



Northern Coalfields Limited  
(A Govt. of India Enterprise)  
A Subsidiary of Coal India Ltd)  
Materials Management Department  
P.O.Singrauli Colliery, Dist.Singrauli(MP) 486889  
Ph: 07805-266606/256261 Fax: 266388/266640  
Website : [www.nclcil.in](http://www.nclcil.in) / [www.tenders.gov.in](http://www.tenders.gov.in)

Ref: No. 63616096/315A1081

Date : 16.11.2016

**FORMAL ORDER**

To

<b>M/s. Skytone Electricals (India) Ltd.</b> <b>42-43, Industrial Area, N.I.T.</b> <b>Faridabad-121001 (Haryana)</b>	<u>Vendor Code – S0280</u> Contact No. 0129-4099800 <u>Fax No 0129-2232456</u> PCC: By Regd. Post
--	--

Dear Sirs,

**Sub:** Formal Order for supply of Trailing Cables

- Ref:**
- 1.Our Tender Enquiry No. NCL/SGR/MMD/SecI/Trailing Cable/ 315A1081 /132 dated 29-12-2015, opened on 05.02.2016 .
  2. Your Bid ID. 84552 submitted on dated 02.02.2016 against Tender ID 2016\_NCL\_29783\_1 and all subsequent clarification/confirmation.
  3. Our Letter No:- 315A1081/1262 dated 19/20.07.2016
  4. Your Letter No:- SEIL/T7548/NCL/468 dated 08.08.2016
  5. Your mail dated 16.11.2016

With reference to the above, we hereby place our formal Supply Order on you for supply of trailing Cable which shall be governed by the specifications, prices, terms and conditions mentioned hereunder and also unless otherwise specified as per “General Terms and Conditions of Supply of Stores “ of the NIT :-

Sl No.	Item Description	Material Code	Quantity ( In Mtr)	Basic Price (Rs per unit)	Extended value (in Rs)
1	Trailing Cable 6.6 KV, Unarmed, 3x120 +2 x 120/2 +1 x 35 sq mm	94099965049	600	4080.00	24,48,000.00
2	Trailing Cable 6.6 KV, Unarmed, 3x35 +2 x 35/2 +1 x 16 sq mm	94099966067	300	1610.00	4,83,000.00
3	Trailing Cable 6.6 KV, Unarmed, 3x150 +2 x 150/2 +1 x 35 sq mm	94099965052	407	4821.00	19,62,147.00

Total Rs. 48,93,147.00

(Rs. Forty Eight Lakhs Ninety Three Thousands One Hundred Forty Seven only)

**(Detailed Technical Specifications as per Annexure – I , enclosed)**

**TERMS & CONDITIONS**

**1. BASIS OF PRICE :** The above Prices are inclusive of Packing, Forwarding, Freight and Transit Risk insurance charges etc. on FOR Destination basis and shall remain firm till execution of Supply Order.

**2. Excise Duty :** Excise Duty shall be paid extra at actuals against documentary evidence at the legally applicable rate at the time of supply, which is presently applicable @ 12.5%.

**For availing CENVAT Credit by NCL, you shall submit copy of CENVATABLE EXCISE Invoice as per rule 11 of CENTRAL EXCISE Rule 2002 at the time of supply of material along with the final bill(s) indicating therein Northern Coalfields Limited's ECC No, Range, Division and Commissionerate along with other details as detailed below:**

Clean Energy Cess Regn. No./ Excise Regn.	Range	Division	Commissionerate
AABCN4884HEM011	Waidhan	Satna	Bhopal

**You have to submit your auditor's certificate along with the bill confirming that refund/ credit if any obtained against Excise Duty has been/ shall be passed on to Northern Coalfields Ltd**

**3. Sales tax:** Sale tax shall be paid extra at actuals, as legally leviable at the time of supply which is presently applicable @ 2% against Form "C"

**4. ENTRY TAX:** Entry tax shall be paid extra at actuals, as legally leviable, to the State Govt. authority directly by the Paying Authority for the supplies to be made at Central Store Jayant (M.P.) which is presently applicable @ 1 %. Entry Tax is not applicable for supplies to Bina Project (UP) for which Way Bill, if required should be obtained by the firm from the consignee i.e. Depot officer, Bina Project.

