

Bid Document

Bid Details	
Bid End Date/Time	02-12-2022 11:00:00
Bid Opening Date/Time	02-12-2022 11:30:00
Bid Offer Validity (From End Date)	90 (Days)
Ministry/State Name	Ministry Of Communications
Department Name	Department Of Telecommunications (dot)
Organisation Name	Iti Limited
Office Name	Raebareli
Total Quantity	57616
Item Category	NON-ZERO DISPERSION SHIFTED SINGLE MODE OPTICAL FIBRE (Q3) , OPTICAL FIBRE G652D (Q3)
MSE Exemption for Years of Experience and Turnover	No
Startup Exemption for Years of Experience and Turnover	No
Document required from seller	Certificate (Requested in ATC),Additional Doc 1 (Requested in ATC),Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Bid to RA enabled	No
Primary product category	OPTICAL FIBRE G652D
Time allowed for Technical Clarifications during technical evaluation	3 Days
Evaluation Method	Item wise evaluation

EMD Detail

Required	No
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ePBG Detail

Required	No
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(a). The EMD Amount will be applicable for each schedule/group selected during Bid creation.

Splitting

Bid splitting not applied.

MII Purchase Preference

MI Purchase Preference	Yes
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MSE Purchase Preference

MSE Purchase Preference	Yes
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1. Preference to Make In India products (For bids < 200 Crore):Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .In case Buyer has selected Purchase preference to Micro and Small Enterprises clause in the bid, the same will get precedence over this clause.

2. Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% (Selected by Buyer)of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for 25%(selected by Buyer) percentage of total QUANTITY.

3. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.

Evaluation Method (Item Wise Evaluation Method)

Contract will be awarded schedulewise and the determination of L1 will be done separately for each schedule. The details of item-consignee combination covered under each schedule are as under:

Evaluation Schedules	Item/Category	Quantity
Schedule 1	Non-zero Dispersion Shifted Single Mode Optical Fibre	4266
Schedule 2	Optical Fibre G652d	53350

NON-ZERO DISPERSION SHIFTED SINGLE MODE OPTICAL FIBRE (4266 kilometer)

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

Brand Type	Unbranded
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Technical Specifications

Buyer Specification Document	Download
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Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	Kishor Kumar	229010,ITI LTD, Sultanpur Road, Raebareli	4266	15

OPTICAL FIBRE G652D (53350 kilometer)

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively)

Brand Type	Unbranded
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Technical Specifications

Buyer Specification Document	Download
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Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	Kishor Kumar	229010,ITI LTD, Sultanpur Road, Raebareli	53350	15

Buyer Added Bid Specific Terms and Conditions

1. Generic

OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up

to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

2. **Buyer Added Bid Specific ATC**

Buyer uploaded ATC document [Click here to view the file.](#)

Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization. Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity/restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and/or terms and conditions governing the bid. Any clause incorporated by the Buyer such as demanding Tender Sample, incorporating any clause against the MSME policy and Preference to make in India Policy, mandating any Brand names or Foreign Certification, changing the default time period for Acceptance of material or payment timeline governed by OM of Department of Expenditure shall be null and void and would not be considered part of bid. Further any reference of conditions published on any external site or reference to external documents/clauses shall also be null and void. If any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations. Also, GeM does not permit collection of Tender fee / Auction fee in case of Bids / Forward Auction as the case may be. Any stipulation by the Buyer seeking payment of Tender Fee / Auction fee through ATC clauses would be treated as null and void.

[This Bid is also governed by the General Terms and Conditions](#)

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, 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. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---Thank You---

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BID DOCUMENT

GeM

SUPPLY OF Fibre G- 652 D and Fibre G- 655C AS PER TECHNICAL SPECIFICATION MENTIONED IN BID DOCUMENT.

TENDER NO- ETW18K1498RL

DGM (PPM- P & LC)

ITI LIMITED

(A Government of India Undertaking)

Sultanpur Road, RAE BARELI-229010 (U.P)

Visit us at www.itiltd-india.com



ITI LIMITED

(A GOVT. OF INDIA UNDER TAKING)

SULTANPUR ROAD , RAE BARELI -229010 (UP) INDIA

Tel.: 0535 -2287565 , 0535-2287387 FAX: 0535-2702106,

E-mail: purmpd_rbl@itilttd.co.in

PURCHASE ENQUIRY NO.: ETW18K1498RL

(Please quote this in all correspondence)

To,

Dear Sir,

Please quote your prices & Delivery for the following items as per attached Terms and conditions at Annexure-A & B.

Item No.	ITI CODE	Item Description	Qty. Required	Delivery required
1-	ORM-FBRG652D-000	SINGLE MODE OPTICAL FIBRE G652D	53350 Km	02 to 04 weeks from date of PO.
2-	ORM-FBRG655C-000	NON-ZERO DISPERSION SHIFTED SINGLE MODE OPTICAL FIBRE,G-655C,NATURAL COLOUR	4266 Km	02 to 04 weeks from date of PO.

NOTE: (1) Technical Specifications are as per enclosed.

(2) Material should confirm the BSNL GR No:TEC/GR/TX/ORM-001/05/DEC-2017 & it's latest amendments

(3)The Valid CACT Approval is required. Please submit Leaflet/data sheet alongwith quotation.

(4) Payment terms- LC 60 days.

Special Note:

1. Please confirm material specification, strictly as per our enquiry in your quotation.
2. Quote the basic rate, GST, freight, & HSN code of material separately.
3. Any product / item found faulty during our manufacturing process / system testing / installation and commissioning / operation of our equipment in field due to deviation from our specifications shall be replaced by vendor free of cost immediately.
4. In case of any dispute only Rae Bareli court will have jurisdiction to try the suit if any.
5. This is a Proprietary tender, hence only the vendors approved by ITI Ltd may apply against this enquiry.
6. The above enquiry is also available in our website www.itilttd.india.com & Govt.website www.eprocure.gov.in
7. Price must be on FOR ITI RBL basis inclusive of insurance charges.
8. **Test Certificate must be provided by the vendor at the time of supply.**
9. Vendors have to indicate whether they are MSME Registered vendor/DIPP recognized Start ups with supporting documents.
10. MSME vendors have to indicate whether they are SC/ ST owned or women owned.

