be installed in your system).
 - b. Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer).
 - c. Go to Start > Programs > Internet Explorer.
 - c. Type www.tenderwizard.com/OPTCL in the address bar, to access the Login Screen.

- d. Enter e-tender User Id and Password, click on “Go”.
 - e. Click on “Click here to login” for selecting the Digital Signature Certificate.
 - f. Select the Certificate and enter DSC Password.
 - g. Re-enter the e-Procurement User Id Password
5. To make a request for Tender Document Bidders will have to follow below mentioned steps.
 - Click “Un Applied” to view / apply for new tenders.
 - Click on Request icon for online request.
 6. After making the request Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps:
 - Click to view the tender documents which are received by the user.
 - Tender document screen appears.
 - Click “Click here to download” to download the documents.
 7. After completing all the formalities Bidders will have to submit the tender and they must take care of following instructions.
 - Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.
 - Note down / take a print of bid control number once it displayed on the screen
 8. Tender Opening event can be viewed online.
 9. Competitors bid sheets are available in the website for all.
 10. **For any e-tendering assistant contact help desk number mentioned below.**
 - Bangalore – 080- 40482000.

The participants to the tender should be registered under GST Laws.

2. **Division of Specification.**

The specification is mainly divided into two parts viz. Part-I & Part-II.

Part-I Consists of

- | | |
|-------------------|---|
| [i] Section-I | Instruction to Tenderers. |
| [ii] Section-II | General Terms & conditions of contract. |
| [iii] Section-III | Schedules and forms etc. |
| [iv] Section-IV | Technical Specification. |
| Vol-I | TS of 24F/48F/96F joint closure. |

Part-II Consists of

Schedule of prices as per Annexure-V

3. Tenders 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).

The Tenderers are required to submit the tenders in two parts Part-I, technical and commercial and Part-II “Price Bid”.

4. Opening of Bids.

- [a] The part-I shall be opened on the date and time fixed by the OPTCL for opening of bids in Electronic mode in presence of such of the Tenderers or their authorized representatives [limited to one person only] on the due date of opening of tender who opt remain present. After scrutiny of the technical particulars and other commercial terms, clarifications, if required, shall be sought for from the bidders. The Tenderers shall be allowed 15 days time for such activity.
- [b] On receipt of technical clarification, the bids shall be reviewed, evaluated and those not in conformity with the technical Specification / qualifying experience, shall be rejected. If any of the technical proposal requires modification to make them comparable, discussion will be held with the participating bidders.

All the responsive bidders shall be given opportunity to submit the revised technical and revised price proposals as a follow up to the clarification (modification if any) on the technical proposals. The qualified bidders shall be given opportunity to submit revised price proposals within 15 days from the date of such discussion or within time frame mutually agreed, whichever is earlier.

- [c] When the revised price proposals are received, the original price proposals will be returned to the bidders unopened along with their original technical proposals. Only the revised technical and price proposals will be considered for bid evaluation. The price bids [Part-II] of such of the Tenderers, whose tenders have been found to be technically and commercially acceptable, including those supplementary revised price bids, submitted subsequently, shall be opened in the presence of the bidder’s representative on a date and time which will be intimated to all technically and commercially acceptable Tenderers.
- [d] The bidders are required to furnish sufficient information to the Purchaser to establish their qualification, capacity to manufacture and/or supply the materials/perform the work. Such information shall include details of bidder’s experience, its financial, managerial and technical capabilities.
- [e] The price bids of the technically and otherwise acceptable bids shall only be evaluated as per the norms applicable in terms of this Specification.

5. Purchaser's Right Regarding Alteration of Quantities Tendered.

The Purchaser may alter the quantities of materials at the time of placing orders. Initially the purchaser may place orders for lesser quantity with full freedom to place extension orders for further quantity under similar terms and conditions of the original orders. Orders may also be split among more than one tenderer for any particular item, if considered necessary in the interest of the Purchaser to get the goods earlier.

6. Procedure and opening time of tenders.

Tenders will be opened in the office of the Chief General Manager [TELECOM] on the specified date and time in presence of the Tenderers or their authorized representatives [limited to one person only] in case of each bidder who may desire to be present, at the time of opening the bids.

7. Bidder's Liberty to deviate from Specification.

The Tenderer may deviate from the specification while quoting, if in his opinion, such deviation is in line with the manufacturer's standard practice and conducive to a better and more economical offer. All such deviations should however be clearly indicated giving full justifications for such deviation. [Read with Clause-9, Section-II of the Specification].

8. Eligibility for submission of bids.

Only those manufacturers who have deposited the cost of tender specification are eligible to participate in the tender. They should submit the money receipt as a proof of such payment. The local Micro and small Enterprises (MSEs) (**In the state of Odisha**) based in Odisha and registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate without payment of the cost of tender specification

9. Purchaser's right to accept/reject bids:

The purchaser reserves the right to reject any or all the tenders without assigning any reasons what so ever if it is in the interest of OPTCL, under the existing circumstances. [Read with clause-10, Section-II of the specification].

10. Mode of submission of Tenders.

[A] Tenders shall be submitted in electronic mode only. (www.tenderwizard.com/OPTCL)

[B] **Telegraphic or FAX tenders** shall not be accepted under any circumstances.

11. Bidders are to furnish bid security declaration as per the prescribed format at Annexure-I.

12. Validity of the Bids: -

The tenders should be kept valid for a period of **180** days from the date of opening of the tender, failing which the tenders will be rejected.

13. PRICE: -

i)Tenderers are requested to quote-‘FIRM’ Price. No deviation from **FIRM PRICE** will be entertained irrespective of deviation clause No.7 of this part of the specification.

14. Revision of tender price by Bidders: -

[a] After opening of tenders and within the validity of period, no reduction or enhancement in price will be entertained. If there is any change in price, the tender shall stand rejected.

[b] After opening of price bid if the validity period is not sufficient to place purchase order, the tenderer may be asked by the purchaser to extend the validity period of the bid under the same terms and condition as per the original tender.

However, the tender are free to change any or all conditions including price except delivery period of their bids at their own risk, if they are asked by the purchaser to extend the validity period of the bid prior to opening of price bid.

15. Tenderers to be fully conversant with the clauses of the

Specification: -

Tenderers are expected to be fully conversant with the meaning of all the clauses of the specification before submitting their tenders. In case of doubt regarding the meaning of any clause, the tenderer may seek clarification in writing from the EIC, Bharatnet OPTCL. This, however, does not entitle the Tenderer to ask for time beyond due date, fixed for receipt of tender.

16. Documents to Accompany Bids.

Tenderers are required to submit tenders in the following manner:

Part-I of the Tender shall Contain the following documents.

[i] Declaration Form. [As per Annexure-I]

[ii] Bid security declaration. [As per Annexure-I].

- [iii] Technical specification and Guaranteed Technical Particulars conforming to the Purchaser's Specification along with drawings, literatures and all other required Annexures, duly filled in.
- [iv] Photostat copies of TSEC certificates of materials offered as stipulated in the Technical Specification.
- [v] Abstract of Terms & conditions in prescribed proforma as per **Annexure-II**.
- [vi] General Terms & Conditions of supply offer as per Section-II of the Specification.
- [vii] List of orders executed for similar materials during the period as against "minimum qualification requirement", indicating the customer's name, Purchase Order No. & Date, date of supply and date of commissioning etc.
- [viii] Data on past experience **as per Clause-7 of Section-II** of the Specification.
- [ix] GST Compliance Rating. The GST Identification Number(GSTIN) under GST Laws and permanent account number [PAN] of the firm under Income tax Act are required.
- [x] Audited Balance sheet & profit loss accounts of the bidder, for past (3) three years.
- [xi] Schedule of quantity and delivery in the prescribed Proforma vide Annexure, as appended.
- [xii] List of Orders in hand to be executed.
- [xiii] Deviation schedule.
- (xiv) Local micro & small enterprisers (MSEs) (**In the state of Odisha**) based in Odisha and registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC have to submit notarized hard copy of valid registration as local MSE (**In the state of Odisha**) as above on or before the date & time of submission of techno-commercial bid and upload the scan/soft copy of the same in e-tender portal.
- [xv] The bidder should not have any pending litigation or arbitration 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.
- [XVI] Tender specific authorization from the manufacturer of the offered equipment as per Annexure-X

17. Documents/Papers to accompany Part-II Bid.

- (a) Part – II of the tender shall consist of the following
 - (i) Schedule of prices in the prescribed proforma

18. Conditional Offer:

Conditional offer shall not be accepted.

19. General: -

- (i) In the event of discrepancy or arithmetical error in the schedule of price, the decision of the purchaser shall be final and binding on the Tenderer.
- (ii) For evaluation, the price mentioned in words shall be taken if there is any difference in figures and words in the price bid.
- (iii) Notice inviting tender shall form part of this specification.
- (iv) The price bids of the technically and otherwise acceptable bids shall only be evaluated.
- (v) It should be distinctly understood that the part-II of the bid shall contain only details/documents relating to price, as outlined in clause-17 mentioned herein above. Inclusion of any of the documents/information etc. shall render the bid liable for rejection.

20.0 Expenses in respect of OPTCL's representative for witnessing the inspection & testing of the offered materials at the inspection and testing site.

The testing and inspection of the materials at manufacturer works are in the scope of work of the Supplier.

OPTCL inspecting officer, on receipt of offer for inspection from the contractor/supplier, proceeds to the manufacturer works to witness the Type/Acceptance/Routine test.

Important:

It is hereby informed to all the bidders that the relevant clauses of the contract specification, pertaining to inspection and testing of equipment/materials, are hereby supplemented with following additional terms and conditions.

The expenses under the following heads, in respect of OPTCL's representative for witnessing the inspection & testing of the offered equipment/materials at the inspection and testing site, shall be borne by the contractor / supplier.

a) Hotel Accommodation:

- I. Single room accommodation in 4 star hotel for the OPTCL inspecting officer of the rank of Assistant General Manager (Grade E-6) and above.
- II. Single room accommodation in 3 star hotel for the OPTCL inspecting officer of the rank below Assistant General Manager (Grade E-6).

N.B.: It is the responsibility of the contractor to arrange the hotel accommodation matching with their inspection and testing schedule, so that the inspecting officer can check-in the hotel one day prior to the date of inspection and check out after the completion of

the inspection, subject to availability of the return travel ticket. In case of extended duration of inspection or non-availability of the return travel ticket, Contractor/supplier/manufacturer shall arrange for the extended stay of the inspecting officer in the Hotel accordingly. In case there is no hotel with prescribed standard in and around the place of inspection, the contractor/supplier/manufacturer shall suggest alternative suitable arrangement at the time of offer for inspection, which is subjected to acceptability of OPTCL inspecting officer.

b) Journey of the inspecting officer:

- (i) To and fro travel expenditure from the Head Quarters of the inspecting officer to the place of inspection/testing shall be borne by the contractor/supplier/manufacturer. Journey from the Head Quarters of the inspecting officer to the nearest Air Port by train (1st/IIInd A.C) & A/C Taxi then by Air to the place of inspection/testing or to the nearest place of inspection/testing and then by Air or train (1st/IIInd A.C) & A/C taxi to the place of inspection/testing shall be arranged by the contractor/supplier/manufacturer.
- (ii) For train journey, inspecting officer of the rank Assistant General Manager and above shall be provided with 1st class AC ticket and inspecting officer below the rank of Assistant General Manager shall be provided with 2nd class AC ticket.
- (iii) The Air-ticket / train-ticket booking/cancellation is the responsibility of the contractor / supplier.
- (iv) Moreover, if during the journey there is an unavoidable necessity for intermediate travel by road/ waterway/sea-route, the contractor/supplier shall provide suitable conveyance to the inspecting officer for travel this stretch of journey or bear the cost towards this. Any such possibilities shall be duly intimated to OPTCL at the time of their offer for inspection.

c) Local Conveyance:

At the place of the inspection/testing, for local journey of the inspecting officer between Hotel and inspection/testing site and or any other places, Air-conditioned four wheeler vehicle in good condition shall be provided by the contractor/supplier/manufacturer.

d) Following points are also to be considered:

- (i) All the above expenses shall be deemed to be included in the bidder's quoted price for that supply item. Bidder shall not be eligible to raise any extra claim in this regard.