**5. DELIVERY PERIOD:** The supply should commence within 1 (One) month from the date receipt of this Supply Order and completed within 6(six) months. Date of receipt of Stores at consignee premises will be taken as the date of delivery. No materials should be supplied beyond the specified delivery period unless amendment for extension of delivery period is obtained from the purchaser i.e. NCL. However, early delivery is preferred.

**6. CONSIGNEE:**

- i) The Depot Officer, Central Stores, Northern Coalfields Limited, P.O. Jayant, Dist. Singrauli – 486890 (MP).
- ii) The Depot Officer, Bina Project, Northern Coalfields Limited, Sonebhadra. U.P.

**7. SECURITY DEPOSIT:** You are advised to submit security money for Rs 5,64,125.00 (Rupees Five lakhs Sixty Four Thousand One Hundred and Twenty Five only) within 15 days from the date of receipt of Supply Order. The security deposit should be submitted in the form of Bank Demand Draft payable at SBI, Morwa Branch (Code 3767), Singrauli, MP /or at any bank located at Morwa, Singrauli, MP / or in the form of Bank Guarantee drawn on any nationalized bank / Scheduled Bank in a prescribed Format (i.e. as per Annexure J of NIT) The validity of BG for security deposit will be for a period of three months beyond the expiry of delivery period. If you fail to deposit the security deposit within 15 (fifteen) days

from the date of receipt of order, the order shall be cancelled and the case shall be processed to order elsewhere and your performance shall be kept recorded for future dealings. The security deposit shall be refunded within thirty days of satisfactory execution of the contract on your request. For contractual failure, the security money shall be forfeited.

**8. Performance Bank Guarantee** : The Performance Bank Guarantee is to be submitted by you for Rs 5,64,125.00 (Rupees Five lakhs Sixty Four Thousand One Hundred and Twenty Five only) to cover both satisfactory performance and warranty. The performance guarantee will be taken in the form of a Bank Guarantee in prescribed format as per Annexure-K of NIT valid for 18 months from the date of receipt and acceptance of the materials at consignee's end and the same shall be either released, if no claim is pending or extended thereafter, as deemed fit. In case, the security money has been submitted in the form of Bank Guarantee, the same may be converted in to performance bank guarantee provided the validity is 18 months from the date of receipt and acceptance of materials at site.

**9. PAYMENT TERMS**: 100% payment shall be released within 21 days of receipt and acceptance of materials at site or submission of bills complete in all respect, whichever is later. The payment will be made through Electronic Fund Transfer (EFT) or e-payment after receipt and acceptance of Performance Bank Guarantee.

**10. PAYING AUTHORITY** :

- a) The Area Finance Manager(HQ), Northern Coalfields Limited, P.O. Singrauli, Dist. Singrauli (MP - 486889).
- b) The Area Finance Manager, Bina Project, Northern Coalfields Limited, P.O. Singrauli, Dist. Singrauli (MP - 486889).

**11. BANKER'S NAME** : CANARA BANK, 8-A, MID CORPORATE, NEHRU GROUND, FARIDABAD A/c No. 0330261010439, IFSC Code – CNRB0005059, Type of A/c – Cash credit

**12. SUBMISSION OF BILLS**: 100% bill with taxes & duties stamped and pre-receipted shall be submitted in triplicate to the Paying Authority with the following documents :--

- (i) Receipted Challan
- (ii) Guarantee/Warranty Certificate
- (iii) Maker's Test-cum-Inspection Certificate
- (iv) Any other document required as per order duly authenticated.

A set of above documents should also be submitted to the consignee.