Yours faithfully
For ITI Limited, Raebareli
(PANKAJ SINHA)
DGM (PPM- P & LC)

Mob: 9450061839

TERMS AND CONDITIONS

ENQUIRY NO.- ETW18K1498RL

1. SUBMISSION OF TENDERS: (A) This is only an enquiry to quote and not an order. This tender enquiry is not transferable.
2. OPENING OF TENDERS :
Tenders against enquiries will be opened in the presence of the tenderer/authorized representative on THE DUE DATE OF THE TENDER itself / the next working day.

NOTE :

- a. Send your quote well in advance of due date to avoid delay.
- b. Please indicate the Sl.No. and Code/Description exactly as per our enquiry.

Any substitute or alternate code quoted should be clearly stated. In case the Item quoted is under obsolescence, the same may be indicated with best last date of P.O and supply feasibility.

4. PRICES :
 - a. ITI is planning to have long term tie up with limited vendors, who can keep up good quality, prompt delivery and lowest cost. Hence, you may quote in such a way that a long term relationship is possible.
 - b. Prices must be per unit as called for in the enquiry and should be on F.O.R, ITI Works basis only and inclusive of insurance charges. In such an event, while tabulating the offers, insurance is not to be reckoned and should include weather proof packing adequate to withstand transshipment damages. Local supplier's offers should be on F.O.R delivery at our Stores in our Plant.
 - c. ITI, under normal circumstances, may not negotiate for the price. We may also short list only two to three suppliers for ordering. Hence you are requested to quote your best price in the original quotation itself.
 - d. Any counter terms and conditions are not binding on us unless we agree to the same in writing.
 - e. In case of an order on you, the ordered rate should be firm till the completion of the order. In case where the market prices of your inputs are fluctuating too frequently, you shall clearly define price variation clause. Please note that any variation in price up to 5% due to variation in FE / statutory levies will be absorbed by the supplier. However, for variation beyond 5% due to variation in FE / statutory levies, the burden of price increase / advantage of price decrease will be shared equally between ITI and the supplier.
 - f. Vendors should deliver the material to ITI-Stores irrespective of whether they are Raebareli based or from outstation. Out station vendors can make use of their local representative / Courier Service / Surface transport on door delivery basis to deliver the material at ITI-Stores. ITI will not take the responsibility of clearing the goods from the carrier's godown / office / railway station / airport etc.
 - g. In case of supply of imported items by local dealers proof of import should be provided. Prices quoted should indicate clearly the Modvat relief (by way of C.V.D), being passed on to ITI and supplier should furnish regular invoice indicating rate and amount of duty that is passed on which should be proportionate to the materials sold to ITI from the relevant imported consignment, covered under this appropriate Bill of Entry.
5. STATUTORY LEVIES :
 - a. All applicable statutory levies like GST etc., should be separately indicated with the current rate applicable. Otherwise rate quoted will be deemed as inclusive of taxes / levies. Vague terms like "As applicable at the time of supply" should be avoided. Apart from statutory levies other charges like handling, P&F etc., will not be paid by us.
 - b. In case of GST exempted delivery, authorization letter from the competent authority should be enclosed along with the quote.
 - c. In case of your absorbing the GST portion, the same may be specified clearly in the quotation itself and not after the tender opening, which otherwise will be treated as post-tender correction and would disqualify your quote.
 - d. In case of statutory levies like GST Surcharge etc., are modified the same has to be intimated to ITI immediately.

Contd...../..

6. MODVAT RELIEF :
 - a. We are eligible to avail the credit of GST paid on items procured for manufacturing Tele-communication equipments under MODVAT RELIEF scheme. Hence "Invoice Cum Gate Pass" in original for payment, and transporter copy duly marked and authenticated is to be produced along with the consignment. In case of your failing to adhere to this instruction, no GST will be reimbursed by us.
 - b. Invoices should be in the prescribed form and have all particulars as per the GST Rules and notifications as amended from time to time, particularly Assessor code, Range Division, rate and amount of duty debited and Debit particulars.

- c. Agents/Distributors, on whom an order is placed should also produce Invoice Cum Gate Pass as per the procedure laid down by GST Rules and notifications issued from time to time. They should get registered with GST authorities where GST is being passed on.
7. TERMS OF PAYMENTS:
- a. ITI prefers **LC PAYMENT 60 days**. For any variation in payment terms quoted by different vendors, loading in the comparative statement will be made suitably.
- b. NO PAYMENT WILL BE MADE FOR THE REJECTED QUANTITY.
- c. In case you fall under SSI as per DIC, please mention the same in all your quotations / invoices indicating also the certificate number. This is essential if in the unlikely event of delay in payment, you would like to claim preferential payment as an S.S.I.
8. INSPECTION :
- b. We are planning to reduce inspection time with self certification scheme for the vendors who keep up good quality leading to "ship to stock system".
- c. Inspection of the material at our works will be final. ITI reserves the right to inspect the material at any other standard testing center authorised by us.
- d. We or our representative including our customer may if required preliminarily inspect the product at vendor's premises. Such verification shall not absolve the vendor of the responsibility to provide the acceptable product nor shall preclude subsequent rejection during the final inspection at our works. It is the responsibility of every vendor to ensure that only the inspected materials confirming to our specifications / drawings/requirements are supplied.
- e. The supplies shall be from the latest batch of production. Batch Number should be indicated on the components/packet/test certificate and accompanying delivery challan / test certificate.
- f. Test certificate / check list should accompany each supply. Consignments without test certificate are liable for rejection. Rejected material should be collected immediately (within 30 days) after our intimation by giving two days prior notice for completing the necessary GST FORMALITIES. You should make arrangements to collect the material either personally, OR through your authorised representatives. ITI does not take any responsibility to send the material back to you. After 90 days from the date of rejection intimation to you the material will be scrapped at your risk if not collected.
9. SAMPLES :
Those tenderers who have not supplied the material against any of our earlier orders, should submit FREE SAMPLES clearly indicating enquiry reference. Free samples along with your offer is preferable. In case of a Purchase Order on you bulk supply should commence only after approval of samples.
10. WARRANTY :
Please note that we are an ISO 9002 accredited company. All our equipments/systems have a warranty of 18 months from the date of despatch to our customer. Hence the warranty of your products should be for a minimum period of 24 months from the date of supply. Within this warranty period, if any of your component/subsystem is found defective during our manufacturing process/system testing/installation and commissioning/operation of our equipment in the field, the same is to be replaced free of cost immediately by you."
11. GENERAL :
- a. We reserve the right to accept or reject any or all offers and to order full or part quantities or cancellation thereof without assigning any reason whatsoever.
- b. Successful tenderer only will be intimated by post through/letter of intent/firm orders.
- c. Canvassing by tenderers in any form including un-solicited letters against tenders submitted or post-tender corrections shall render their tenders liable for summary rejection.