- (ii) Manufacturer may assume that only in 40% of the inspection and testing offer cases, OPTCL inspecting officer, not below the rank of Assistant General Manager will witness the inspection and testing.
- (iii) In case of inspection and testing of materials, OPTCL may depute more than one inspecting officer.
- (iv) Manufacturer shall judiciously plan the inspection/testing schedule and place of inspection/testing, so that optimum number of inspection/testing and minimum time shall be required to cover all the materials of the relevant contract package.
- (v) It shall be the responsibility of the manufacturer to organize the above tour related matters of OPTCL inspecting officer including the matters related to overseas inspection/testing, if any.

21. Litigation/Arbitration

(i)- Bidder has to furnish detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.

(ii) The bidder should not have any pending litigation or arbitration 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 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 liable for outright rejection/cancellation at any stage if any information contrary to the affidavit/declaration is detected.

22. Pre-bid conference : A pre-bid meeting shall be held on the scheduled date & time at the conference hall of the office of the Engineer-in-Charge, BharatNet Phase – II,Project. OPTCL. Interested bidders may raise written queries **three days (03)** prior to the pre bid conference, if any, pertaining to this tender package, which shall be clarified during the pre-bid conference and to be uploaded in OPTCL website. **Queries after the dead line as indicated above shall not be entertained.**

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SECTION – II.

GENERAL TERMS AND CONDITIONS OF CONTRACT [G.T.C.C.]

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PART-I
SECTION-II

GENERAL TERMS AND CONDITIONS OF CONTRACT [G.T.C.C.]

1. **Scope of the contract:**

1.1 The scope of the contract shall be the design, manufacture, assembly, inspection and testing at the manufacture's work, packing and delivery F.O.R. (destination) of the materials specified for the respective stations.

1.5 **The manufacturer/Supplier has to dispatch the materials to the designated site. The site wise quantity of materials to be dispatched shall be intimated to the manufacturer/supplier during issue of DI (Dispatch instruction).**

Definition of terms:

For the purpose of this specification and General Terms and Conditions of contract [GTCC], the following words shall have the meanings hereby indicated, except where otherwise described or defined.

- 2.1 "The Purchaser" shall mean the Engineer-in-Charge [BharatNet] for and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD., Bhubaneswar.
- 2.1.1 "The Engineer" shall mean the Engineer appointed by the Purchaser for the purpose of this contract.
- 2.2 "Purchaser's Representative" shall mean any person or persons or consulting firm appointed and remunerated by the Purchaser to supervise, inspect, test and examine materials to be supplied.
- 2.4 "The supplier" shall mean the bidder whose bid has been accepted by the purchaser and shall include the bidder's executives, administrators, successors and permitted assignees.
- 2.5 "Contract Price" shall mean the sum named in or calculated the bid.
- 2.6 "General Condition" shall mean these General Terms and Conditions of Contract.
- 2.7 "The Specification" shall mean both the technical as well as commercial parts of the specification annexed to or issued with GTCC and shall include the schedules and drawings, attached thereto as well as all samples and pattern, if any.
- 2.8 "Month" shall mean "Calendar month".
- 2.9 "Writing" shall include any manuscript, type written, printed or other statement reproduction in any visible form and whether under seal or under hand.

2.10 Basic Price (Taxable value for Goods) at the point of destination” shall mean the price quoted by the bidder for material at the consignee’s store/site. The cost is inclusive of packing, forwarding, freight, insurance and all expenses and taxes & duties at the end of the supplier excluding Goods & Service Tax. The Goods & Service Tax shall be shown in a separate column item wise alongside the Basic Price quoted at the applicable rate in the Tax Invoice. The applicable rate of GST shall refer to the HSN code of the material supplied. The Basic Price and GST thereon shall be the “FOR Destination Price” as quoted by the bidder.

2.11 The term “Contract document” shall mean and include GTCC, specifications, schedules, drawings, form of tender, Notice Inviting Tender, covering letter, schedule of prices or the final General Conditions, any special conditions, applicable to the particular contract.

2.12 Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act, failing that in the Odisha General Clauses Act.

3. **Manner of execution:**

All the materials supplied under the contract shall be manufactured in the manner, set out in the specification or where not set out, to the reasonable satisfaction of the Purchaser’s representative.

4. **Inspection and Testing:**

[i] The purchaser’s representative shall be entitled at all reasonable times during manufacture to inspect, examine and test at the supplier’s premises, the materials and workmanship of all equipment/materials to be supplied under this contract and if part of the said equipment/material is being manufactured in other premises, the supplier shall obtain for the purchaser’s representative permission to inspect, examine and test as if the equipment/material were being manufactured in the contractor’s premises. Such inspection, examination and testing shall not relieve the supplier from his obligations under the contract.

[ii] The Supplier shall give to the purchaser adequate time/notice (at least clear 15 days for inside the state suppliers and 20 days for outside the state suppliers) in writing for inspection of materials indicating the place at which the equipment/material is ready for testing and inspection and shall also furnish the shop Routine Test Certificate, Calibration certificates of Testing instruments, calibrated in Govt. approved laboratory with authenticity letter of that laboratory along with the offer for

inspection. A packing list along with the offer, indicating the quantity which can be delivered in full truck load/Mini truck load to facilitate issue of dispatch instruction shall also be furnished.

- [iii] Where the contract provides for test at the Premises of the supplier or any of his sub-vendors, the supplier shall provide such assistance, labor, materials, electricity, fuel and instruments, as may be required or as may be reasonably demanded by the Purchaser's representative to carry out such tests efficiently. The supplier is required to produce shop routine test Certificate, calibration certificates of Testing Instruments before offering their materials/equipment for inspection & testing. The test house/laboratory where tests are to be carried out must be approved by the Govt. A letter pertaining to Govt. approved laboratory must be furnished to the purchaser along with the offer for inspection.
- [iv] After completion of the tests, the Purchaser's representative shall forward the test results to the Purchaser. If the test results conform to the specific standard and specification, the Purchaser shall approve the test results and communicate the same to the supplier in writing. The supplier shall provide at least five copies of the test certificates to the Purchaser.
- [v] The Purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is dispute regarding the quality of supply.
- [vi] If the firm fails to present the offered items for inspection/testing as per their inspection call due to any reason(s) during the visit of inspecting officer at the testing site ,the firm shall have to bear all expenses towards repetition of inspection and testing of the total offered quantity or part thereof.

5. **Rejection of Materials.**

In the event any of the 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 manufacturer on receipt of such notification shall either rectify or replace the defective 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 materials and recover the extra costs so involved from the manufacturer 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 materials at reduced price, considered equitable under the circumstances.

6. Experience of Bidders:

The bidders should furnish information regarding experience particularly on the following points:

- [i] Name of the manufacturer/ Supplier
- [ii] Standing of the firm and experience in manufacture of material quoted:
- [iii] Description of material similar to that quoted, supplied and installed during the last two years with the name(s) of the Organizations to whom supplies were made wherein, at least one (1) certificate shall be from a state/central P.S.U.
- [iv] Details as to where installed etc.
- [v] Testing facilities at manufacturer's works.
- [vi] If the manufacturer is having collaboration with another firm [s], details regarding the same.
- [vii] A list of purchase orders of identical material offered as per technical specification executed during the last two years along with users certificate. User's certificate shall be legible and must indicate, user's name, address, designation, place of use, and satisfactory performance of the equipment/materials for at least two years from the date of commissioning. Wherein at least one (1) certificate shall be from a State/Central or P.S.U. Bids will not be considered if the past manufacturing experience is found to be un-satisfactory or is of less than 2 (two) years on the date of opening of the bid and bids not accompanying user's certificate will be rejected..

8. Language and measures:

All documents pertaining to the contract including specifications, schedule, notices, correspondence, operating and maintenance instructions, drawings or any other writing shall be written in English language. The metric system of measurement shall be used exclusively in this contract.

9. **Deviation from specification:**

It is in the interest of the tenderers to study the specification, specified in the tender schedule thoroughly before tendering so that, if any deviations are made by the Tenderers,(both commercial and Technical), the same are prominently brought out on a separate sheet under heading “Deviations Commercial” and “Deviations Technical”.

A list of deviations shall be enclosed with the tender. Unless deviations in scope, technical and commercial stipulations are specifically mentioned in the list of deviations, it shall be presumed that the tenderer has accepted all the conditions, stipulated in the tender specification, notwithstanding any exemptions mentioned therein.

10. **Right to reject/accept any tender:**

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].

11. **Supplier to inform himself fully:**

The supplier shall examine the instructions to tenderers, general conditions of contract, specification and the schedules of quantity and delivery to satisfy himself as to all terms and conditions and circumstances affecting the contract price. He shall quote price [s] according to his own views on these matters and understand that no additional allowances except as otherwise provided there in will be admissible. The purchaser shall not be responsible for any misunderstanding or incorrect information, obtained by the supplier other than the information given to the supplier in writing by the purchaser.

12. **Patent rights Etc.**

The manufacturer shall indemnify the Purchaser against all claims, actions, suits and proceedings for the infringement of any patent design or copy right protected either in the country of origin or in India by the use of any equipment supplied by the manufacturer. Such indemnity shall also cover any use of the equipment, other than for the purpose indicated by or reasonably to be inferred from the specification.

13. **Delivery:-**

- [a] Time being the essence of the contract; the material shall be supplied within the delivery period, specified in the contract. The Purchaser, however, reserves the right to reschedule the delivery and change the destination if required. The delivery period shall be reckoned from the date of placing the Letter of Intent/Purchase order, as may be specified in LOI/Purchase order.
- [b] The desired delivery period shall be as indicated at Appendix-II (Quantity & Delivery Schedule) of Section-IV (Technical Specification).

14. **Dispatch instructions.**

- I] The materials should be securely packed and dispatched directly to the specified site at the supplier's risk by Road Transport only.

II] **Loading & unloading of Ordered Materials.**

It will be the sole responsibility of the supplier for loading and unloading of materials both at the factory site and at the destination site/store.
The Purchaser shall have no responsibility on this account.

15. **Supplier's Default Liability.**

- [i] The Purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed hereunder.
 - [a] If in the judgment of the Purchaser, the supplier fails to make delivery of equipment/material within the time specified in the contract or within the period for which if extension has been granted by the Purchaser in writing in response to written request of the supplier.
 - [b] If in the judgment of the Purchaser, the supplier fails to comply with any of the provisions of this contract.
- [ii] In the event, Purchaser terminates the contract in whole or in part as provided in Clause-15 (I) of this section, the Purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate in relation to the equipment/material similar to that terminated and the supplier will be liable to the Purchaser for any additional costs for such similar equipment/material and/or for penalty for delay as defined in clause-22 of this section until such reasonable time as may be required for the final supply of equipment.

[iii] In the event the Purchaser does not terminate the contract as provided in clause 15(I) of this Section, supplier shall be liable to the Purchaser for penalty for delay as set out in Clause-22 of this section until the equipment is accepted. This shall be based only on written request of the supplier and written willingness of the Purchaser.

16 **Force Majeure:**

The manufacturer shall not be liable for any penalty for delay or for failure to perform the contract for reasons of force majeure such as acts of god, acts of the public enemy, acts of Govt., Fires, floods, epidemics, Quarantine restrictions, strikes, Freight Embargo and provided that the supplier shall within Ten (10) days from the beginning of delay on such account notifies the purchaser in writing of the cause of delay. The purchaser shall verify the facts and grant such extension, if facts justify.

17. **Extension of time:-**

If the delivery of material is delayed due to reasons beyond the control of the supplier, the supplier shall without delay give notice to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice may or may not agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

18. **Guarantee period:**

[i] The stores covered by this specification should be guaranteed for satisfactory operation and against defects in design, materials and workmanship for a period of at least 12 [twelve] months from the date of delivery at site. 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 failing which provision of clause 22 (ii) shall apply.