**13. PACKING** : Consignment should be securely packed & marked as per standard Trade practices/BIS Norms to withstand the rigors of transport to prevent any loss/damage or pilferage in transit and ensure safe arrival at destination. Packing of materials should conform to the requirement of Carriers.

**14. MODE OF DESPATCH & ROAD PERMIT** : By Road transport only on Door Delivery basis at your risk and cost. Safe arrival of material at consignee's end will be responsibility of the supplier. In MP no road permit is required as per present rules as NCL is a PSU.

**15. LOWEST PRICE CERTIFICATE:** You shall submit a certificate on the body of each bill stating that “the price charged by you against this contract is the lowest and is the same as applicable to other Government departments / Undertakings/CIL and its subsidiaries./ Other Organisations and are not higher than the rates quoted/ Prices charged by us for same items to other customers”

**16. INSPECTION**

- i) Materials under supply shall be of the best quality and workmanship and shall be in accordance with the specification laid down in the supply order.
- ii) Final inspection :- There shall be no pre dispatch inspection of ordered cables however, final inspection shall be carried out by the authorized representative of GM(EXCV) /NCL HQ after receipt of materials at consignee’s end. The stores found defective or not in accordance with the supply order specification will be rejected and intimated for free replacement within 30 (thirty) days from the date of intimation.

**17. LIQUIDATED DAMAGE CLAUSE:** In the event of failure to deliver or dispatch the stores within the stipulated date/period in accordance with the specifications mentioned in the supply order and in the event of breach of any of the terms & conditions mentioned in the supply order, NCL should have the right :

- a. To recover from the successful tenderer as agreed liquidated damages, a sum of 0.5% (half percent) of the price of any stores which the successful tenderer has not been able to supply as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10% (ten percent). Where felt necessary the limit of 10 % can be increased to 15 % at the sole discretion of GM(MM)/NCL HQ.
- b. Or to purchase elsewhere after due notice to the successful tenderer on the account and at the risk of the defaulting supplier the stores not supplied or others of similar description without canceling the supply order in respect of the consignment not yet due for supply or
- c. To cancel the supply order or a portion thereof and if so desired to purchase the stores at the risk and cost of the defaulting supplier and also
- d. To extend the period of delivery with or without penalty as may be considered fit and proper the penalty, if imposed shall not be more than agreed liquidated damage referred to in clause(a) above,
- e. To forfeit the security deposit fully or partly
- f. Whenever under this contract, a sum of money is recoverable from and payable to the suppliers, NCL shall be entitled to recover such sum by appropriating in part or in whole for deducting any sum or at any time thereafter may become due to the successful tenderer in this or any contract should this sum be not sufficient to cover the full amount recoverable, the successful tenderer shall pay NCL on demand the remaining balance. The supplier shall not be entitled to any gain on any such purchase.

**18. RISK PURCHASE:** In the event of failure of supplier to deliver or dispatch the stores within the stipulated date / period of the supply order, or in the event of breach of any of the terms and conditions mentioned in the supply order, Northern Coalfields Limited have the right to purchase the stores from elsewhere after due notice to the defaulting supplier at the risk and cost of the defaulting supplier. It is mentioned clearly that in the event of failure of the supplier as detailed above, the cost as per risk purchase exercise may be recovered from the bills against any other supplies pending at NCL and also in any other Subsidiary Company/Coal India Ltd.

**19. PRICE FALL CLAUSE:** The price charged for the stores supplied against this order by you shall in no event exceed the lowest price at which you sell or offer to sell the stores of identical description to any other organization during the period of contract.

If the supplier at any time during the period of contract reduces the sale price, sells or offers to sell such stores to any other organization at a price lower than the priced chargeable under this contract, the supplier shall forthwith notify such reduction of sale price to the undersigned and the price payable under the contract for stores supplied after the date of coming in force of such reduction in sale price shall stand correspondingly reduced.