Contd...../..

12. DELIVERY SCHEDULE :
- a. Please indicate minimum LEAD TIME REQUIRED, manufacturing capacity and the quantity that can be reserved for us.
- b. Liquidated Damages Clause :
Time is the essence of contract and the materials, against an order arising out of this enquiry must be delivered by the supplier according to the delivery schedule indicated in the P.O. In case of any change, the supplier should inform us in advance and obtain our approval to the revised delivery schedule. Should the supplier fail to deliver the material or part thereof as per the delivery schedule, or any extension thereof, we shall be entitled at our option either to recover from the supplier, as penalty, a sum equivalent to ½% (half percent) per week for first four weeks and 0.7% per week thereafter for such delay or part thereof or terminate the contract in respect of the balance supply so delayed and purchase materials elsewhere at the risk and cost of the defaulting supplier.
13. SECURITY DEPOSIT :
In case of an order on you, you will have to agree for an interest free security deposit of 5% of order value subject to a maximum of Rs 10 Lakhs, by cash or draft only which will be forfeited in case you fail to execute the order to our satisfaction in all respects. This clause may be waived off in case of approved or established suppliers. However, the sole discretion lies with ITI.

14. **FABRICATION ORDERS ONLY :**
 In case of Fabrication Orders :
 a. Necessary Bank guarantee towards the cost of raw material / component to be issued by ITI would be necessary.
 b. A quality agreement has to be entered into with ITI before commencing supply.
 c. Furnish the particulars of the Income Tax such as
 i) ACCOUNT NO.
 ii) Place where Income Tax Circle is situated along with tender documents. otherwise such tenders are liable for rejection.
 d. The technical know-how Literature, specifications etc., if furnished to you alongwith this Purchase Enquiry/Order are strictly for the limited purpose of supplying / manufacturing the items mentioned therein and you shall have no right to make use of the same for any other purpose or to execute any other order or pass on the same to others. The aforesaid know-how, literature, specification etc., must be returned to us in case you regret to quote / after executing the orders as the case may be.
 e. **Further Please certify that :**
 i) The know-how will not be passed on to others.
 ii) No export will be done by you directly without arriving at a commercial understanding with ITI Ltd.
 iii) No supply will be made by you to any outside agency without ITI's prior approval and commercial understanding.
 iv) Kits/components will not be diverted to other orders.
 v) Drawing if any should be returned, along with your offer.
 f. Tax would be deducted at source under the T.D.S scheme as per IT rules at appropriate rates, wherever applicable. Any exemption or recovery at lower rates would be considered only on production of appropriate certificates issued by IT officers concerned. T.D.S Certificates would be issued after the 15th of following month.
15. **LOCAL REPRESENTATION :**
 Please indicate your local representative's address, telephone, Fax No., E-mail Id, the person to be contacted, in the offer.
16. **TECHNICAL CATALOGUE :**
 In the event of any change in the technical catalogue, updated version may be sent to us immediately. It is essential that you simultaneously take up the same with approving authority and their approval copy sent to us.
17. Issue of "C" Form / Form"37" will be done on financial year wise as per the statement to be furnished by you as below in quadruplicate. We will be only endorsing on the same. Any qualification criteria VDC approval etc may be considered.VDC approval required.....
18. **GOVERNING LAW :**
 All suits shall be instituted in a court of competent jurisdiction at Rae Bareli and in case of arbitration, the Indian Arbitration Act, 1996 is applicable.

Yours faithfully
 For ITI Limited, Raebareli

(PANKAJ SINHA)
DGM (PPM- P & LC)
Mob: 9450061839

ENQUIRY NO.- ETW18K1498RL

ANNEXURE-B

SUBJECT: LOADING OF PAYMENT FACTOR

INDIGENOUS SOURCES:

SN	PAYMENT TERMS	LOADING FACTOR
1-	NORMAL 60 DAYS	NIL
2-	NORMAL 30 DAYS	1.25% ON LANDED COST
3-	COD / ON DELIVERY / THROUGH BANK	2.50% ON LANDED COST
4-	PROFORMA INVOICE	3.75% ON LANDED COST

For ITI Limited, Raebareli

(PANKAJ SINHA)
DGM (PPM- P & LC)
Mob: 9450061839

CHECK LIST

(Tender No. _____ and due date: _____)

(Please ensure that following documents/details have been enclosed /accepted)

Sl. No.	Particulars	Status	Please tick (v)
1	Every page of tender duly signed, stamped and attached.	Yes	
2	Validity of offer 90 days from the tender opening date	Yes	
3	Quoted prices Shall be firm during the period of supply - Accepted	Yes	
4	Following declarations on party letterhead enclosed in ATC " on GeM Portal a) We hereby certify that we have not been blacklisted by any Public Sector Undertaking/Public Department. b)We have gone through the terms and conditions given in your above tender form, is accepted and agreed by us	Yes	

5	Party to indicate HSN Code: and GST:..... % for the quoted item.	Yes	
7	The delivery term shall be “FOR ITI Raebareli Stores” .	Yes	
8	The Payment term shall be “LC 60 days from the date of receipt of material at ITI Raebareli”.	Yes	
9	ITI Raebareli reserves the right to reject any offer due to non-compliance with the above conditions and/or non-receipt of this form in duly filled condition - Agreed	Yes	
10	For delivery term FOR ITI Raebareli, Transit insurance shall be at party's end and it should be included in quoted basic rate.	Yes	
11	Integrity Pact document accepted and Signed by Party	Yes	
12	Declaration that the party is the manufacturer of the quoted items Enclosed	Yes	
13	Vender to undertake declaration on the letter head about supply of material uninterrupted supplies as per ITI's monthly/ quarterly delivery schedule Enclosed	Yes	
14.	MSME Registration If the firm is registered as Micro/Small/Medium Enterprises as per MSMED Act, 2006, the same may be confirmed by the renderer and submit a photocopy (Self certified) of the registration certificate in support thereof. Otherwise it will be construed that the firm is not registered as per MSMED Act, 2006.	Yes	
15.	The Valid CACT Approval is required. Please submit CACT certificate alongwith quotation.	Yes	
16.	Material should confirm the BSNL GR No:TEC/GR/TX/ORM-001/05/DEC-2017 & it's latest amendments	Yes	

The desired documents must be uploaded on **GeM Portal** in column of **“ATC ”**.