[ii] Equipment/material failed or found defective during the guarantee period shall have to be guaranteed after repair/replacement for a further period of 36 months from the date of commissioning after such repair/replacement. The Bank Guarantee is to be extended accordingly. Date of delivery as used in this clause shall mean the date on which the materials are received in OPTCL'S stores/site in full & good condition which are released for dispatch by the purchaser after due inspection.

19. **B.G. towards security deposit, 100% payment and performance guarantee:**

[i] For manufacturers situated Inside & out side the state of Odisha.

A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for 10% (Ten percent)of the Total Landing cost (Taxable Value plus GST thereon) of the purchase order(In case of successful bidder who is a local Micro and

small Enterprise(MSEs) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC 3%(Three percent), shall be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of Chief General Manager [Telecommunication] OPTCL within 15 days from the date of issue of the purchase order,. The BG shall be executed on non judicial stamp paper worth of Rs.29.00 [Rupees twenty nine] only or as per the prevalent rules, valid for a period of 14 months from the last date of stipulated delivery period, for scrutiny and acceptance, failing which the supply order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

[ii] No interest is payable on any kind of Bank Guarantee.

[iii] In case of non-fulfilment of contractual obligation, as required in the detailed purchase order/Specification, the composite Bank guarantee shall be forfeited.

20. Import License

In case imported materials are offered, no assistance will be given for release of Foreign Exchange. The firm should arrange to import materials from their own quota. Equipment of indigenous origin will be preferred.

21. Terms of Payment.

i) 90% 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 stores/desired site and verification thereof, subject to furnishing and approval of

(a) Contract cum Performance Bank Guarantee at the rate of 3%(Three percent) of Taxable Value plus GST thereon.

(b) Guarantee certificate, Test certificate by the Purchaser.

ii) TDS under GST Laws for intra state transactions shall be deducted as applicable.

iii) Any imposition of new tax or revision of tax shall be paid/reimbursed at the time of dispatch, scheduled or actual whichever is lower (i.e. If delivery is within schedule period, tax variation as applicable shall be paid, and if delivery is made beyond schedule date, any additional financial implication due to statutory variation in tax shall be to bidder's account)

Balance 10% of the taxable value of the equipment, shall be paid after completion of the guarantee period.

22. Price Reduction Schedule:

Price Reduction Schedule for Delay in Completion of Supply under Purchase Order/Contract

(i) If the Supplier fails to deliver the materials within the delivery schedule, specified in the Purchase Order/Contract including delivery time extension, if any, granted with waiver of Price Reduction Schedule, the Purchaser shall recover from the Supplier, Price Reduction Schedule for a sum of half per cent (0.5 per cent) of the Taxable Value of the un-delivered equipment /materials/uncompleted portion for each calendar week of delay or part thereof. For this purpose, the date of receipted challan shall be reckoned as the date of delivery. The total amount of Price Reduction Schedule shall not exceed five per cent (5%) of the Taxable Value of the un-delivered equipment/materials/erection. Equipment will be deemed to have been delivered only when all its components, accessories and spares as per technical Specification are also delivered. If certain components, accessories and spares are not delivered in time, the equipment/materials will be considered delayed until such time as the missing components, accessories and spares are delivered.

(ii) During the guarantee period, if the Supplier fails to rectify/replace the material within 30 days from the date of intimation of defect by the purchaser, then the Price Reduction Schedule at the rate of half percent (0.5%) of the Total Taxable Value for each calendar week of delay or part thereof shall be recovered by the purchaser. For this purpose, Price Reduction Schedule shall be reckoned from the 30th day from the date of issue of letter on defectiveness of equipment/material/installation. The total amount of Price Reduction Schedule in this case shall not exceed 10% (TEN PERCENT) of the Purchase Order/Contract amount except GST (i.e.Total Taxable Value). If the defects, so intimated are not rectified or equipment/materials not replaced by the supplier within the guarantee period, then whole of the C.P.B.G. will be forfeited by the purchaser, without any intimation to the supplier.

23. Insurance

The Supplier shall undertake insurance of stores covered by this Specification unless otherwise stated. The responsibility of delivery of the stores at destination in good condition rests with the Supplier. Any claim with the Insurance Company or transport agency arising due to loss or damage in transit has to be settled by the supplier. The Supplier shall undertake free replacement of materials damaged or lost, which will be reported by the consignee within 30 days of receipt of the materials at destination without awaiting for the settlement of their claims with the carriers and underwriters.

24. Payment Due from the manufacturer. All costs and damages, for which the supplier is liable to the purchaser, will be deducted by the purchaser from any money, due to the manufacturer, under any of the contract (s), executed with OPTCL.

25. Rating under Goods and Services Tax and Balance sheet and profit & Loss Account:

The following documents are to be submitted at the time of Tender Submission:

- i. Compliance rating under Goods and Services Tax for immediate preceding financial year.
- ii. Audited Balance Sheet and Profit & Loss Account of the bidder for the previous three years to assess the financial soundness of the bidder(s).
- iii. GST registration certificate and PAN Card Copy.
- iv. Tax holiday/exemption certificate under GST or any other Act.
- v. TDS exemption certificate under the Income Tax Act or any other act.

26. Certificate of Exemption from Goods and Services Tax.

Offers with exemption from Goods and Services Tax shall be accompanied with authenticated attested Photostat copy of exemption certificate. Any claim towards Goods and Services Tax shall be paid on actual basis subject to payment of GST by the supplier. In case Outward supply details of the supplier of Goods in GSTR-1 do not match with GSTR -2 of OPTCL on GSTN portal, the same will be adjusted through debit/credit advice issued by OPTCL under intimation to the supplier after allowing cooling period of 3 months after the date of supply.

27. Supplier's Responsibility.

Notwithstanding anything mentioned in the Specification or subsequent approval or acceptance by the Purchaser, the ultimate responsibility for design, manufacture, materials used and satisfactory performance shall rest with the Tenderers. The Supplier(s) shall be responsible for any discrepancy noticed in the documents, submitted by them along with the bid(s)

28. Validity.

Prices and conditions contained in the offer should be kept valid for a minimum period of **180** days from the date of opening of the tender, failing which the tender shall be rejected.

29. EVALUATION.

(i) Evaluation of bids will be on the basis of the FOR DESTINATION PRICE (By Road Transport) including Goods and Services Tax & other levies as may be applicable. The FORD PRICE shall consist of the following components

- a) Taxable value of materials
- b) Goods and Services Tax
- c) Other levies.

- d) Any other items, as deemed proper for evaluation by the purchaser.
- e) Loading factors will be taken in to account during evaluation if the prices of some of the items, not quoted.
- f) Any imposition of new tax or revision of tax shall be considered at the time of price bid evaluation.

(II) e-Reverse Auction is hereby incorporated in the referred tender as follows.

STRATEGY FOR E-REVERSE AUCTION	
1	Bidders are required to go through the guide lines given below and submit their acceptance to the same.
2	e-Reverse Auction (RA) will be conducted in e-tender portal of OPTCL on specified date and time, while bidders shall quote from their own offices/places of their choice. Internet connectivity shall be ensured by the respective agencies/bidders themselves.
3	Demonstration/ training (if not trained earlier) of bidder's nominated person(s), shall be done to explain all the rules related to e-Reverse Auction/ Business Rule document to be adopted.
4	The strategy to be used for reverse auction shall be "DYNAMIC TEMPLATE BIDDING"
Procedure for electronic Reverse Auctioning (e-RA):	
5	<p>a. The e-RA shall be conducted on www.tenderwizard/OPTCL.com only.</p> <p>b. Bidder has to submit letter towards agreement to the Process related Terms & Conditions for e-Reverse Auction, as per (Reverse Auction Process Compliance Form at Annexure-IB). In non-receipt of the same, vendors will not be allowed to participate in e-RA.</p> <p>c. e-RA shall be carried out after opening of Price bids and completion of Price bid evaluation, which will be intimated only to the techno-commercially qualified bidders by OPTCL as per procedure given below.</p> <p>d. OPTCL reserves the right to conduct e-RA and it is obligatory on part of bidder(s) invited to participate in e-RA process once they have responded to the techno-commercial bid.</p>
6	<p>Prior intimation/ Notice for RA invitation will be given to techno-commercially qualified bidders regarding the date & time of opening of the e-RA.</p> <p>The start bid price (SBP) for e-Reverse Auction of each bidder under a particular package shall be the L1 evaluated price for the subject package including Taxes & Duties for the total scope for subject Package. Taking the above discovered L1 price as the upper limit e-RA will be conducted to determine the lowest possible price.</p> <p>Reverse Auction will be conducted amongst first 50% of the technically qualified bidders arranged in order of prices from lowest to highest, as L1, L2,L3----- Ln, and L1 price will be discovered. Minimum of 3 bidders shall be eligible for e RA. (eg. If 4 bidders are financially evaluated then the L1, L2 and L3 bidders shall be eligible for e-RA). Number of bidders eligible for participating in RA</p>

	<p>would be rounded off to next higher integer value if number of technically qualified bidders is odd (e.g. if 7 bids are technically qualified, then RA will be conducted amongst L1 to L4).</p> <p>However, in case only two bidders are found to be responsive, e-RA would be carried out with both the parties without any elimination. However, OPTCL reserves the right to invite the evaluated L1 bidder for negotiation without conducting the e-RA.</p> <p>In case of price submitted by any bidder is found to be abnormal, OPTCL reserves the right to reject the bid of the bidder(s) .</p> <p>Rank of bidders would be displayed as per the total cost to OPTCL, i.e including Taxes and Duties payable by OPTCL as per the provisions of the bidding document & after e-RA process is over.</p>
7	<p>Names of bidders/ vendors shall not be disclosed during the e-RA process. Names of bidders/ vendors shall be anonymously masked in the e-RA process.</p> <p>(i) In case of RA, start/ reference price and step value of decrement shall be indicated to the bidders at the start of the auction. Any participating bidder can bid one or multiple step decrement lower than the prevailing lowest bid at that time. The Bidder shall be able to view Bid Start Price, Bid Decrement Value, Prevailing Lowest Bid value, last Bid Placed by him and time left for bidding.</p> <p>(ii) The step value of decrement in a package to be offered by bidder (the minimum amount of reduction in the total bid price including all taxes & duties during auction) , shall be kept at 0.15% of L1 bidder's final evaluated price (or) at approved amount as decided by OPTCL.</p> <p>(iii) Bidders can only quote any value lower than their previous quoted price. However, at no stage, increase in Price will be permissible.</p> <p>(iv) At any point during Reverse Auction, bidding Price field shall remain enabled for the bidders. The reverse auction period shall be unlimited and the initial auction period (1st slot) will be of thirty (30) minutes with provision of auto extension by (10) ten minutes from the schedule/ extended closing time. If any fresh lower bid is received in last ten minutes of initial auction period or extended auction period, the auction shall get extended automatically for another 10 minutes. In case, there is no bid received during schedule/extended slot, the auction shall get closed automatically without further extension.</p> <p>(v) However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the period of e-reverse auction to avoid complication related with internet connectivity, network problem, system crash down, power failure etc.</p>
8	<p>After conclusion of e-Reverse Auction i.e (Closing Price in Reverse Auction will be taken as offered price by the L1 bidder), decrease in price of individual head of the template shall be considered proportionately on all individual line items of the respective head of the price schedule of the successful L1 bidder .</p>

	<p>Any bid received at the tender wizard server end subsequent to closure of the e-RA shall be summarily rejected and shall not be considered as a valid bid under whatsoever circumstances. For this purpose, tender wizard server log shall prevail.</p> <p>The bidder shall not involve himself or any of his representatives in price manipulation of any kind directly or indirectly by communicating with other bidders.</p> <p>During Reverse Auction, If no bid is received within the specified time, OPTCL, at its discretion, may decide to close the reverse auction process/ proceed with conventional mode of tendering [Evaluation of Part-II (price bid) submitted by bidders earlier].</p>
9	<p>Consequent upon completion of e-Reverse Auction, OPTCL's decision on award of contract shall be final and binding on the bidders.</p> <p>OPTCL shall be at liberty to call the L1 bidder for further process/ negotiation and also at liberty to cancel the e-reverse auction process/ re-tender at any time, without assigning any reason thereof. OPTCL can decide to reschedule or cancel any reverse auction: the bidders shall be informed accordingly.</p> <p>OPTCL/ Service Provider shall not have any liability to bidders for any interruption or delay in access to the e-Tender site/ Reverse Auction link irrespective of the cause.</p>

(III) Weightage shall be given to the Following factors in the Evaluation & Comparison of Bids.

