

OIL INDIA LIMITED
(A Govt. of India Enterprise)
Udyan Vihar, Narengi, Guwahati,
Assam

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Tender No. & Date : GOS6395L15/2K 24.02.2015

Bid Security Amount : INR 0.00 OR USD 0.00
(or equivalent Amount in any currency)

Bidding Type : Single Bid (Composite Bid)

Bid Closing On : 26.03.2015 at 13:00 hrs. (IST)
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Performance Guarantee : Not Applicable

OIL INDIA LIMITED invites Limited tenders for items detailed below:

Item No./ Mat. Code	Material Description	Quantity	UOM
10 93030010	<p>Optical Fiber Cable Single mode 24F Optical Fiber Cable</p> <p>Single Mode, Step Index Optical Fibre cable with 24 Fibre counts; Multi Grad; Non-Metallic; Composite; out of which 6 fibre counts are Non-Zero Dispersion Shifted (NZ-DSF) type as per ITU-G.655 and 18 fibre counts are Non-Dispersion Shifted Fibre (NDSF) as per ITU-G.652D specifications. Cable is to be laid through pre lubricated HDPE duct by blowing or pulling. The NZDS fibre should conform to GR/OFC-7/01. AUG.2001 and its subsequent amendments. Qty. per drum of OFC: 1KM Good quality, weather resistant drums to be used for coiling the cable.</p> <p>The cable shall use the raw materials approved as per the Telecommunication Engineering Center(TCE) specification GR No: G/ORM-01/02 MAR.99 and its subsequent amendments.</p>	10	KM

Note description for item no./nos. : 10

NOTE:

1. Optical Fibre (OF) Cable:

1.1 General(Bidders to provide Clause by Clause compliance statement).

1.1.1 The non metallic duct OF Cable to be supplied shall be 24 fibre count step index Single Mode fibre, out of which 6 fibre counts shall be Non-Zero Dispersion Shifted (NZ-DSF) type as per ITU G.655 specification and remaining 18 fibre counts shall be Non Dispersion Shifted fibre (NDSF) as per ITU G.652D specification.

1.1.2 The metal free duct OF Cable shall be suitable for underground installation in permanently lubricated HDPE duct buried at an approximate depth of 1.65 meters from the ground level and be required to cross various roads, railways, canals, small rivers, marshy areas etc through appropriate casings. The optical fibre cable shall be low weight , small volume and high flexibility for laying in a permanently lubricated HDPE duct using blowing techniques. The cable shall have build- in protection against termites and rodents.

1.1.3 The life of the cables should be more than 25 yrs.

1.1.4. The metal free duct OF cable to be supplied is 2 Km in length per single drum without any joint/splice, with tolerance of $\pm 0.5\%$. the bidders shall provide the data on weight of OF cable in single drum and also per

Single mode 24F Optical Fiber Cable Km basis.

1.2 Cable Construction Details:

1.2.1 The inner strength member shall be Fiber Reinforced Plastic (FRP) rod , non metallic member with minimum diameter of 2mm. The strength member shall provide strength and adequate flexibility of the cable and shall have anti buckling property. This shall also keep the fibre strain within the permissible value.

1.2.2 Around the strength member, 4 Nos of loose tubes made of Polyamide/PBTP or other thermoplastic material are to be symmetrically placed using helical or reverse lay technique with 6 nos of primary coated fibres in each tube. Two polyethylene dummy fillers tubes are to be added so that the cable gets packed into near round configuration .The tubes are to be filled up moisture resistant thixotropic jelly, which should be compatible with the coated fibres in the tube. The colour of the loose tubes containing fibres shall be of 4 different distinct colours. The 6 fibre counts of G. 655 type shall be housed in a single tube, rest of 18 fibres to be distributed equally in remaining 3(three) tubes. The loose tube containing G.655 type fibre shall be Red Colour and other three tubes containing G.652 type fibres shall be Yellow, Green and Brown Colour. The tube assembly and the core shall be flooded with the moisture resistant jelly.

1.2.3 Aramid yarn strength members distributed equally over the periphery of loose tube should be provided along with the solid FRP strength member for peripheral strength.

1.2.4 The main cable core containing fibres shall be wrapped with a water blocking polyester of foil / tape of minimum 0.15 thickness. The nylon/polyester binder thread shall be used to hold the tape.

1.2.5 The cable core containing fibres and core assembly shall be protected by flooding water resistant jelly having non-hygroscopic dielectric compound.