Signature of the Tenderer with SEAL

RFP/Tender Ref No:

Dated:

Annexure-III

Bid Securing Declaration Form

<Letterhead of the bidder>

<Date>

To ITI LIMITED RAEBARELI,
SULTANPUR ROAD, RAEBARELI-229010

I/We. The undersigned, declare that:

I/We understand that bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you/ MeitY for a period of two years from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity or its extended period, if any; or
- b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
- (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Bank Guarantee, in accordance with the Instructions to Bidders.
- c) If the bidder is found indulging in any corrupt, fraudulent or other malpractice in respect of the bid; or
- d) If there is a discrepancy between words and figures quoted by the bidder and the bidder does not accept that the amount in words prevails over amount in figure.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)

in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a consortium, the Bid Securing Declaration must be in the name of all partners to the consortium that submits the bid)

INTEGRITY PACT

PURCHASE ORDER No.

THIS Integrity Pact is made on.....day of20 .

BETWEEN:

ITI Limited having its Registered & Corporate Office at ITI Bhavan, Dooravaninagar, Bangalore – 560 016 and established under the Ministry of Communications, Government of India (hereinafter called the Principal), which term shall unless excluded by or is repugnant to the context, be deemed to include its Chairman & Managing Director, Directors, Officers or any of them specified by the Chairman & Managing Director in this behalf and shall also include its successors and assigns) ON THE ONE PART

AND:

..... represented by Chief Executive Officer (hereinafter called the Contractor(s), which term shall unless excluded by or is repugnant to the context be deemed to include its heirs, representatives, successors and assigns of the contractor ON THE SECOND PART.

Preamble

WHEREAS the Principal intends to award, under laid down organizational procedures, contract for of ITI Limited. The Principal, values full compliance with all relevant laws of the land, regulations, economic use of resources and of fairness/ transparency in its relations with its Contractor(s).

In order to achieve these goals, the Principal has appointed an Independent External Monitor (IEM), who will **monitor** the tender process and the execution of the contract for compliance with the principles as mentioned herein this agreement.

WHEREAS, to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact the terms and conditions of which shall also be read as integral part and parcel of the Tender Documents and contract between the parties.

NOW THEREFORE, IN CONSIDERATION OF MUTUAL COVENANTS STIPULATED IN THIS PACT THE PARTIES HEREBY AGREE AS FOLLOWS AND THIS PACT WITNESSETH AS UNDER:

SECTION 1 – COMMITMENTS OF THE PRINCIPAL

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
- No employee of the Principal, personally or through family members, will in connection with the tender for or the execution of the contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the personal is not legally entitled to.
 - The Principal will, during the tender process treat all bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all bidder(s) the same information and will not provide to any bidder(s) confidential/additional information through which the bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employee, which is a criminal offence under IPC/PC Actor if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its internal laid down Rules/ Regulations.

SECTION 2 – COMMITMENTS OF THE BIDDER/CONTRACTOR

- 2.1 The Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself observe the following principles during the participation in the tender process and during the execution of the contract.
- The contractor(s) will not, directly or through any other person or firm offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - The contractor(s) will not enter with other contractors into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - The contractor(s) will not commit any offence under IPC/PC Act, further the contractor(s) will not use improperly, for purposes of competition of personal gain, or pass onto others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - The Contractor(s) of foreign origin shall disclose the name and address of the agents/representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.
 - The Contractor(s) will, when presenting the bid, disclose any and all payments made, are committed to or intend to make to agents, brokers or any other intermediaries in connection with the award of the contract.
 - The Contractor(s) will not bring any outside influence and Govt bodies directly or indirectly on the bidding process in furtherance to his bid.
 - The Contractor(s) will not instigate third persons to commit offences outlined above or to be an accessory to such offences.

SECTION 3 – DISQUALIFICATION FROM TENDER PROCESS & EXCLUSION FROM FUTURE CONTRACTS

- 3.1 If the Contractor(s), during tender process or before the award of the contract or during execution has committed a transgression in violation of Section 2, above or in any other form such as to put his reliability or credibility in question the Principal is entitled to disqualify Contractor(s) from the tender process.

- 3.2 If the Contractor(s), has committed a transgression through a violation of Section 2 of the above, such as to put his reliability or credibility into question, the Principal shall be entitled exclude including blacklisting for future contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case, particularly taking into account the number of transgression, the position of the transgressor within the company hierarchy of the Contractor(s) and the amount of the damage. The exclusion will be imposed for a period of minimum one year.
- 3.3 The Contractor(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground including the lack of any hearing before the decision to resort to such exclusion is taken. The undertaking is given freely and after obtaining independent legal advice.
- 3.4 A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that on the basis of facts available there are no material doubts.
- 3.5 The decision of the Principal to the effect that breach of the provisions of this Integrity Pact has been committed by the Bidder(s)/ Contractor(s) shall be final and binding on the Bidder(s)/ Contractor(s), however the Bidder(s)/ Contractor(s) can approach IEM(s) appointed for the purpose of this Pact.
- 3.6 On occurrence of any sanctions/ disqualifications etc arising out from violation of integrity pact Bidder(s)/ Contractor(s) shall not entitled for any compensation on this account.
- 3.7 subject to full satisfaction of the Principal, the exclusion of the Contractor(s) could be revoked by the Principal if the Contractor(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption preventative system in his organization.

SECTION 4 – PREVIOUS TRANSGRESSION

- 4.1 The Contractor(s) declares that no previous transgression occurred in the last 3 years immediately before signing of this Integrity Pact with any other company in any country conforming to the anti-corruption/ transparency International (TI) approach or with any other Public Sector Enterprises/ Undertaking in India of any Government Department in India that could justify his exclusion from the tender process.
- 4.2 If the Contractor(s) makes incorrect statement on this subject, he can be disqualified from the tender process or action for his exclusion can be taken as mentioned under Section-3 of the above for transgressions of Section-2 of the above and shall be liable for compensation for damages as per Section- 5 of this Pact.