In comparing bids and in making awards, the Purchaser will consider other factors such as compliance with Specification, minimum qualification criteria as per clause-30, outright rejection of tenders clause-34 of this tender, relative quality, adaptability of Supplies or services, experience, financial soundness, record of integrity in dealings, performance of materials/equipment earlier supplied, ability to furnish repairs and maintenance services, the time of delivery, capability to perform including available facilities such as adequate shops, plants, equipment and technical organization.

- (IV) The local MSE (In the state of Odisha) bidders, based in Odisha, shall be required to furnish their willingness to match their bid price with that of the lowest evaluated bidder without any price preference and in case they agree, they shall be eligible to get up to **30%** of the tendered quantity to be distributed suitably among the willing MSE bidders failing which the said **30%** of the tendered quantity be awarded to the lowest evaluated bidder.

30. Minimum Qualification Criteria of Bidders.

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

- i) The bidder should have manufacturing experience of tendered quantity for a minimum period of 2 (two) years and the materials should have been manufactured in India at least since last 2(two) years as on the original date of opening of the techno-commercial bid”.
- ii) At least 50% of the tendered quantity should have been supplied within last 5 (Five) years as on the original date of opening of the techno-commercial bid.
- iii) The above materials should have at least 2 (two) years successful performance from the date of commissioning as on the original date of opening of the techno-commercial bid. At least one of the performance certificates shall be submitted from Govt. of India/State Govt.(s) or their undertakings.
- iv) **The equipment should have been type tested in a Government approved laboratory within five years from the original date of opening of the techno-commercial bid.**
- (v) Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per the requirement of Govt. of India.
- (vi) The bidder should submit self certification under preference to make in India order in line with Govt. public procurement order no. P-45021/2/2017-PP (BE-II) dated 04.06.2020 and its amendments.
- (vii) “Bidder” (including the term ‘tenderer’, ‘consultant’ or ‘service provider’ in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency branch or office controlled by such person, participating in a procurement process.
- (viii)“Bidder from a country which shares a land border with India” for the purpose of this Order means :-
 - a. An entity incorporated, established or registered in such a country ; or
 - b. A subsidiary of an entity incorporated, established or registered in such a country ‘ or
 - c. An entity substantially controlled through entities incorporated , established or registered in such a country ; or
 - d. An entity whose beneficial owner is situated in such a country ; or
 - e. An Indian (or other) agent of such an entity ; or
 - f. A natural person who is a citizen of such a country ; or

g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

(ix) The beneficial owner for the purpose of (iii)(d) above will be as under :

In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

(x) An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

[A] Certificate (to be furnished in bidder's letter head)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evident of valid registration by the Competent Authority shall be attached.]

31. Jurisdiction of the High Court of Odisha.

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 Odisha extends.

32. Correspondences.

i) Any notice to the supplier under the terms of the contract shall be served by Registered Post or by hand at the Supplier's Principal Place of Business.

ii) Any notice to the Purchaser shall be served at the Purchaser's Principal Office in the same manner.

33. Official Address of the Parties to the Contract

The address of the parties to the contract shall be specified:-

[i] **Purchaser:** Engineer-in-Charge BharatNet Phase II Project, OPTCL
Janpath, Bhubaneswar-751022 (Odisha)

Email id: eic.bharatnet_ph2@optcl.co.in

Cell No. 9438907477

[ii] **Supplier:** Address

Cell No.

Fax No.

34. Outright Rejection of Tenders

Tenders shall be outrightly rejected if the followings are not complied with.

- [i] The tenderer shall submit the bid in electronic mode only and shall submit the tender cost on or before the date and time of submission of technical bid. In case of local Micro and small Enterprises(MSEs) **(In the state of Odisha)**, based in Odisha & registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC participating in the tender they have to submit notarized hard copy of valid registration as local MSE as above on or before the date and time of submission of technical bid.
- [ii] The tenderer shall submit the bid in electronic mode only
- [iii] The Tender shall not be submitted telegraphically or by FAX.
- [iv] The Tender shall be kept valid for a minimum period of 180 days from the date of opening of tender.
- [v] The Tender shall be submitted in two parts as specified.
- [vi] The Tenders shall be accompanied by a list of major supplies made prior to the date of opening of tender. Data of at least 2 (two) years shall be furnished.
- [vii] The tenderer shall upload the scanned copy of latest type test certificates (for the tests, carried out on the tendered equipment, being offered). Such type tests should have been conducted within last five years from the date of opening of this tender in a Government approved laboratory in presence of any Government Organization's representative(s).
- [viii] 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. Vide Clause-4(ii) of Part-II.
- [ix] 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.
- (x) The tenderer shall upload the scanned copy legibly written user's certificate to prove the satisfactory operation of the offered equipment /materials for a minimum period of 2 years from the date of commissioning/use as per the tender specification. User's certificate shall include the detailed address of the user with 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.
- (xi) Guaranteed Technical particulars & Abstract of terms and Conditions should be filled in completely.

- (xi) (a) Detailed information on any litigation or arbitration arising out of contract completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.
- (xi) (b) The bidder should not have any pending litigation or arbitration with OPTCL with regard to any project or related activity. The bidder should certify / declare the same in the unequivocal terms by way of an affidavit duly sworn before a magistrate. 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.

35. **Documents to be treated as confidential.**

The supplier shall treat the details of the specification and other tender documents as private and confidential and these shall not be reproduced without written authorization from the Purchaser.

36. **Scheme/Projects**

The materials covered in this specification shall come under “Govt. of India funded Project “

SECTION – III.

LIST OF ANNEXURES

[I TO XIV]

[PAGE 36 TO 54]

SECTION – III
[LIST OF ANNEXURES]

The following schedules and proforma are annexed to this specification and contained in Section-III as referred to in the relevant clauses.

1.	Declaration form	ANNEXURE-I(A)
2.	Reverse Auction Process Compliance Form	ANNEXURE-I(B)
3.	Abstract of terms and conditions to accompany Section-II of Part-I	ANNEXURE-II
4.	Schedule of Quantity and Delivery	ANNEXURE-III
5.	Abstract of price component [to accompany Part-II of this specification]	ANNEXURE-IV
6.	Schedule of prices to accompany Part-II	ANNEXURE-V
7.	Composite Bank Guarantee form for security deposit, payment and performance	ANNEXURE-VII
8.	Data on Experience.	ANNEXURE – IX
9.	Schedule of deviations (Technical)	ANNEXURE-X (A)
10.	Schedule of deviations (Commercial)	ANNEXURE-X (B)
11.	Litigation /Arbitration	ANNEXURE-XI
12.	Format for extension of Bank guarantee	ANNEXURE-XII
13.	Tender specific authorization from the manufacturer of the offered equipment.	ANNEXURE-XIII
14.	DPIT	ANNEXURE-XIV

ANNEXURE – I(A)

DECLARATION FORM

To

The Engineer-in-Charge, BharatNet Phase-II Project
OPTCL Head Qrs.BBSR,751022

Sub:- Tender Specification No-_____

Sir,

1. Having examined the above specification together with terms & conditions referred to therein * I/We the undersigned hereby offer to supply the materials covered therein complete in all respects as per the specification and General conditions, at the rates, entered in the attached contract schedule of prices in the Tender.
2. * I/We hereby undertake to have the materials delivered within the time specified in the Tender.
3. * I/We hereby guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. * I/We certify to have submitted the bid electronically by remitting *cash/money order/D.D./ remitting the cost of tender, herewith and this has been acknowledged by your letter/ money receipt No. _____ Dated, _____
5. In the event of Tender, being decided in *my/our favour, * I/We agree to furnish the Composite B.G. in the manner, acceptable to ORISSA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to *me/us as per clause-19 of section-II of this specification within 15 days of issue of letter of intent/purchase order failing which *I/We clearly understand that the said letter of Intent/Purchase order will be liable to be withdrawn by the purchaser.

Bid Security Declaration

*I/We further declare that, we will not modify/withdraw the bid after opening of techno-commercial bid(i.e. part-I bid) during its validity period and in such an event we agree that OPTCL would be free to debar us from participating in the tenders floated by OPTCL for a period of three years .

Signed this _____ day of _____ 2023

Yours faithfully

Signature of the Bidder with seal of the company

[This form should be dully filled up by the Bidder and uploaded at the time of submission of tender.]

* (Strikeout whichever is not applicable)

(Annexure-I B)

(Reverse Auction Process Compliance Form)

(To be submitted on letter head of the bidding company with sign and stamp and along with Technical bid)

To,

EIC, BharatNet Project OPTCL, Bhubaneswar-751010, Odisha

Sub: Agreement to the Process related Terms & Conditions for e-Reverse Auction.

Dear Sir,

This letter is to confirm that:

- The undersigned is authorized representative of the company.
- We have studied the Commercial Terms and the Business rules governing the Reverse Auction as mentioned in your tender and confirm our agreement to that.
- We also confirm that we have gone through the auction manual and have understood the functionality of the same thoroughly.
- We, hereby, confirm that we will honour the Bids placed by us during the tendering/ e-Reverse auction process as called as e-RA.
- We also confirm that we will accept our Rank / Position that will be displayed when the Bidding Time for the Online Reverse Auction is over.

With regards,

Signature with Designation with company seal Name & Address

(Person having power of attorney for the subject package)

ANNEXURE-II

ABSTRACT OF GENERAL TERMS AND CONDITIONS OF CONTRACT [COMMERCIAL] TO ACCOMPANY PART-I

(To be filled up by the tenderer as indicated in the excel sheet for “ABSTRACT OF PRICE COMPONENT & OTHER COMMERCIAL ASPECTS”)

ANNEXURE-III

SCHEDULE OF QUANTITY AND DELIVERY

(To be filled up by the tenderer)

SI No	Description	UOM	Quantity required	Desired Delivery,	Destination	Remarks
1	24F Joint closure(Plastic enclosure)	Nos	4200	03 Months from the date of LOA	Any store/site of OPTCL	
2	48F Joint Closure (Plastic enclosure)	Nos	700	-Do-	-do-	
3	96 F Joint Closure (Plastic enclosure)	Nos	500			

Signature of Tenderer
with seal of Company

ANNEXURE-IV
(Abstract of price component)

(To be filled up by the tenderer as indicated in the excel sheet)

NB:- Abstract of price component shall be done for equipment/material offered, for installation, testing & commissioning charges, if any. All the above prices will be taken during bid price evaluation.

Signature of Tenderer
with seal of Company

ANNEXURE-V.

SCHEDULE OF PRICES

TENDER SPECIFICATION No.

Item No.	Description.	Qty (unit)	Unit Taxable Value at destination store/ site .	Unit GST	Unit landing Cost including All taxes & Duties.	Total landing cost Including all taxes & duties.
1.	2.	3.	4.	5.	6= (4+5)	7= (6*3)

Signature of Tenderer

Name, Designation and Seal

NB: -

1. The tenderer should fill up the price schedule properly in excel file in e-tender mode. The tender will be rejected, if the price bid is not submitted in accordance with the price schedule. No post tender correspondence will be entertained on break-up of prices. Also, the supplier should agree for delivery at the desired site.
2. The Tenderer shall give an undertaking in part-I of the bid that, entire implication of lower tax and input tax credit benefit have been fully passed on to the purchaser as per anti-profiteering and other provisions under GST Laws while quoting the tender price.
3. Conditional offers will not be acceptable.
4. The bidder is to clearly indicate the period up to which the tax holidays are available to them.
5. Price bid in any other format will not be acceptable and the offer will be rejected.
6. All the above charges will be taken into account, during bid price evaluation.

ANNEXURE-VII

**[PROFORMA FOR COMPOSITE BANK GUARANTEE FOR SECURITY DEPOSIT
PAYMENT AND PERFORMANCE]**

(To be stamped in accordance with Stamp Act and the Non-Judicial stamp paper of appropriate value should be in the name of the Issuing Bank.)