**20. WARRANTY/GUARANTEE:**

The supplier shall give a warranty/guarantee for satisfactory performance of the supplied materials for a period of 12 months from the date of installation & commissioning or 18 months from the date of receipt and acceptance of material at consignee's end whichever is earlier. The supplier shall be responsible for any defect that may develop, under the conditions provided for by the contract and under proper use, arising from faulty materials, design, quality or workmanship and shall remedy such defect at his own cost when called upon to do so. If it becomes so necessary for the supplier to replace or renew any defective part, such replacement or renewal shall be made by the supplier 100% free of cost without any extra cost to Northern Coalfields Limited. The new goods should be supplied on FOR destination basis free of cost.

Warranty replacement should be completed within a reasonable period maximum within one month from the date of claim up to ultimate Consignee's end. All cases of warranty replacements will be decided on the basis of joint inspection of the failed goods held between the user's representative and the supplier's representative.

21. The supplier shall warrant that the item(s) supplied under this contract / supply order:

- (a) Is new, unused and or of current design not likely to be discontinued or become obsolete in near future.
- (b) Is in accordance with the Contract Specifications
- (c) Shall have no defects arising out of design, materials and workmanship.

22. Apart from the above terms & conditions, this Supply Order order will also be governed by the "General Terms & Conditions of Supply of Stores" enclosed with the NIT and all the terms & conditions of NIT as well as Provisions of CIL Purchase Manual unless otherwise specified in this Supply Order.

23. **IDENTIFICATION MARK** : Manufacturer's distinctive identification mark / symbol as also the part no. must be clearly embossed / punched / engraved on each and every item, as far as practicable, at a visible place, which is not subjected to normal wear and tear, for convenience of identification any time. Apart from this a tag may be attached to each part / item giving identification mark, part no. description. However, for higher precision items where embossing/engraving/punching is not possible, identification mark be put by Metal Marker.

24. **Jurisdiction of Court** : All disputes are subject to jurisdiction of "Singrauli Court" only.

The contract is concluded with this acceptance. You are requested to kindly acknowledge receipt and acceptance of order within 10 days from the date of issue of

order. In case, no reply is received within the above period, it will be presumed that the order has been accepted by you without any precondition.

**Encl.** Annexure – I (Technical specifications)

Yours faithfully,  
For and on behalf of Northern Coalfields Limited,

( Prateek Singh)  
Asst. Manager(X/MM)

(D Dhanabalan)  
Sr.Manager(MM)

**Copy to:**

1. CVO, NCL (HQ)
2. Sr. Officer (Sect.) to Dir (T/Oprns), NCL(HQ), Singrauli
2. GM(E&M)/GM(Stores)/GM(Fin)I/C-- NCL(HQ), Singrauli
3. GM(MM): CIL/ECL/BCCL/CCL/WCL/SECL/MCL
4. The Depot Officer, Central Stores, Northern Coalfields Limited, P.O. Jayant, Dist. Singrauli – 486890 (MP) .
5. The Depot Officer,Bina Project
6. The Area Finance Manager(HQ), Northern Coalfields Limited, P.O. Singrauli, Dist. Singrauli (MP - 486889).
7. The Area Finance Manager, Bina NCL.

This is issued against Sanction Order communicated by CM(MM), NCL HQ vide sanction Order no. NCL/Stores/MB 2014-15/Trailing Cable/540 dated 08.05.2014 and NCL/SGR/Stores/MB 2015-16/Trailing Cable/4784 dated 23.01.2015

BC No.:- NCL/HQ/C&B/Centralised/BC/Other Stores/2016-17/18 dated 10.11.2016 for Rs 56,41,243.65

SI No.	Name of the project	Allocation of Amount (In Rs)
1	Amlohri	559784.93
2	Nigahi	2102319.22
3	Khadia	1872720.00
4	Dudhichua	1106419.65
<b>TOTAL :</b>		<b>5641243.65</b>

FC No:- NCL/HQ/FC/2016-17/Other Stores/Centralised/17 dated 10.11.2016 for Rs 56,41,243.65