SECTION 5 – COMPENSATION FOR DAMAGE

- 5.1 If the Principal has disqualified the Bidder(s)/Contractor(s) from the tender process prior to the award according to Section 3 the Principal is entitled to forfeit the Earnest Money Deposit/Bid Security/ or demand and recover the damages equitant to Earnest Money Deposit/Bid Security apart from any other legal that may have accrued to the Principal.
- 5.2 In addition to 5.1 above the Principal shall be entitled to take recourse to the relevant provision of the contract related to termination of Contract due to Contractor default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor or demand and recover liquidate and all damages as per the provisions of the contract agreement against termination.

SECTION 6 – EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS

- 6.1 The Principal will enter into Integrity Pact on all identical terms with all bidders and contractors for identical cases.
- 6.2 The Bidder(s)/Contractor(s) undertakes to get this Pact signed by its sub-contractor(s)/sub-vendor(s)/associate(s), if any, and to submit the same to the Principal along with the tender document/contract before signing the contract. The Bidder(s)/Contractor(s) shall be responsible for any violation(s) of the provisions laid down in the Integrity Pact Agreement by any of its sub-contractors/sub-vendors/associates.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this Integrity Pact or violate its provisions.

SECTION 7 – CRIMINAL CHARGES AGAINST VIOLATING BIDDER(S)/ CONTRACTOR(S)

- 7.1 If the Principal receives any information of conduct of a Contractor(s) or sub-contractor/sub-vendor/associates of the Contractor(s) which constitutes corruption or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer of the Principal for appropriate action.

SECTION 8 – INDEPENDENT EXTERNAL MONITOR(S)

- 8.1 The Principal appoints competent and credible Independent External Monitor(s) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extend the parties comply with the obligations under this pact.
- 8.2 The Monitor is not subject to any instructions by the representatives of the parties and performs his functions neutrally and independently. He will report to the Chairman and Managing Director of the Principal.
- 8.3 The Contractor(s) accepts that the Monitor has the right to access without restriction to all product documentation of the Principal including that provided by the Contractor(s). The Bidder(s)/Contractor(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The Monitor is under contractual obligation to treat the information and documents Contractor(s) with confidentiality.

- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meeting could have an impact on the contractual relations between the Principal and the Contractor(s). As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in specific manner, refrain from action or tolerate action.
- 8.5 The Monitor will submit a written report to the Chairman & Managing Director of the Principal within a reasonable time from the date of reference or intimation to him by the principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.6 If the Monitor has reported to the Chairman & Managing Director of the Principal a substantiated suspicion of an offence under relevant IPC/PC Act, and the Chairman & Managing Director of the Principal has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
- 8.7 The word '**Monitor**' would include both singular and plural.
- 8.8 Details of the Independent External Monitor appointed by the Principal at present is furnished below: -

ShriJaveed Ahmad, IPS (retd.)
M-1101, Shalimar Gallant Apartment
VigyanpuriMahanagar
LUCKNOW – 226 006

Any changes to the same as required / desired by statutory authorities is applicable.

SECTION 9 – FACILITATION OF INVESTIGATION

- 9.1 In case of any allegation of violation of any provisions of this Pact or payment of commission, the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder(s)/Contractor(s) and the Bidder(s)/Contractor(s) shall provide necessary information and documents in English and shall extend all help to the Principal for the purpose of verification of the documents.

SECTION 10 – LAW AND JURISDICTION

- 10.1 The Pact is subject to the Law as applicable in Indian Territory. The place of performance and jurisdiction shall the seat of the Principal.
- 10.2 The actions stipulated in this Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

SECTION 11 – PACT DURATION

- 11.1 This Pact begins when both the parties have legally signed it. It expires after 12 months on completion of the warranty/guarantee period of the project / work awarded, to the fullest satisfaction of the Principal.
- 11.2 If the Contractor(s) is unsuccessful, the Pact will automatically become invalid after three months on evidence of failure on the part of the Contractor(s).
- 11.3 If any claim is lodged/made during the validity of the Pact, the same shall be binding and continue to be valid despite the lapse of the Pact unless it is discharged/determined by the Chairman and Managing Director of the Principal.

SECTION 12 – OTHER PROVISIONS

- 12.1 This pact is subject to Indian Law, place of performance and jurisdiction is the Registered & Corporate Office of the Principal at Bengaluru.
- 12.2 Changes and supplements as well as termination notices need to be made in writing by both the parties. Side agreements have not been made.
- 12.3 If the Contractor(s) or a partnership, the pact must be signed by all consortium members and partners.
- 12.4 Should one or several provisions of this pact turn out to be invalid, the remainder of this pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 12.5 Any disputes/ difference arising between the parties with regard to term of this Pact, any action taken by the Principal in accordance with this Pact or interpretation thereof shall not be subject to any Arbitration.
- 12.5 The action stipulates in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place and date first done mentioned in the presence of the witnesses:

For PRINCIPAL For CONTRACTOR(S)

.....
(Name & Designation)

(Name & Designation)

Witness

Witness

1)

1).....

2)

2).....

SECTION – I
(TYPE –I)

GENERIC REQUIREMENTS FOR SINGLE MODE OPTICAL FIBRE

(As per ITU-T Rec. G. 652 D)

1.0 Single Mode Optical Fibre used in manufacturing optical Fibre Cables shall be as per ITU-T Rec. G. 652 D. The specification of optical fibres are mentioned below:

1.1 Type of fibre : Single mode Optical Fibre
(Wavelength band optimized conforming to ITU-T Rec
nominal 1310 nm) G.652 D.

1.2 Geometrical Characteristics:

1.2.1 MFD at 1310nm : $9.2 \pm 0.4 \mu\text{m}$

1.2.2 Cladding diameter : $125\mu\text{m} \pm 0.7 \mu\text{m}$

1.2.3 Cladding Non-circularity : $\leq 0.8\%$

1.2.4 Core Clad concentricity error : $\leq 0.5 \mu\text{m}$

1.2.5 Diameter over primary coated with : $242 \pm 5 \mu\text{m}$
double UV cured acrylate.
(To be measured on uncoloured fibre)

Note: The thickness of colour coating may be over and above the values specified above if the manufacturer adopts separate UV cured colouring process to colour the uncoloured fibres, other than the on line integrated colouring process (of secondary layer of primary coating) of the fibres during fibre manufacturing.