Ref No:-

Bank Guarantee No.

Date:

BG Amount:.....

Validity Period:.....

This Guarantee Bond is executed this..... day of by us the..... Bank at , P.O..... , Dist....., State..... and Code No.....

Whereas the ODISHA POWER TRANSMISSION CORPORATION Limited, Janpath, Bhubaneswar, a company constituted under the Companies Act-1956 (hereinafter called OPTCL) has issued Letter of Award (LOA) No..... Dated..... for the purpose of Supply of materials (here-in after called “the Agreement”) to M/s/Shri , Address..... (herein after called the “Contractor”) for supply under the above LoA and whereas OPTCL has agreed (1) to exempt demand of security deposit under the terms and conditions of the LOA (2) to release payment of the cost of the Contract Price to the Contractor on furnishing by the Contractor to OPTCL a Contract Performance Bank Guarantee (CPBG) of the value of 3% of the Contract Price of the said Agreement.

1. Now therefore, in accordance with the terms and conditions of LOA No. _____ dated _____ for the due fulfillment by the said Contractor of the terms and conditions contained in the said agreement, on production of a Bank Guarantee for Rs. _____ (Rupees _____) only, we the bank _____ [Indicate bank Name , Address & Code] (hereinafter referred to as “the Bank”) at the request of M/s/Shri _____ contractor do hereby undertake to pay to OPTCL, an amount not exceeding Rs. _____ (Rupees _____) only .

2. We, the _____ Bank [indicate the name of the Bank, Address & Code] do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from OPTCL. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees----- In Words).

3. We, the Bank also undertake to pay to OPTCL any money so demanded not withstanding any dispute or disputes raised by the Contractor in any suit or proceeding instituted / pending before any court or tribunal relating thereto, our liability under this present being absolute and irrevocable. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Contractor shall have no claim against us for making such payment.

4. We, the _____ Bank further agree that the guarantee herein contained shall remain in full force and effect during the aforesaid period of _____ days and it shall continue to be so enforceable till all the dues of OPTCL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till OPTCL certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges this guarantee.

Unless a demand or claim under this guarantee is made on us or our Branch Office at Bhubaneswar <Mention Name, Address & Code of the Branch Office at Bhubaneswar of issuing Bank> in writing on or before (Date), we shall be discharged from all liability under this guarantee thereafter.

5. We, the _____ Bank [indicate the name of the Bank, Address & Code] further agree with the Board that OPTCL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bid or to extend time or performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by OPTCL against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Bid and we shall not be relieved from our liability by reason of any such variation postponement or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of OPTCL or any indulgence by OPTCL to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

6. This guarantee will not be discharged due to the change in the name, style or constitution of the Bank and/or of the contractor(s).

7. We, the _____ Bank [indicate the name of the bank, Address & Code] lastly undertake not to revoke this guarantee during its currency except with the previous consent of OPTCL in writing.

8. We, the _____ Bank (Name, Address & Code) further agree that this guarantee shall also be invocable at our place of business at **Bhubaneswar** (indicate Name, Address & Code of the Branch at Bhubaneswar) in the State of Odisha.

“ Notwithstanding anything contained herein”

a) Our liability under the bank guarantee shall not exceed Rs.------(Rupees in words-----) only.

b) This Bank guarantee shall be valid up to -----.

c) We or our Branch at **Bhubaneswar** <Mention Name, Address & Code.....> shall be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of Bhubaneswar a written claim or demand on or before,

The Bank Guarantee is issued in paper form and Advice transmitted through SFMS with required details to the beneficiary's advising bank (**ICICI Bank Bhubaneswar**, IFSC Code ICIC0000061).

Dated, the _____ Day of _____
For _____ [Indicate name of Bank]

Signature.....

Full Name.....

Designation.....

Power Of Attorney.....

Dated.....

Seal of the Bank.....

WITNESS: (SIGNATURE WITH NAME AND ADDRESS)

1. Signature.....

Full Name.....

2. Signature.....

Full Name.....

N.B.:

1. Name of the Contractor.:

2. BG No & Date :.....

3. Amount (In Rs.):.....

4. Validity up to :.....

5. LOA No.....

6. Package No.....

7. Name, Address & Code of Issuing Bank:.....

8. Name, Address & Code of Bhubaneswar Branch of the Issuing Bank:.....

1. The Bank Guarantee shall be accepted after getting SFMS advice as per details below.

Format for SFMS details

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	Contract Performance
2	Currency & Amount	Mandatory	
3	Validity Period(from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code-ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	

14	Purpose of Guarantee	Mandatory	Contract Performance
15	Reference/Description of the underlined tender/contract	Mandatory	LOA No----

ANNEXURE-IX

DATA ON EXPERIENCE

- [a] Name of the manufacturer.
- [b] Standing of the firm as manufacturer of material quoted.
- [c] Description of similar material to that quoted [supplied during the last two years with the name of the organizations to whom supply was made].
- [d] Details as to where installed etc.
- [e] Testing facilities at manufacturer's works.
- [f] If the manufacturer having collaboration with another firm, details regarding the same and present status.
- [g] A list of purchase orders, executed during last three years.
- [h] A list of similar materials of desired specification, Designed, manufactured, tested and supplied which are in successful operation for at least two years from the date of commissioning with legible user's certificate. User's full complete postal address/fax/phone must be indicated. (Refer clause No.7 of the Part-I, Section-II of the specification).

Place:

Date:

Signature of tenderer

Name, Designation, Seal

ANNEXURE-X

DEVIATION SCHEDULE.

Tenderer shall enter below particulars of his alternative proposal for deviation from the specification, if any.

A) Technical

Sl.No	Clause No. of specification	Particulars of deviations.

Place: -

Date

Signature of Tenderer:

Name, Designation, Seal

B) Commercial deviations.

A) Commercial.

Sl.No	Clause No. of specification	Particulars of deviations.

Place: -

Date

Signature of Tenderer:

Name, Designation, Seal

ANNEXURE – XI

LITIGATION HISTORY

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

ANNEXURE – XII

PROFORMA OF EXTENSION OF BANK GUARANTEE

(To be stamped in accordance with Stamp Act and the Non-Judicial stamp paper should be in the name of the issuing Bank)

Ref No:- **Date:-**

Sub: Extension of Bank Guarantee No.for Rs. favouring yourselves, expiring onon account of M/s. in respect of LOA No. dated (hereinafter called original Bank Guarantee).

At the request of M/s., we..... Bank, branch office atand having its Head Office at do hereby extend our liability under the above mentioned Guarantee No. Datedfor a further period ofyears / months/ days from to expire on,except as provided above, all other terms and conditions of the original Bank Guarantee No. dated shall remain unaltered and binding.

Please treat this as an integral part of the original Bank Guarantee to which it would be attached.

“ Notwithstanding anything contained herein”

- a) Our liability under the bank guarantee shall not exceed Rs.------(Rupees in words-----) only.
- b) This Bank guarantee shall be valid up to -----.
- c) We or our Branch at **Bhubaneswar** <Mention Name, Address & Code.....> shall be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of Bhubaneswar a written claim or demand on or before

The Bank Guarantee extension is issued in paper form and Advice transmitted through SFMS with required details to the beneficiary’s advising bank (ICICI Bank Bhubaneswar, IFSC Code ICIC0000061).

Dated this Day of20..... at

For[Indicate name of the Bank]

Signature.....

Full Name

Designation

Power Of Attorney No.....

Seal of the Bank.....

NOTE : i) SFMS advice as per details below.

Format for SFMS details

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	Contract Performance/ . . .
2	Currency & Amount	Mandatory	
3	Validity Period(from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code-ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	

14	Purpose of Guarantee	Mandatory	Contract Performance/ . . .
15	Reference/Description of the	Mandatory	NIT No/LoA No

ANNEXURE – XIII

**FORM OF MANUFACTURER’S AUTHORIZATION
(To be submitted along with the Techno-Commercial Bid)
(Manufacturer’s Authorization Form for DPC)
(On Manufacturer’s Letter-head)**

To: [Insert: name of Employer]

Dear Sir,

WE [insert: name of Manufacturer] who are established and reputable manufacturers of [insert: name and/or description of the plant & equipment] having production facilities at [insert: address of factory] do hereby authorize [insert: name & address of Bidder] (hereinafter, the “Bidder”) to submit a bid, and subsequently negotiate and sign the Contract with you against IFB [insert: title and reference number of Invitation for Bids] including the above plant & equipment or other goods produced by us.

We hereby extend our full guarantee and warranty for the above specified plant & equipment materials or other goods offered supporting the supply, installation and achieving of Operational Acceptance of the plant by the Bidder against these Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations. We also hereby declare that we and, [insert: name of the Bidder] have entered into a formal relationship in which, during the duration of the Contract (including warranty / defects liability) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Signed: _____
Date: _____

In the capacity of [insert: title of position or other appropriate designation] and this should be signed by a person having the power of attorney to legal bind the manufacturer.

Date:.....

Place:.....

(Signature).....
(Printed Name).....
(Designation).....
(Common Seal).....

Note 1. The letter of Authorisation should be on the letterhead of the Manufacturer and should be signed by a person competent and having Power of Attorney to legally bind the Manufacturer. It shall be included by the bidder in its bid.

2. Above undertaking shall be registered or notarized so as to be legally enforceable.

Annexure-XIV

Certificate (to be furnished in bidder company's letter head)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable evidence of valid registration by the Competent Authority shall be attached.]

Authorized signatory

Company seal

PART – II
PRICE BID

1. PRICE:

(i) Bidders are required to quote their price(s) for goods offered indicating they are 'FIRM'

(ii) The prices quoted shall be FOR Destination only at the consignee's site/store inclusive of packing, forwarding, Freight & Insurance. In addition, the break-up of FOR Destination price shall be given as per schedule of Prices in Annexure-V of Section – III. The Bidders has to certify in the price bid that any implication of lower Tax and Input Tax Credit benefit as per anti-profiteering and other provisions under GST Laws, have been fully passed on to the Purchaser, while quoting the tender prices.

2. INSURANCE:

Insurance of materials covered by the Specification should normally be done by the Suppliers with their own Insurance Company unless otherwise stated. The responsibility of delivery of the materials at destination stores/site in good condition rests with the Supplier. Any claim with the Insurance Company or Transport agency arising due to loss or damage in transit has to be settled by the Supplier. The Supplier shall undertake free replacement of materials damaged or lost which will be reported by the Consignee within 30 days of receipt of the materials at Destination without awaiting for the settlement of their claims with the carriers and underwriters.

3. CERTIFICATE FOR EXEMPTION FROM GOODS AND SERVICES TAX:

Offers with exemption from Goods and Services Tax shall be accompanied with authenticated proof of such exemption. Authenticated proof for this clause shall mean Photostat copy of exemption certificates, attested by Gazetted Officers of State or Central Government.

4. PROPER FILLING UP OF THE PRICE SCHEDULE:

The Bidders should fill up the price schedule (Annexure-V of Section-III) properly and in full. The tender may be rejected if the schedule of price is submitted in incomplete form as per clause-34 (ix) of Section-II of the Specification.

5. NATURE OF PRICE INDICATED IN SPECIFICATION SHALL BE FINAL.

The nature of price indicated in the Clause-13, Section – I of PART –I of the Specification shall be final and binding.

Section IV
(PAGE 56 TO 82)

TECHNICAL SPECIFICATION FOR
24F/48F/96F SPLICE CLOSURE
FOR

OPTICAL FIBRE CABLES

(Suitable for Non-Ribbon Fibre Splicing)

TENDER SPECIFICATION NO.