**ANNEXURE - I****A. TECHNICAL SPECIFICATIONS****1. Drum Length:**

Sl. No	Description of Item	No. of Drums x Length in Meter	
		Consignee Bina Project U.P.	Consignee Central Store, Jayant M.P.
1	Trailing Cable 6.6 KV, Unarmoured, 3x120 + 2x120/2 + 1x35 sq mm	2x 200= 400	1x200=200
2	Trailing Cable 6.6 KV, Unarmoured, 3x35 + 2x35/2 + 1x16 sq mm	--	1x300=300
3	Trailing Cable 6.6 KV, Unarmoured, 3x150 + 2x150/2 + 1x35 sq mm	1x200=200	1x207=207

**Drum length Tolerance** : A tolerance of +/- 2% on individual drum length (Cut length) shall be allowed on total order value.

**2. Technical specification****Size of Trailing Cable**

Sl.	Voltage	No. & Cross sectional area of each power core	No. & Cross sectional area of each earth core	No. & Cross sectional area of each pilot core
1	6.6 KV	3 x 120 Sq. mm	2 nos. x 120/2 Sq mm.	1 x 35 Sq mm.
2	6.6 KV	3 x 35 Sq. mm	2 nos. x 35/2 Sq mm.	1 x 16 Sq mm.
3	6.6 KV	3 x 150 Sq. mm	2 nos. x 150/2 Sq mm.	1 x 35 Sq mm.

**A. For item No. 1**

**6.6 K V, Unarmoured, 3 x 120 + 2 x 120/2 + 1 x 35 Sq mm,each cable length 200 mtr.**

**TRAILING CABLE OF 6.6 KV UN-EARTHED SYSTEM FOR HEMM WITHOUT CABLE REEL DRUM ARRANGEMENT.Heavy duty un-armoured flexible trailing cables for use in HEMM deployed in mines of NCL operating at Vo/V= 6.6 KV/6.6KV Unearthed System & confirming to the following specification:**

**A. The cable shall meet the requirement of Indian Electricity Rule 1956, amended till date.**

**B. The cable shall generally Confirm to IS: 14494/1998 with its latest revision, if any.**

**In support of this, the bidder shall have to submit, self-authenticated, valid (on the date of opening of tender) BIS license conforming to IS: 14494/1998 with its latest revision.**

**C. Conductors of the cable: - Circular Conductor consisting of thin annealed tinned copper wires.**

**D. Power Core: Three (3) Power cores, Cross sectional area of each power core-specified in clause "O" i.e. size of trailing cable."**

**(i) Power Core Screening : Each power core shall be screened with Semi conducting tape or a layer of extruded semi-conducting compound.**

**(ii) Power Core Insulation : Each of the three-power cores should be insulated with Elastomeric Insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).**

**(iii) Power Core Insulation Screen: - All the three power cores shall have individual insulation screening of non-metallic semi conducting compound in combination with non- magnetic, metallic screening i.e. each power core insulation shall also be screened individually with a braided metallic screen having conductance of not less than 25 % conductance of the power core and combined conductance of three screens shall not be less than the conductance of a 16 sq mm copper core to meet the requirement of I.E Rule 123.**

**E. Earth Core : Earth core shall be split up in two equal parts & laid up in interstices & the total area of these two earth cores shall be equal to the cross sectional area of the power core.**

**Earth Core Insulation : Each earth core shall be insulated with Elastomeric insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).**

**F. Pilot Core : Pilot core shall have cross section as specified in clause "O" i.e. "Size of Trailing Cable." & shall be laid up in interstices. Pilot Core Insulation:Pilot core shall be insulated with Elastomeric insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).**

**G. Identification of Cores : Core identifications shall be made by the use of colour tapes (Red, Yellow & Blue for Power core, Green for Earth core & Black for Pilot core). On these tapes cable manufacturers name , year of manufacturing & voltage grade of cable should be printed or embossed at suitable interval through out the length of cable.**

**H. Laying of Cores : Power cores should be laid up together with right hand lay. The two earth cores & one pilot core should be laid in the interstices of the cable. In order to obtain perfect circular shape of the cable suitable fillers of elastomer should be used, if necessary.**