1.2.6 Colored fibre coating diameter : $252 \pm 10\mu\text{m}$

1.2.7 Coating / Cladding Concentricity : $\leq 12 \mu\text{m}$

1.3 Transmission Characteristics:

1.3.1 Attenuation:

a) Fibre attenuation before Cabling

- i) At 1310 nm : $\leq 0.34 \text{ dB/Km}$
- ii) Between 1285 to 1380 nm : $\leq 0.37 \text{ dB/Km}$
- iii) Between 1390 to 1525 nm : $\leq \text{Value at 1310nm}$
- iv) At 1550 nm : $\leq 0.20 \text{ dB/Km}$
- v) Between 1525 to 1625 nm : $\leq 0.24 \text{ dB/Km}$
- vi) At 1270 nm : $\leq 0.40 \text{ dB/km}$
- vii) At 1490 nm : $\leq 0.24 \text{ dB/km}$
- viii) At 1625 nm : $\leq 0.23 \text{ dB/km}$

b) Water Peak Attenuation before cabling

- Between 1380-1390 nm : $\leq \text{Value at 1310nm}$

Note:

1. Attenuation in the band 1380-1390nm shall be checked at every 2nm after Hydrogen ageing as per IEC 60793-2-50. Hydrogen ageing test is to be carried out by CACT, Bangalore or any other recognized laboratory for type test.
2. Sudden irregularity in attenuation shall be less than 0.1 dB
3. The Spectral attenuation shall be measured on un-cabled fibre in the 1250nm-1625 nm band at an interval of 10nm and the test results shall be submitted.

c) Fibre attenuation after cabling

- i) At 1310 nm : $\leq 0.36 \text{ dB/km}$
- ii) At 1550 nm : $\leq 0.22 \text{ dB/Km}$
- iii) At 1625 nm : $\leq 0.26 \text{ dB/Km}$
- iv) At 1490nm : $\leq 0.26 \text{ dB/Km}$

d) Water Peak Attenuation after cabling

At 1383nm \pm 3nm : \leq Value at 1310nm

Note: Fibre attenuation after cabling may be checked during approval testing of respective GR of Cable.

1.3.2 Dispersion:

a) Total Dispersion

- i) In 1285-1330 nm band : ≤ 3.5 ps/nm. Km
- ii) In 1270-1340 nm band : ≤ 5.3 ps/nm. Km
- iii) At 1550 nm. : ≤ 18.0 ps/nm. Km
- iv) At 1625 nm : ≤ 22.0 ps/nm. Km

Note: The dispersion in the 1250 nm–1625 nm band shall be measured at an interval of 10nm and the test results shall be submitted.

b) Polarization mode dispersion

- i) Un-cabled Fibre : ≤ 0.15 ps/ $\sqrt{\text{km}}$
- ii) Cabled Fibre : ≤ 0.3 ps/ $\sqrt{\text{km}}$
- iii) Link design value for un-cabled fibre : ≤ 0.06 ps/ $\sqrt{\text{km}}$

Note: Measurement on un-cabled fibre may be used to generate cabled fibre statistics and correlation is established.

c) Zero Dispersion Slope : ≤ 0.092 ps/(nm²·km)

d) Zero dispersion wave length range : 1300 -1324 nm

1.3.3 Cable Cut off wavelength : 1260nm Max.

Note - The above cut off wavelength is w.r.t. 22M sample length of fibre.

1.4 Mechanical Characteristics:

1.4.1 Proof test for minimum strain level : 1%
(Test method IEC-60793-1- 30)

1.4.2 Stripability force to remove primary coating of the Un-aged and Aged fibre
(Water aged and Damp heat aged): (Test method IEC- 60793 - 1 - 32)

- a) Peak strip force : $1 \leq F \leq 8.9 \text{ N}$
- b) Average strip force : $1 \leq F \leq 5 \text{ N}$

Note: The force required to remove $30 \text{ mm} \pm 3 \text{ mm}$ of the fibre coating shall not exceed 8.9 N and shall not be less than 1N.

1.4.3 Dynamic Tensile Strength
(Test method IEC-60793-1-31)

- a) Un-aged : $\geq 550 \text{ KPSI (3.80 GPa)}$
- b) Aged (Damp heat aged) : $\geq 440 \text{ KPSI (3.00 GPa)}$

1.4.4 Dynamic Fatigue :
(Test method IEC-60793-1- 33)

- a) Un-aged: ≥ 20
- b) Aged (Damp heat aged): ≥ 20

1.4.5 Fibre Macro bend
(Test method FOTP – 62/ IEC- 60793-1-47)

- a) Change in attenuation when fibre is coiled : $\leq 0.05 \text{ dB at } 1550 \text{ nm}$
with 100 turns on $60 \pm 1.0 \text{ mm}$ diameter : $\leq 0.1 \text{ dB at } 1625 \text{ nm}$
mandrel
- b) Change in attenuation when fibre is coiled : $\leq 0.5 \text{ dB at } 1550 \text{ nm}$
with 1 turn around $32 \pm 0.5 \text{ mm}$ diameter : $\leq 1.0 \text{ dB at } 1625 \text{ nm}$
mandrel

- c) Change in attenuation when fibre is coiled : ≤ 0.05 dB at 1310nm
with 100 turns on 50 ± 0.5 mm diameter
mandrel.

1.4.6 Fibre Curl : ≥ 4 meters radius of
(Test method as per IEC 60793-1-34) curvature

1.5 Material Properties:

1.5.1 Fibre Materials:

- a) The substances of which fibres are made : To be indicated by the
manufacturer.

b) Protective material requirement:

- i) The physical and chemical properties : It shall meet the requirement
of the material used for the fibre primary of fibre stripping force as per
coating and for single jacket fibre. clause No. 1.4.2

- ii) The best way of removing protective : To be indicated by the
coating material. Manufacturer.

- c) Group refractive Index of fibre : To be indicated by the
manufacturer.