1.2.6 The loose tube wrapped with water resistant tapes are to be enclosed by a weather resistant inner black coloured HDPE sheath of minimum 1.8 mm thickness. The material of the HDPE shall be UV stabilized.

1.2.7 An outer covering jacket of termite and rodent resistant Nylon -12 material of orange colour, free from pin holes, scratches and other defects and with a thickness of 0.6 ± 0.1 mm and overall diameter(nominal) of 12.0 ± 0.5 mm shall be provided for the non metallic duct.

1.2.8 Suitable rip cord (s) shall be provided which shall be used to open the HDPE sheath of the cables. The rip cord (s) shall be properly waxed to avoid wicking action and shall not work as water carrier.

1.2.9 The fibre in a single cable drum length shall NOT have any joints.

1.2.10 The filling compound used in loose tube and in the cable core shall be compatible to fibre, secondary protection of fibre, core wrapping etc. The fibre movement shall not be constrained by stickiness and shall be easily removable for splicing.

1.2.11 The maximum cable diameter shall not exceed 14 mm for non-metallic duct OF Cable. The finished cable diameter shall be within ± 0.5 mm from the defined cable diameter.

1.2.12 The bidder shall submit a core sectional diagram of the cables with dimensional and material details of each layer including the fibre refractive index, index profile and percentage of excess fibre length in the cable jacket length along with the Technical Bid.

1.3 Material

1.3.1 The material used in the manufacturing the optical fibre cable shall be non-toxic and dermatologically safe in its lifetime.

1.3.2 The cable shall use the raw materials as per the Telecommunication Engineering Centre (TEC) specification GR No.: TEC/GR/TX/ORM-01/04/SEP 2009 and its subsequent amendments (if any).

1.3.3 The material used in optical fibre cable must not evolve hydrogen, which will affect the fibre loss.

1.3.4 The raw material used for manufacturing the cable shall be clearly indicated by the bidder.

1.3.5 The fiber must be totally backward compatible with OIL's existing fiber types (G.652 and G.655) and there

shall be no operational impact, such as, (but not limited to) splicing. This shall be clearly mentioned in the bid. Successful Bidder shall also provide a sample 2 mtr fiber section for testing in OIL's network and acceptance.

1.3 Marking

The markings on the outer surface of the cable (i.e. orange nylon jacket for OF cable) shall be indelible and durable and shall stand out in contrast to the colour of the background surface.

The following legend marking shall be adopted:

- a) OIL INDIA LIMITED with logo
- b) Total Fibre Count : 24
- c) Type of fibre 6Nos. G .655 (in Red loose tube)
: 18 Nos. G.652D (in Yellow, Brown, Green loose tube)
- d) Manufacturing year & date : This shall be interleaved with length marking in every meter with an accuracy of +0.5% of the actual measured length.

1.5 Mechanical & Environmental Characteristics:

As per relevant TEC Specs

1.6 Geometrical Characteristic of Optical Fibre :

As per relevant TEC Specs

1.7 Mechanical Characteristics of OF :As per relevant TEC Specs 1.8 Transmission Characteristic of Fibre: As per relevant TEC Specs

1.9 Pre-delivery Factory Test :

19.1 The following tests shall be conducted by OIL engineer(s) at the premises of the manufacturing unit where the supplied cable is manufactured for acceptance of the product prior to delivery, if found necessary:

a) Mechanical

- i) Visual inspection
- ii) Test for moisture barrier
- iii) Abrasion resistance test
- iv) Crush test
- v) Impact test
- vi) Repeated test
- vii) Cable bend test
- viii) Torsion test
- ix) Kink test
- x) Cable bend test
- xi) Temperature cycling
- xii) Water penetration test
- xiii) Tensile strength

b) Test on transmission characteristics:

- i) Attenuation test
- ii) Mode field diameter
- iii) Cut-off wave length
- iv) Polarised mode dispersion
- v) Attenuation under bending

1.10.2 OIOL at its own discretion will delete or include certain Telecommunication Engineering Centre (TEC) recommended test(s) if the cable is manufactured under strict quality assurance programme and raw materials are procured from reputed sources. All the tests will be conducted as per relevant IEC and TEC guidelines.

1.10.3 It shall be explicitly understood that under no circumstances shall any approval of OIL or its representative after conduction of factory test relieve the supplier of its responsibility of reliable performance of the supplied material.

1.10 Fibre Identification Colour

The coatings shall be in various distinct colours in order to facilitate fibre identification. Fibres colours shall correspond to IEC publication 793-2 and 304. The colours shall correspond reasonably with standard colours and

shall readily be identifiable and shall be durable. The colours used should have fast colour properties and should not fade during the lifetime of cable. The coating and colour shall not react with the surrounding jelly. The supplier shall take prior approval from OIL for the colour scheme for fibre identification before commencement of manufacture of OFC.