EIC-BharatNet–e-Tender-315/2022-23

GENERIC REQUIREMENTS

NO. TEC/GR/TX/OJC-002/03/APR-2010

(Supersedes GR No. GR/OJC-02/02 SEP 2003)

HISTORY SHEET

Name of the Generic Requirements	No. Of the Generic Requirements	Remarks
Splice Closure for Optical Fibre Cable	G/OJC-02/01 MAR 99	First issue
Splice Closure for Optical Fibre Cable (Suitable for Non – Ribbon Fibre Splicing)	GR/OJC-02/02 SEP 2003	Second issue
Splice Closure for Optical Fibre Cables (Suitable for Non-Ribbon Fibre Splicing)	TEC/GR/TX/OJC-002/03/APR-2010	Third issue

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REFERENCES

TEC STANDARDS

1. No. GR/OJC-02/02 Sept 03 Specification for Optical Joint Closure
2. No. G/PTS-01/02. APR. 2006 Specification Protection Sleeve
3. No. GR/OFT-01/03 APR 2006 Tools for installation & operating OFC and for assembly of the Splice Closure
4. QM 333 (Latest Issue) Specification for Environmental Testing

OTHER STANDARDS (EIA/IEC/Bell core/CISPR/ISO)

1. ITU-T G. 652, 655 & 656 ITU-T Recommendation
2. ASTM G 53 UV Resistance
3. ASTM-D-792 Specific gravity
4. ASTM-D-638 Tensile Strength (ABS Material)
5. ASTM-D-638 Elongation
6. ASTM-D-57-59 Water Absorption
7. ASTM-D-785A Rock well hardness
8. Telcordia GR-771Core Generic Requirements of Fibre Optic splice Closure
Issue 1, July 1994
9. ISO-9001:2000 International Quality Management System

PART I - TECHNICAL SPECIFICATION

1.0 Introduction:

This document describes the generic requirements of universal type of Splice Closure suitable for different types of Optical Fibre Cables (non ribbon type) used in Telecom network. Optical Fibre splice closure is used in the outside plant network and houses the spliced optical fibre cables and its fibres in secured conditions. It shall be possible to use it for both Armoured & Metal Free type of Optical Fibre Cables and also compatible for different types of installation practices of cable installations viz. duct, aerial & directly buried. It provides mechanical protection and environmental sealing (by mechanical sealing method only) to the spliced cables and fibres etc. It is also possible to branch out the cable from the splice closure as and when required without damaging the existing cables.

2.0 Functional Requirements:**2.1 Fibre optic splice closures shall enable:**

- a) Direct junctions (Straight joints)/Butt splice applications.
- b) Branching junctions (Branch Joints)/Lateral splice applications.
- c) Mid sheath/Ring Cut splice applications.

2.2 The closures must be suitable for the same installation conditions as those used for the installation of the following types of cables:

- a) Underground, inside manholes, tunnels, and galleries.
- b) On bridges.
- c) Directly buried in all type of soils.
- d) The closures should be suitable for all types of cable structures for splicing the optical fibre cables adopting different construction practices. It shall be designed for use with all types of cables in all environmental condition of installation. The closure must be equipped & supplied with accessories for the installation of all types of cable having outer diameter from 8 to 18 mm.
- e) The splice closure shall hold mechanically all constituent parts of the cables (sheath, central part, peripheral reinforcements, etc.).

2.3 The splice closures shall be suitable for splicing of optical fibre cables with single mode fibres as per ITU Rec. G.652, G.655, and G.656 for transmission at wavelengths of 1310, 1550 and 1625 nm.**2.4 The splice closures shall contain fibre organizer system where the extra length of fibres and**

- splices are stored in systematic & secured manner. The method or device for safely routing and securing buffer tube and bare fibre shall be provided.
- 2.5** The splice closures shall allow an easy opening & re-closing without any degradation in the performance of splice closure and access to the inner junctions shall be possible without damaging the existing cables. The closure must be designed such that no installed cable is disturbed or require re-sealing of the existing cables during installation of additional cables.
- 2.6** It shall be possible to carry out the installation without inflicting any damage to the existing fibres or the fibre splices.
- 2.7** The increase in attenuation for each of the fibre splices in the installed splice closure as a result of operational strain shall not exceed 0.05 dB, measured at 1310nm & 1550 nm.
- 2.8** The installed splice closure shall satisfy the following mechanical requirements:
The splice closure shall be resistant to mechanical stress, vibration, and impact that may result from normal operation and handling, or from any external sources. The cable terminations shall withstand tensile stress, pressure, bending, and twisting that may result from normal operation and handling, without any leaks arising or other damage being caused to the installed splice closure. The splice closure shall comply all the tests listed in clause No. 4.0
- 2.9** The minimum-bending diameter of the fibres outside the splice trays in the splice closure shall be at least 100 mm.
- 2.10** It shall be possible to open and close the splice closure repeatedly with the tools as per No. GR/OFT-01/03 APR 2006 and subsequent amendment issued, if any, by replacing the sealing arrangement, only if required. Any special tool if required for the installation & operation of optical fibre splice closure, the same shall be provided along with the Splice closure and kitted in each box so as the installer need not to carry on his person any additional tool etc.
- 2.11** The materials used for manufacturing the components/ parts of the splice closure shall be compatible with those used for manufacturing the cables in all respect and shall not effect the performance of the optical fibre cables and fibres. The material used shall be resistant to solvents, chemicals, stress cracking, creep and other materials to which they might get exposed in normal applications.
- 2.12** All the fasteners used in the assembly of a closure shall be captivated to prevent any accidental loss during installation & maintenance activities.
- 2.13** The closure assembled with section of cable containing damaged sheath shall show no evidence of water intrusion into the closure after it is subjected to water immersion test.
- 2.14** The life of the closure shall be at least 25 years and shall match the life of the cable for which it is proposed to be used.

3.0 Technical Requirements:

3.1 General Description:

- a) The splice closure shall have a base and domed shaped body. The dome shall be fixed on the base. The dome shaped body shall cover the entire junction while the base shall enable the entries of the optical fibre cables.
- b) The base and dome shall be made of thermoplastic/High Density Polyethylene/polypropylene/ un-reinforced PC/ PBT alloy material and shall have the characteristics to meet the performance requirements as in annexure - I. The material used shall have minimum hardness of Rockwell R87 or equivalent. The material shall be termite proof (The standard test on the material for termite proof-ness shall be conducted). The base and dome shall be impact resistant. The body shall be smooth with no burrs or sharp edges. Ribs on the body of Splice closure shall be provided.
- c) The splice closure shall be kitted with a full set of parts and materials and any associated tools or apparatus to fully prepare and seal the closure up to the maximum amount of cables and trays unless other wise specified. All materials and required tools directly related to the installation of the closure shall be kitted along with the closure for each closure.

3.2 Dimensions:

The dimensions of the splice closure i.e. of the main body (base & dome), excluding cable entry ports shall be as below:

- a) Length : 400 mm (Minimum)
- b) Internal Diameter : 220 mm (Maximum)

3.3 Cable entry and its Sealing arrangements:

The base shall have a minimum 4 single cable entry ports and one port for express (looped) cable entry. The arrangement shall be provided for terminating looped or express cable by making a suitable necessary provision. All ports shall be sealed and entry ports (sealed) shall be opened as per the requirement. The opening of any port shall not cause any interference to any existing cable. No heat shrink of any type shall be allowed on the cable for sealing. No screws or nut & bolts of any type shall be allowed. The sealing material shall be termite proof. No consumable items shall be required for sealing. The sealing components must be reusable and shall have unlimited shelf life. The sealing arrangements shall be specified along with opening and closing arrangement by the manufacturer and the same shall be tested.

Note: Inclusion of the specific sealing arrangement for cable entry with screws or nut and bolts may be decided by the purchaser.

- 3.3.1 It shall be possible to terminate all cables having outer diameter from 8 mm to 18 mm and the arrangement shall be provided for terminating looped or express cable by making a suitable necessary provision. Alternatively, it shall be possible to install a mid accessed cable without routing a cable tubes through a window or other closure end plate hole.
- 3.3.2 All cable entry ports shall be independent to each other. All access and port sealing shall be accomplished by mechanical methods. No heat shrink of any type shall be allowed. In the event of growth or any other type of activity by the installer, it shall be able to access the cables and the existing trays with spliced fibres and separate the trays and the cable without disturbing any active fibre.

3.4 Strength member & Cable termination and earthlings arrangement:

- 3.4.1 It shall be possible to fix the strength member(s) and the optical fibre cable firmly to the splice closure so that the strength member will not shift laterally or move inside the closure. Separate arrangements shall be made to fix strength member (FRP) and cable.

The closure shall have metallic and/or non-metallic internal structure in order to support and hold the cables and strength members etc. The metallic components shall be of either stainless steel or galvanized steel or electric grade aluminum or tinned copper or Brass or Nickel Chromium. The metals used shall be corrosion resistant. The metallic component shall have low resistivity to withstand the current surge. The internal structure when tested shall meet the requirement of clause no. 4.16 of this GR, without causing any damage to other parts of the closure and shall also meet other performance requirement of the closure. Material of central member shall be defined.

The metallic parts for making connection shall be made of either Brass or Nickel Chromium plated steel or stainless steel or tinned copper or galvanized steel or Aluminium and shall be corrosion proof.

For fixing cassettes, clamps should be continuous extension of metallic portion used for fixing the cable. The metallic strip should be of grade 304 as per ASTM A 240 running throughout the length of dome up to the end.

The mechanical structure for FRP and cable fixing has to be through proper metallic plate.

3.5 Sealing arrangement:

3.5.1 Sealing arrangement of base and dome:

- a) The splice closure's base and dome shall be sealed by Mechanical sealing method using circular clamp.
- b) The manufacturer shall indicate clearly the method of mechanical sealing. The „O' ring (circular in cross section) required for sealing shall be made of Neoprene/Silicon/EPDM rubber. The clamps for sealing the base to dome shall be made of corrosion proof material (for example: Stainless steel or Thermoplastic). The clamp shall be circular in shape. A proper clamping system shall be provided which shall include the facility of lock. Screws or bolts & nuts of any type (used in sealing of the closure) shall not be acceptable. The sealing material shall be termite proof.
- c) The clamp of the fibre optic closure shall be equipped with a locking device to prevent unauthorized entry.

3.5.2 Cable sealing system:

The closure shall provide cable sealing system that uses a mechanical type seal and that does not allow for any kind of heat shrinkable substance (cl. no. 3.3 of this document).

3.6 Fibre Organizer:

Fibre organizer shall be capable of handling and organizing the fibres from different design of the cables. Fibre organizer shall be non-metallic made of ABS/ABS blended material and shall confirm to the requirements mentioned in the annexure - II.

3.6.1 A system of cassettes or trays shall be provided on which the junctions and the extra length of fibres after splicing will be placed (fibre organization). At both ends of the cassettes, an arc type guide should be provided to hold the fibre having a diameter not less than 100 mm. Proper arrows should be provided on the cassettes for guiding the fibres.

3.6.2 The Fibre Organizers (cassettes) system shall be built in such a way as to offer the facilities of its movement about a hinge similar to turning a page in a book and it shall offer easy access to each tray such that working with fibres and splices in any one of tray shall not disturb the fibres on the other trays. This shall ensure to splice all fibres of the cables in predetermined order. Closure in which organizer trays are to be removed to provide access to fibres on other trays shall not be acceptable. For hinged type cassettes tray assembly central pin shall be provided.