Note: The manufacturer shall indicate the variation in group refractive index of fibre
during bulk production

- d) Fibre materials shall be RoHS (Restriction of Hazardous Substance)
complied.

1.6 Environmental Characteristic of Fibre:

1.6.1 Operating Temperature

(Test Method IEC – 60793 – 1 - 52)

Temperature Dependence of Attenuation : - 60°C to +85°C

Induced Attenuation at 1550nm & 1625 nm
at -60°C to +85° C : ≤ 0.05 dB/km

1.6.2 Temperature – Humidity Cycling

(Test method /EIA/TIA-455-73)

Induced Attenuation at 1550nm & 1625 nm
at -10°C to +85°C and 95% relative humidity. : ≤ 0.05 dB/km

1.6.3 Water Immersion 23°C

(Test method IEC- 60793 – 1- 53)

Induced Attenuation at 1550nm & 1625 nm
due to Water Immersion at $23 \pm 2^\circ\text{C}$: ≤ 0.05 dB/km

1.6.4 Accelerated Aging (Temperature) 85°C

(Test method IEC- 60793 – 1- 51)

Induced Attenuation at 1550 nm & 1625 nm
due to Temperature Aging at $85 \pm 2^\circ\text{C}$: ≤ 0.05dB/km

1.6.5 Retention of Coating Color

(Test method IEC- 60793 – 1- 51)

Coated Fibre shall show no discernible change : 30 days at 85°C with 95%
in colour when aged for relative humidity humidity and then 20 days in
85°C dry heat.

1.6.6. High Temperature and High Humidity (Damp Heat)

(Test Method IEC 60793-2-50)

Induced attenuation at 1550nm & 1625nm at
85°C and 85% Relative Humidity for 30 days : ≤ 0.05 dB/km

1.7 Colour Qualification and Primary coating Test:

1.7.1 Colour Qualification Test:

a) MEK Rub Test (Methyle Ethyl Ketone):

To be tested by using soaked (Solvent) tissue paper for ten strokes unidirectional on 10 cm length of fibre. No colour traces shall be observed on the tissue paper after testing.

b) Water immersion Test (Type Test):

To be tested for coloured fibre for 30 days. After the test Colour qualification, attenuation measurement & stripability test are to be taken.

1.7.2 Primary coating Test (Type Test):

a) Fourier Transform Infrared Spectroscopy (FTIR) Test:

To be tested to check the curing level of coating on the surface of natural fibre. The curing level shall be better than 90%.

b) Adhesion Test:

To be tested by using soaked (Solvent) tissue paper for ten strokes unidirectional on 10 cm length of fibre. No coating shall be observed on the tissue paper after testing.

SECTION – I
(TYPE –II)

GENERIC REQUIREMENTS FOR SINGLE MODE OPTICAL FIBRE

(As per ITU-T Rec. G. 655)

1.0 Non-zero Dispersion shifted Optical Fibre used in manufacturing optical fibre cables shall be as per ITU-T Rec. G 655. The detailed specifications of optical fibres are mentioned below.

1.1 Type of fibre : NZDS Single Mode Optical Fibre optimized for use in 1550nm window conforming to ITU-T Rec. G. 655.

1.2 Geometrical Characteristics:

1.2.1 Nominal MFD at 1550nm : $9.6 \pm 0.4 \mu\text{m}$

1.2.2 Cladding diameter : $125\mu\text{m} \pm 0.7 \mu\text{m}$

1.2.3 Cladding Non-circularity : $\leq 0.8\%$

1.2.4 Core Clad concentricity error : $\leq 0.5 \mu\text{m}$

1.2.5 Diameter over primary coated : $242 \mu\text{m} \pm 5 \mu\text{m}$
with double UV cured acrylate

Note: The thickness of colour coating may be over and above the values specified above if the manufacturer adopts separate UV cured colouring process to colour the uncoloured fibres, other than the on line integrated colouring process (of secondary layer of primary coating) of the fibres during fibre manufacturing.

1.2.6 Coloured fibre coating diameter : $252 \pm 10 \mu\text{m}$

1.2.7 Coating / Cladding Concentricity : $\leq 12 \mu\text{m}$

1.3 Transmission Characteristics:

1.3.1 Attenuation

a) Fibre attenuation before cabling

- i. 1525 to 1565 nm : $\leq 0.22 \text{ dB / Km.}$
- ii. 1565 to 1625 nm : $\leq 0.24 \text{ dB / Km}$
- iii. 1550 nm : $\leq 0.21 \text{ dB / Km}$
- iv. 1625 nm : $\leq 0.23 \text{ dB / Km}$

b) Fibre attenuation after cabling

- i. 1550 nm : $\leq 0.23 \text{ dB / Km.}$
- ii. 1625 nm : $\leq 0.25 \text{ dB / Km}$

Note:

1. Sudden irregularity in attenuation at 1550 nm shall be $\leq 0.05\text{dB}$.
2. The Spectral attenuation shall be measured on un-cabled fibre in the 1250 nm–1625 nm band at an interval of 10nm and the test results shall be submitted
3. Fibre Attenuation after cabling may be checked during approval testing of respective GR of Cable.

1.3.2 Cable Cut off wavelength λ_{cc} : 1450nm Max.

1.3.3 Chromatic Dispersion

a) Chromatic Dispersion Coefficient in 1530-1565 nm band:

- i) λ_{\min} & λ_{\max} : 1530 nm & 1565 nm
- ii) Minimum Value of D_{\min} : 1.0ps/nm. Km
- iii) Maximum Value of D_{\max} : 10.0 ps/nm. Km
- iv) $D_{\max} - D_{\min}$: $\leq 5.0 \text{ ps/nm.Km}$
- v) Sign : Positive

b) Chromatic Dispersion Coefficient in 1565 -1625 nm band:

- | | | |
|--|---|-------------------|
| i) λ_{\min} & λ_{\max} | : | 1565 nm & 1625 nm |
| ii) Minimum Value of D_{\min} | : | 4.0 ps/nm. Km |
| iii) Maximum Value of D_{\max} | : | 14.0 ps/nm. Km |
| iv) Sign | : | Positive |

Note: The Chromatic Dispersion Coefficient values in 1565 -1625 nm band stated in (b) above shall be reviewed as and when ITU-T approves the values and makes it final.