Colour Scheme of the 6 fibres per loose tube:

Blue
Orange
Green
Brown
Slate/gray
Yellow

2. Packaging:

2.1 The cable shall be rolled in wooden drums with rugged construction to withstand multiple transshipment and handling as well as storage in open area under adverse weather conditions. The drum (confirming to GR No. G/CBD-01/02 NOV. 94 and subsequent amendments) should be marked to identify the direction of rotation of the drum. Both ends of the cable should be kept inside the drums.

2.2 Packaging of cable shall be done in a manner in such a way that it will allow 2 meter length of cable at each end to be pulled out for performing various tests. The end shall be protected by heat shrinkable sleeves.

2.3 The cable drums shall have adequate protection from rain, dust, insect and rodents.

2.4 The cable drum shall be marked with an arrow to indicate the coiling sense.

2.6 The cable drum and crate shall be marked with the following:

Consignees Name	: Oil India Limited
Site Name	: #####.
Material	: #####.
Quantity	: #####.
Overall weight	: #####.
Batch Name	: #####.
Date of Manufacturing	: #####
Manufactured and supplied by	: #####..

2.7 A packing list containing details of cable and test certificate shall accompany each cable drum, secured by abrasion and waterproof jacket fixed to the drum in a strategic location.

3. Documents

The bidder shall submit 2 copies of technical documents in English original bound volume containing comprehensive information on the following pertaining to the supplied materials:

- i) Fibre cable construction detail
- ii) Fibre preparation for splicing
- iii) Test and measurement procedure and equipment at bidder's site
- iv) Fibre splicing types and procedures
- v) Safety in handling of fibre cable
- vi) Various types of connector and practical method of connectors
- vii) Jointing and termination box detail

4. Inspection

If decided by OIL, the bidder shall accord facility for inspection of all the material at his/OEM's manufacturing site by engineer(s) from OIL India Ltd. during manufacturing process and before commencement of delivery. All the tests mentioned in the clause ' Factory Test' for each item will be carried out during the inspection. All travelling, boarding and other expenditure of OIL's engineer towards inspection, will be borne by OIL.

5. Clause by clause compliance statement shall be provided for all clauses from 1 to 4 (including all sub clauses)

Special Notes : 1. Bidder shall submit catalogue / brochure / leaflet providing technical details of the materials offered along with their quotation.

2. Bidders other than manufacturer must submit valid authorized dealership/authorization

certificate from manufacturer along with their offer.

3. To evaluate the inter-se ranking of the offers, Assam Entry Tax on purchase value will be loaded as per prevailing government of Assam Guidelines as applicable on bid closing date. Bidders may check this With the appropriate authority, while submitting their bids.

4. Bidder should quote transportation charges on actual separately if not included in basic price. Transportation charges have to be quoted for transportation by mode as below:-

i) For consignments weighing around 100 Kgs, Actual transportation charge to be quoted for transportation by courier service (Air/Road).

ii) For consignment weighing more than the weight mentioned in Sl.No.(i), actual transportation cost shall be quoted for transportation by Road transport.

5. Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set off against any claim of Oil India Limited (or such other person or person contracting through Oil India Limited) for payment of a sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).

6. Any statutory variation (increase / decrease)in the rate of excise duty / sales tax/Customs Duty or any statutory levy after the closing date of tenders / revised priced bid, as the case may be, but within the contractual delivery /completion period will be to the account of OIL subject to documentary evidence. However, any increase in excise duty /sales tax / Customs Duty or any statutory levy after the expiry of the scheduled date of delivery shall be to the supplier's account.

7. Please confirm acceptance of NIT payment terms.

8. Terms and conditions applicable to this tender is enclosed vide Annexure II to VI

9. Bidders must keep their offer valid for minimum 60 days from Date of Bid Closing failing which their offer will be straightway rejected.

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Tender issued to following parties only:

Slno	V_Code	Vendor Name	City/Country
1	203548	KEC INTERNATIONAL LIMITED	KOLKATA
2	207126	TERACOM LIMITED	NOIDA
3	208796	FINOLEX CABLES LIMITED	GUWAHATI
4	209386	STERLITE TECHNOLOGIES	NOIDA
5	209387	BIRLA ERICSSON OPTICAL LIMITED	KOLKATA
6	209388	AKSH OPTIFIBRE LIMITED	NEW DELHI