3.6.3 Size of the Cassette (Splice tray):

Length	:	200 mm (minimum)
Width	:	90mm (minimum)
Thickness	:	1.5 mm (minimum)
Depth	:	5 mm

- 3.6.4 It shall provide storage space of slack fibres (800 mm minimum length) from either sides of the cables for realignment and rejoining.
- 3.6.5 Splice trays shall be non-metallic made of ABS/ABS blended material and shall be designed such that it shall not harm the fibres from sharp edges etc. The upper tray shall have a suitable cover of ABS material.
- 3.6.6 The minimum bending diameter allowed for the fibre coils inside the splice trays shall be at least 75 mm. During the installation & storage the buffer tubes shall not be required to be subjected to a bend radius smaller than 40 mm.
- 3.6.7 Splice trays shall allow for coiling of fibres with primary (0.250 mm) and secondary (0.9 mm) coating.
- 3.6.8 Following type of splices shall be accommodated in each tray:
 - a) Splicing of primary-coated fibres (0.250 mm)
 - b) Splicing of secondary-coated fibres (0.9 mm) to primary-coated fibres (0.250 mm)
 - c) Splicing of secondary-coated fibres (0.9 mm) to secondary-coated fibres (0.900 mm)
- 3.6.9 Arrangement to hold minimum 12 spliced protection sleeves in the splice tray shall be provided. Splice protection sleeves (heat-shrink type, up to 61 ± 1 mm in length and up to 3mm in diameter) used for the protection of the splice shall meet the requirement as of TEC GR for Optical Fibre Protection Sleeve (GR No. GR/PTS-01/02 APR 2006). The splice protection sleeves may be of 41 ± 1 mm or 61 ± 1 mm or as per the order.
- 3.6.10 Slots of the splice tray shall be able to fix the splice protection sleeves in such a way that they will not shift or move inside the splice tray or come into conflict with the fibre coils once fixed in a slot of the tray. The slots shall not cause any stress or strain neither on splice protection sleeve nor on the optical fibres.
- 3.6.11 The fastening arrangement for entry of the fibres into the splice tray shall be suited to secondary coated fibres, primary coated fibres in tubes, without there being any risk of bending loss or damage to the fibres or the secondary tubes.
- 3.6.12 It shall be possible to fix a minimum of 4 secondary tubes at the entry ports of each tray. No PVC or any other type of adhesive tape is permitted to hold fibre and loose tube inside the tray.
- 3.6.13 It shall be possible to lead fibres from one tray to another tray inside the splice closure to allow flexibility for branch joints and in the splicing of different cable constructions to each other. Whenever a lateral cable is installed to feed either a building or secondary cascading multiple buildings or to feed a secondary ring, a separate tray may be installed to splice the lateral fibres to the backbone fibres. No jumpering of fibres between trays shall be allowed. If in the event the backbone closure or primary ring closure sees multiple re-entries and continued active splicing, then it shall be an option to run a lateral cable to a second closure in the same vault and to use this closure for all service changes.
- 3.6.14 It shall be possible to take any individual fibre out of the splice tray for repair during normal operation without damaging the remaining fibres.
- 3.6.15 Splice trays shall be fixed inside the splice closure in such a way that this shall not loosen once fixed or to shift or move in any way, due to vibration and or movement of the closure.
- 3.6.16 Each tray should have the capacity to store at least 12 primary / secondary coated fibres.
- 3.6.17 The quantity of splice trays in the splice closure shall be supplied as per the number of fibres in a

particular cables and shall be as below and to be supplied accordingly:

3.6.18 Quantity of splice trays (Fibre organizer).

Type of cable	Splice trays	Fibre splices/tray
24 Fibres	4	6
48 Fibres	4	12
96 Fibres	4	24

3.7 Transport tubes:

3.7.1 Transport tubes shall be provided to guide the fibres from terminations point of the cable to storage basket of the closure and or to the entry port of the cassette. The transport tube shall be made of polyolefin / silicon and shall be non-kinking type. The material of the transport tube shall not effect the primary coated fibres. It shall not be necessary to make a transition from loose tube buffers to the splice trays with transition tubing.

3.7.2 Diameter of transport tube shall match the dimension of the funnel and able to accommodate 12 fibres. Alternatively the splitter shall be able to accommodate all ranges in size of central core tube type cables.

3.7.3 A suitable storage basket/slack tray shall be provided to store extra length of loose tube buffers etc. Depth of storage basket/slack tray shall be defined to accommodate around 12 m of loose tube, and shall be tested.

3.7.4 A tray wedge shall be provided in each shelf for ease to enable working on the lower tray.

4.0 TESTS:

4.1 Visual Test:

The splice closure shall be examined physically for the workmanship and the design technology employed. It shall be checked minutely for any flaws defects, cracks visible to naked eye.

4.2 Drop and Topple Test:

Objective: To determine the ability of splice closure to withstand the impacts when closure is inadvertently dropped or toppled during installation, repair work or rough handling in its use.

a) Drop Test:

Height : 2 meters
No. of drops : 10

Procedure: Drop the closure from a height of 2 meters onto a 12 mm thick steel plate bolted on the concrete floor.

Requirement: The closure shall not exhibit any mechanical damage such as cracks or fractures in the closure housing and damage to components within the closure.

b) Topple Test:
Keep the closure in the standing position. Allow it fall freely from 45 degree to all the four directions.

Requirement: The closure shall not exhibit any mechanical damage such as cracks or fractures in the closure housing and damage to components within the closure.

4.3 Gas (AIR) Tightness Test:

Objective: To determine the effectiveness of sealing arrangement of splice closure.

Test Parameters:

Internal pressure : 1.5 Kg/sq. cm.
Temperature : Ambient
Test time : 24 hours.
Gas : Dry Air

Requirement: The fall in pressure in a period of 24 hours shall be within ≤ 0.05 Kg/sqcm at the end of test and there shall be not be any visible flaw or defect after the test. The change in attenuation shall not be more than 0.05 dB.

4.4 Water ingress Test:

Objective: To determine the water tightness of the splice closure when subjected to immersion in water as per 5.4.6 of Telcordia's GR-771.

Test Parameters:

Water head : 6.10 meters
Duration of immersion : 7 days.
Temperature : Ambient

Requirement: There shall not be presence of any water vapor inside the splice closure.

4.5 Variation in attenuation (Residual Loss) Test:

Objective: To check the effect of the use of fibre organizer and other arrangement on the transmission characteristics of optical fibres in assembled condition.

Test parameters:

- a) Wavelength of operation : 1310nm & 1550 nm
- b) The Fibres attenuation of the spliced fibre shall be measured for the following conditions:
 - i) Leaving the fibre un-looped,
 - ii) After the arrangement on the tray and stabilization time of one hour.
- c) The change in attenuation: ≤ 0.05 dB.

Requirement: The change in attenuation shall not increase by more than 0.05 dB the test shall be conducted on at least 50% of the fibres in a cable.

4.6 Clamping:

a) **Cable Clamping:**

Objective: The cable-clamping test means to determine the effect of installing the closure, if any and on the optical transmission characteristics of the fibres and splices.

Test conditions:

1. Place two fibre optic cables inside the closure. Very loosely secure the cables to permit splicing. Sheath retention clamps and environmental seals shall not be used at this time.
2. Splice fibers of the cables.
3. Measure and record the initial value for the optical attenuation of the 50% fibers of the cable.

4. Assemble the closure using all associated cable clamping and sealing hardware according to the manufacturer's instructions. Rigid and non-rigid strength members shall also be terminated per the manufacturer's instructions. Care should be taken to minimize movement of the splices.
5. Repeat the optical measurements on the same 50% fibre of the cable.

Requirement: The change in attenuation shall not be more than 0.05 dB

b) Cable Axial Tension (Sheath Retention) Test:

Objective: To check the cable and sheath holding mechanism for the axial tension if applied to the assembled Splice Closure.

Test parameters:

Tension applied longitudinally on cables.	: 50 Kg
Test Time	: 30 minutes
Internal pressure	: 1.5 Kg/sq. cm.
Temperature	: Ambient
Change in pressure allowed	: ≤ 0.05 kg/sq cm.
The load shall be applied individually to each cable	

Requirement:

1. The holding mechanism shall not cause any damage to the cable or the clamping hardware.
2. There shall not be any fall in the air pressure more than the prescribed limit and the change in attenuation shall not be more than 0.05 dB.
3. There shall be no visible flaws or defects after the test.

4.7 Torsion Test:

Objective: To check the effect of torque on the cables of the splice closure.

Test Parameters:

Torque	: $10 \times D$ [Nm], where D is the external diameter of the cable in mm (Max. 50 Nm)
--------	--

Internal pressure	:	0.5 Kg/sq. cm.
Distance from the entry port	:	250 mm
Rotation	:	90° max.
Temperature	:	Ambient
Number of cycles	:	5
Holding Time	:	5 minutes at each rotation
Change in pressure allowed	:	$\leq 0.05\text{kg/sq cm.}$

The extending cables shall be clamped rigidly at specified distance. Only one cable shall be clamped at a time but the test shall be repeated with each extending cable. The closure shall be axially rotated through 90° and retained for five minutes. It shall be rotated to normal position and then towards to the opposite direction.

Requirement:

1. There shall not be any flaws, defects, cracks visible to naked eye.
2. There shall not be any fall in pressure more than the prescribed limit.

4.8 Flexure Test:

Objective: To test the Flexure strength of the splice closure.

Test Parameters:

1. Internal pressure : 0.5 Kg/sq. cm.
2. Force : Max 500N and 30 degree bending force application 10XD from the end of cable seal sleeve. (D is the dia. of cable in mm).
3. No. of cycle : 5
4. Holding time : 5 minutes
5. Change in pressure allowed : $\leq 0.05\text{kg/sq cm.}$

Requirement: The sample shall be checked for gas tightness. There shall not be any fall in the air pressure more than the prescribed limit and there shall not be any physical damage to the cable or the closure.

4.9 Impact Test:

Objective: To determine the ability of splice closure to with stand impacts likely to occur during installation.

Test Parameters:

Internal Pressure	:	0.5 Kg/sq. cm.
Striking Force	:	5 Kg
Dropping height	:	500 mm
Radius of spherical weight	:	50 mm
Location and Number of impacts:		3 Impacts along the length of closure each, at 3 different points located at 120° along the circumference (Total 9 impacts) At least 3 impacts on the mould line.
Change in pressure allowed:	:	≤ 0.05kg/sq cm.

Requirement: The sample shall be checked for any cracks, permanent deformation or fractures and gas tightness. There shall not be any fall in the air pressure more than the prescribed limit.

4.10 Static Load Test:

Objective: To determine the mechanical strength capability of splice closure under the action of static load.

Test Parameters:

Internal Pressure	:	0.5 Kg/sq. cm.
Static Load	:	250 kg Duration
for keeping load	:	24 hours Change
in pressure allowed	:	≤ 0.05kg/sq cm.

Requirement: The sample shall be checked for any cracks, permanent deformation or fractures and gas tightness test after completion of test. There shall not be any fall in the air pressure more than the prescribed limit.

4.11 Thermal Aging:

Objective: Sealing components (gasket, grommets, O-ring, seals etc.) used in a closure shall not permit the entry of water into the closure after thermal aging at 90 ° C + 1° C for 720 hours.

Procedure: Place two sets of components (gasket, grommets, O-ring, seals etc.) in a air oven perpendicular to air flow. Age the components at 90°C for 720 hours (30 days). Allow the components to stabilize at room temperature for min 24 hrs.

Requirement: There shall not be any visible deterioration or deformation or melting or cracking of the samples. This test should be conducted on the sealed closure followed by the Gas tightness test.

Note: The aged components shall be used on the closure subject to remaining environmental Test

4.12 Environmental cycle:

Objective: To determine the working capability of splice closure for climatic conditions.

Test Parameters:

Lowest temperature	: -20 ⁰ C
Highest temperature	: 60 ⁰ C
Dwell Time	: 4 hrs
Transition time	: 2 hrs
Cycle duration	: 10 and 1/2 hrs.
Number of cycles	: 20
Closed system pressure	: 0.5 kg/sq. cm.
Change in pressure allowed	: ≤ 0.05kg/sq cm.
Humidity	to be kept at 95% at 60 ⁰ C and uncontrolled % humidity for all other temperature during the cycle.

Requirement:

1. The sample shall be checked for any cracks, permanent deformation or fractures and gas tightness.
2. There shall not be any fall in the air pressure more than the prescribed limit and the change in attenuation shall not be more than 0.05 dB.

4.13 Salt spray (Mist) Test (Corrosion Test):

Objective: To determine the suitability of the splice closure for use or storage and / or transport in salt laden atmosphere

Test Parameters:

Salt mist test as per QM - 333 (Latest issue) document.

Requirement: It shall meet the requirements of salt mist test and there shall not be any damage or any evidence of corrosion to the closure.

4.14 Vibration Test:

Objective: To check the effect of vibration on splice closure and its accessories.

Test parameters:

- 3 Planes : (X-axis, Y-axis, Z-axis)
- Sweep : (10-300) Hz \pm 2% at 1 octave \pm 10% per minute
- a) sine sweep (10-28) \pm 1 Hz 0.1" (2.5 mm) double amplitude
- b) sine sweep (28-300) Hz \pm 2% max. 4 g acceleration
- Time : 2 hours each axis
- Internal pressure : 0.5 kg/sq cm.
- Change in pressure allowed : \leq 0.05kg/sq cm.