1.3.4 Polarization mode dispersion

- | | | |
|---------------------------------------|---|---|
| i) Un-cabled fibre (Individual Fibre) | : | $\leq 0.15 \text{ ps}/\sqrt{\text{km}}$ |
| ii) Cabled Fibre | : | $\leq 0.2 \text{ ps}/\sqrt{\text{km}}$ |
| iii) Link design value of PMD | : | $\leq 0.1 \text{ ps}/\sqrt{\text{km}}$ |

Note: The link PMD value shall be calculated as per the guide lines issued vide Appendix- I of ITU-T Rec. G.655 C (11/2009) and as per IEC 60794-3 Ed. 3. Optical Fibre cables- Part 3 Sectional Specification-Outdoor and subsequent revisions, if any. This is to be calculated on minimum 40 cable sections in 400 Km link.

- | | | |
|----------------------------------|---|--|
| 1.3.5 Dispersion Slope at 1550nm | : | $\leq 0.09 \text{ ps}/(\text{nm}^2.\text{Km})$ |
|----------------------------------|---|--|

1.4 Mechanical Characteristics:

- | | | |
|---|---|-----|
| 1.4.1 Proof test for minimum strain level | : | 1 % |
|---|---|-----|
- (Test method IEC- 60793 - 1 - 30)

- 1.4.2 Stripability force to remove primary coating of the Un-aged and Aged fibre (Water aged and Damp heat aged): (Test method IEC- 60793 - 1 - 32)

- | | | |
|------------------------|---|-------------------------------|
| a) Peak strip force | : | $1 \leq F \leq 8.9 \text{ N}$ |
| b) Average strip force | : | $1 \leq F \leq 5 \text{ N}$ |

Note: The force required to remove 30 mm \pm 3 mm of the fibre coating shall not exceed 8.9 N and shall not be less than 1N.

1.4.3 Dynamic Tensile Strength:

(Test method IEC- 60793 - 1 - 31)

- | | | |
|--------------------------|---|----------------------------|
| a) Un-aged | : | ≥ 550 KPSI (3.80 GPa) |
| b) Aged (Damp heat aged) | : | ≥ 440 KPSI (3.00 GPa) |

1.4.4 Dynamic Fatigue

(Test method IEC- 60793 - 1 - 33)

- | | | |
|--------------------------|---|-----------|
| a) Un-aged | : | ≥ 20 |
| b) Aged (Damp heat aged) | : | ≥ 20 |

1.4.5 Fibre Macro bend

(Test method FOTP – 62/ IEC- 60793 -1 –47)

- | | | |
|---|---|--------------------------|
| a) Change in attenuation when fibre is | : | ≤ 0.05 dB at 1550nm |
| coiled with 100 turns on 60 ± 1.0 mm | : | ≤ 0.1 dB at 1625nm |
| diameter mandrel | | |
| b) Change in attenuation when fibre is | : | ≤ 0.5 dB at 1550nm |
| coiled with 1 turn around 32 ± 0.5 mm | : | ≤ 0.5 dB at 1625nm |
| diameter mandrel | | |

1.4.6 Fibre Curl

(Test method as per IEC 60793-1-34)

≥ 4 meters radius of curvature

1.5 Material Properties

1.5.1 Fibre Materials:

- | | |
|---|---|
| a) The substances of which the fibres are made: | To be indicated by the manufacturer |
| b) Protective material requirement: | |
| i) The physical and chemical properties of the material used for the fibre primary coating and for single jacket fibre. | It shall meet the requirement of fibre coating stripping force as per cl. No. 1.4.2 |

- ii) The best way of removing protective coating material. : To be indicated by the manufacturer
- c) Group refractive Index of fibre : To be indicated by the manufacturer

Note: The manufacturer shall indicate the variation in group refractive index of fibre during bulk production.

- d) Fibre materials shall be RoHS (Restriction of Hazardous Substance) complied.

1.6 Environmental Characteristic of Fibre:

1.6.1 Operating Temperature

(Test Method IEC – 60793 – 1 - 52)

- Temperature Dependence of Attenuation : - 60°C to +85°C
- Induced Attenuation at 1550nm and 1625 nm : ≤ 0.05 dB/km
- at -60°C to +85°C

1.6.2 Temperature – Humidity Cycling

(Test method EIA/TIA-455-73)

- Induced Attenuation at 1550nm and 1625 nm : ≤ 0.05 dB/km
- at -10°C to +85°C and 95% relative humidity.

1.6.3 Water Immersion 23°C

(Test method IEC- 60793 – 1 – 53)

- Induced Attenuation at 1550 nm and 1625 nm
- due to Water Immersion at $23 \pm 2^\circ\text{C}$: ≤ 0.05 dB/km

1.6.4 Accelerated Aging (Temperature) 85°C

(Test method IEC- 60793 – 1 – 51)

- Induced Attenuation at 1550 nm and 1625 nm
- due to Temperature Aging at $85 \pm 2^\circ\text{C}$: ≤ 0.05 dB/km

1.6.5 Retention of Coating Color : 30 days at 85°C with
(Test method IEC- 60793 – 1 – 51) 95% humidity & then 20
Coated Fibre shall show no discernible change days in 85°C dry heat
in color when aged for relative humidity

1.6.6. High Temperature and High Humidity (Damp Heat)
(Test Method IEC 60793-2-50)

Induced attenuation at 1550nm & 1625nm at 85°C
and 85% Relative Humidity for 30 days : ≤ 0.05 dB/km

1.7 Colour Qualification and Primary Coating Test:

1.7.1 Colour Qualification Test:

a) MEK Rub Test (Methyle Ethyl Ketone):

To be tested by using soaked (Solvent) tissue paper for ten strokes unidirectional on 10 cm length of fibre. No colour traces shall be observed on the tissue paper after testing.

b) Water immersion Test (Type Test) :

To be tested for coloured fibre for 30 days. After the test Colour qualification, Attenuation measurement & Stripability test are to be taken.

1.7.2 Primary coating Test (Type Test):

a) Fourier Transform Infrared Spectroscopy (FTIR) Test:

To be tested to check the curing level of coating on the surface of natural fibre. The curing level shall be better than 90%.

b) Adhesion Test:

To be tested by using soaked (Solvent) tissue paper for ten strokes unidirectional on 10 cm length of fibre. No coating shall be observed on the tissue paper after testing.