Requirement: The sample shall be checked for any cracks, permanent deformation or fractures and gas tightness. There shall not be any fall in the air pressure more than the prescribed limit

4.15 Aggressive Media Test:

a. Resistance to aggressive media test

Test conditions:

The samples shall be checked under internal pressure of 0.5 kg/sq cm. in the solutions as stated below at ambient temperature:

Change in pressure allowed: \leq 0.05kg/sq cm.

	Solution	Test Time
pH 2	5 days	
pH 12	5 days	
Kerosene	5 days	
Petroleum jelly	5 days	
Fuel Oil	5 days	

Requirement: The sample shall be checked for the receptivity of splice closure in the given media. There shall not be any fall in the air pressure more than the prescribed limit

b. Resistance to stress cracking test

conditions:

The samples shall be checked under internal pressure of 0.5-kg/sq cm. in the solutions as stated below:

Test temperature	: 50 ± 2° C
Test medium	: 10% Igepal
Internal pressure	: 0.5 kg/sq cm.
Test time	: 7 days
Change in pressure allowed	: ≤ 0.05kg/sq cm.

Requirement: The sample shall be checked for the receptivity of splice closure in the given media. There shall not be any fall in the air pressure more than the prescribed limit.

4.16 Current Surge Test (Applicable for Armoured Optical fibre cable)

Objective: This test is intended to check that externally grounded closures can safely conduct an accidental current surge on the cable through a controlled metal path to ground.

Test Parameters:

The internal current carrying components shall with stand a current surge of 1000 Amps for 5 seconds in case of Armoured optical fibre cable.

Requirement: No damage to any component part of the splice closure.

4.17 UV test:

Objective: To determine the effect of ultraviolet exposure if any on the Tensile and elongation properties of the non - metallic materials.

Test Method:

ASTM G-53 (latest issue) or as per Telcordia's GR 771 issue 1 July 94 (Section 6.4.9)

Duration: 2000 hours.

Test procedure:

1. Prepare four-test sample of the non metallic material. Keep two samples inside the chamber and expose them to ultraviolet radiation. Continue the test for 2000 hours.
2. Check and compare the properties of the tensile and elongation of the two samples subject to radiation with the other 2 samples kept outside at ambient.

Requirement:

1. There should not be any crack or damage to the sample.
2. The parameters of tensile and elongation shall not be reduced more than 20 % from the two samples at ambient.

Note: A certificate from recognized laboratory acceptable if the manufacturer does not have the test facility.

5.0 Consumable Spares: As per Annexure -III

PART II - GENERAL REQUIREMENTS

6.0 Engineering Requirements:

6.1 The splice closure shall be manufactured as per the latest state of art technology.

6.2 The splice closure shall be compact and composite in construction. The mechanical design and construction of the splice closure shall be inherently robust and rigid under all conditions of installation, operation, replacement, storage and transportation etc. The manufacturer shall define the weight of the closure. It shall be made up of heat resistance material.

6.3 The design of the closure must ensure:

- a) The splice closure shall be possible to be sealed hermetically and shall be able to prevent the intrusion of liquid and vapor into the closure interior. The neoprene/Silicon/EPDM rubber O-ring/gasket (circular in cross section) along with a circular clamp is to be used.
- b) Mechanical and Optical protection of the splice.
- c) Environmental protection of the splice.
- d) It shall be possible to pressurise the closure after installation to check the integrity of the environmental seal. The splice closure must be equipped with an integrated pressure valve

- located in the dome. The valve shall be such mounted as to avoid any leakage or entry of moisture etc.
- e) The integrity of the connections and cable seals, fibres and buffers during mounting, functioning and dismounting.
 - f) The possibility of the repeated, reopening and re-closing of the dome and base for access to fibre organizer shall be made available without removing or modifying the entire structure but only by replacing the sealing reusable component, if required.
 - g) The addition of new cables shall be possible without replacing the complete closure, when a growth scenario is encountered. The closure shall allow the installation of a mid-sheath cable in addition to the 1st installation of either a butt or mid sheath splice. The addition of a new cable must be accomplished without the use of any special tool, if required and must not require the replacement or addition of any other closure parts.
 - h) It shall be able to work in saline atmosphere in coastal areas and should be protected against corrosion.

6.4 Marking on body of the splice closures:

The following information by marking on the body of the splice closure shall be provided by way of engraving or laser printing method

- a) Manufacturer's name & date / year of production.
- b) Type of Joint closure - (for example i.e. ARMJC)
- c) Number of splice (organizer) cassettes
- d) Number of Splices per cassette.
- e) Batch number
- f) Serial Number
- g) Model No.
- h) Capacity i.e. No. of cables and fibres
- i) TEC GR No.

7.0 Quality Requirements:

7.1 The Splice Closure shall be manufactured in accordance with the International Quality Standards ISO 9001-2000 for which the manufacturer shall be duly accredited. A quality plan describing the quality assurance system, being followed by the manufacturer, should be submitted. The splice closure shall meet all primary components as applicable in the field in a real life scenario under GR-771-Core issue-1, July 1994 Telcordia's document.

8.0 Environmental requirements:

8.1 The splice closure shall meet the environmental requirements as per document QM-333 (Latest issue) specification for environmental testing. The applicable tests shall be for environment category "C" including drop & topple, vibration and corrosion tests unless otherwise specified separately.

8.2 The splice closure shall meet Telcordia's GR-771 requirement for environment applications

including section on sealing.

9.0 Safety Requirements:

The materials used for manufacturing the components parts of the closure should not be noxious for the installation and maintenance personnel and shall not cause any environmental pollution. It shall be dermatologically safe. The closure installation shall not require the use of any noxious contact cements or liquid adhesives.

10.0 Documentation:

The technical literature in English language along with detailed drawings of all the assemblies and parts shall be provided. All the aspects of Installation, Operation and Maintenance including illustration of external and internal parts shall be covered in the manual. The soft copy as well as hard copy of the manuals shall also be provided. The manuals shall include the following:

- a) Installation, Operation and Maintenance details of closure.
- b) Safety measures to be observed in handling the closure.
- c) Precautions for operation and maintenance.
- d) Illustration of internal and external parts.
- e) List of the parts including their source and ordering information for all thereplaceable parts.
- f) Detailed method for re-opening and re-closing of the splice closure.
- g) Each splice closure shall be supplied along with small booklet giving the installation method etc. in brief to help the installer in field by way of illustrations.
- h) Packaging list of all items included in the shipping container.
- i) A flow chart for the installation of the closure (giving the diagrams and details of parts etc.) shall be provided along with the each closure.

11.0 Shipping Container and Packaging Arrangement:

- a) All the materials and component parts specified by the manufacturer for installation shall be shipped in a single container. Packaging of parts in the carton shall be such that the parts become available in the order in which they are needed.
- b) The shipping container and the packaging equipment shall be reusable, recyclable or biodegradable.
- c) The packaged parts shall be clearly labeled with part number & names consistent with those given in the instructions.
- d) If consumable material with a limited shelf life is packaged with the closure assembly, the expiration date shall be clearly marked.
- e) The packaging shall be adequate to ensure that no damage will occur to the splice closure or

materials under normal handling, shipping and storage in reasonably dry unheated quarters.

12.0 Guidelines for Purchaser

Following clauses shall be applicable for Splice closure for Armoured Optical fibre cable:

- i. The bond clamp shall remain firmly attached to the cable shield of an Armoured cable when the clamp to sheath joint is subjected to a tensile load of 9 kg. There shall be no evidence of the clamps loosening or damage to the clamp or to the cable that would reduce its current carrying capacity as required by AC surge current test (clause no. .16) after the removal of the load. The closure must be designed to allow independent and common bonding.
- ii. A grounding device and mounting accessories shall be provided for grounding the splice closure.
- iii. Arrangement shall be made inside the closure to make metallic continuity of all the metallic parts of the cables and the same shall be able to extend outside the body of the closure to ensure earthlings.
- iv. It shall be possible to make metallic connection on the body of the closure for proper grounding arrangement of the closure.
- v. All the fixture like lugs (thimble) suitable to accommodate earth wire of 6 SWG, washers, bolt & nuts etc. shall be provided. The earthing arrangement shall also be suitable to hold the copper earthlings strip.
- vi. The point of connection on the splice closure for earthling shall be waterproof and airtight to avoid ingress of moisture into the closure.

Note: The earthlings of the splice closure shall be carried out, only in case of armoured optical fibre cables.

ANNEXURE - I

The material of thermoplastic/High density polyethylene/polypropylene characteristics and the performance requirements:

- | | |
|--|---|
| a) Tensile strength | : > 17 N/mm ² |
| b) Elongation at breaking
(velocity 25 mm/min, + 25 ± 2° C) | : > 350 % |
| c) Resistance to chemical agents
(The sample shall be soaked in filling jelly, iso paraffinic solvent derived from petroleum for 30 days) | : No traces of grazing or cracking. |
| d) It shall be U V stabilized. | : (Tested as per ASTM G53 for 1000 Hours) |

- e) Thermal ageing : 168 hours at $+100 \pm 2^{\circ}\text{C}$
 - i) Tensile strength : $>15\text{ N/ mm}^2$
 - ii) Elongation at breaking : $> 300\%$

- f) It shall not be affected by the soil at any PH, or by the micro-organisms and insects or termite and rodents

Note: Test certificate with results from recognized laboratory is acceptable if the manufacturer does not have the test facility.

ANNEXURE - II

The material for fibre organizer:

The optical fibre organiser shall be made of ABS/ABS Blend material having following characteristics:

For ABS materials:

a)	Specific gravity	1.01-1.21 gm/cc	ASTM-D-792
b)	Tensile strength	$\geq 002\text{kg/sqmm}$	ASTM-D-638
c)	Elongation	< 50%	ASTM-D-638
d)	Water absorption	0.4 max.	ASTM-D-57-59
e)	Rock well hardness	R81-R111	ASTM-D-785A

Note: A certificate with results from recognized laboratory is acceptable if the manufacturer does not have the test facility.

ANNEXURE - III

CONSUMABLE SPARES

S. No.	Item	Qty.
1.	Protection Sleeves (GR No. GR/PTS-01/02 APR 2006) (For example for the straight joint of 12 fibre cable the 18 nos. of protection sleeves shall be supplied)	As per the fibre count in the cable + 25 % extra quantity
2.	Cable Tie	12 nos. per tray of required length
3.	Tissue / Lens paper 3"x 4"	100 nos.
4.	Isopropyl (Lab Grade)	100 ml.
7.	PVC adhesive tape (5m length of 10mm width)	1No (IS no. and Shelf life may be specified)
8.	Velcro tape (to hold the cassettes assembly if required)	As per the requirement
9.	Sealing arrangement	1 complete set extra (1+1)
10.	Cable & fibre identification rings (As per the cable and the fibre counts)	2 sets
11.	Transport Tube	As per the requirement
12.	Any other item required for the installation and assembly	As per the requirement
13.	Gasket or O-rings for mechanical sealing	1+1 (One O-ring to be supplied as a spare)
14.	Silica gel	2 packets each of 50grams for each closure supplied. This shall be so packed that it can be tied with the internal mechanical structure of the closure inside the closure.
15.	Fibre guiding pin	1 No.

LIST OF ABBREVIATIONS

ASTM	- American Society for Testing Materials
ABS	- Acrylonitrile Butadiene Styrene
BIS	- Bureau of Indian Standards
BSNL	- Bharat Sanchar Nigam Ltd.
HDPE	- High Density Polyethylene
IEC	- International Electro -Technical Commission
IS	- Indian Standards
ISO	- International Standard Organizations
Mpa	- Mega Pascal
OF	- Optical Fibre
QA	- Quality Assurance
QM	- Quality Manual
RH	- Relative Humidity
TEC	- Telecommunication Engineering Centre
GR	- Generic Requirements
ITU-T	- International Telecommunication Union Transmission
Kg	- Kilo gram
Sq cm	- Square Centimeter
hrs.	- Hours
C	- Centigrade
uv	- Ultra Violet