**I. Suitable semi conducting non-metallic tape should be applied over the laid up cores.**

**J. Sheathing of laid up cores :- Sheathing should be of HD HOFr elastomeric compound (Material & type of sheath conforming to IS: 6380/84 need to be indicated). There shall be two sheaths, INNER SHEATH : applied over the laid up bonded cores. & other over this as OUTER SHEATH. Outer sheath should be Red / Orange coloured. Non-metallic Re-enforcing material of HR 90 shall be used between these two sheaths.**

**K. Manufacturer name, Year of manufacturing & voltage grade, cable, Identification should be indicated on the outer sheath at suitable interval through the length & the outer sheath.**



**L. The cable should be sequentially marked at each meter indicating the length from the starting end, starting with "000" and in ascending order progressively along the length at every meter with contrast colour. The cable should be reeled in such a fashion that both the starting and ending sequentially marked portion of the cable is visible to facilitate the inspection of sequential marking.**

**M. The cable shall be wound on a drum & packed. The end of the cable shall be sealed by means of Non-hygroscopic sealing material & shall carry the following information stenciled on the drum.**

**(i) Reference to standard.**

**(ii) Manufacturer's Name Or Trade Mark**

**(iii) Type of cable & Voltage Grade**

**(iv) Constructional detail of cable (No of cores, Nominal cross sectional area etc.)**

**(v) Length of cable on the drum.**

**(vi) Cable code**

**(vii) Direction of rotation of drum.**

**(viii) Year of manufacturing.**

**(ix) Purchase order No. & Date.**

**N. Drum Length Tolerance: +/- 2 % on individual drum length (Cut length).**

**O. Size of Trailing Cable:-a)No. & cross sectional area of each power core(3 nos.X120 sq.mm),b)No. & cross sectional area of each earth core(2 nos.X120/2 sq.mm),c)No. & cross sectional area of each pilot core(1 nos.X35 sq.mm)**

**B. For Item no. 2 .**

**6.6 K V, Unarmoured, 3 x 35 + 2 x 35/2 + 1 x 16 Sq mm,each cable length 300 mtr.**

**TRAILING CABLE OF 6.6 KV UN-EARTHED SYSTEM FOR HEMM WITHOUT CABLE REEL DRUM ARRANGEMENT.Heavy duty un-armoured flexible trailing cables for use in HEMM deployed in mines of NCL operating at Vo/V= 6.6 KV/6.6KV Unearthed System & confirming to the following specification:**

**A. The cable shall meet the requirement of Indian Electricity Rule 1956, amended till date.**

**B. The cable shall generally Confirm to IS: 14494/1998 with its latest revision, if any.**

**In support of this, the bidder shall have to submit, self-authenticated, valid (on the date of opening of tender) BIS license conforming to IS: 14494/1998 with its latest revision.**

**C. Conductors of the cable: - Circular Conductor consisting of thin annealed tinned copper wires.**

<p><b>D. Power Core: Three (3) Power cores, Cross sectional area of each power core-specified in clause "O" i.e. size of trailing cable."</b></p> <p><b>(i) Power Core Screening :</b> Each power core shall be screened with Semi conducting tape or a layer of extruded semi-conducting compound.</p> <p><b>(ii) Power Core Insulation :</b> Each of the three-power cores should be insulated with Elastomeric Insulation (Material &amp; type of insulation conforming to IS: 6380/84 need to be indicated).</p> <p><b>(iii) Power Core Insulation Screen:</b> - All the three power cores shall have individual insulation screening of non-metallic semi conducting compound in combination with non- magnetic, metallic screening i.e. each power core insulation shall also be screened individually with a braided metallic screen having conductance of not less than 25 % conductance of the power core and combined conductance of three screens shall not be less than the conductance of a 16 sq mm copper core to meet the requirement of I.E Rule 123.</p>
<p><b>E. Earth Core :</b> Earth core shall be split up in two equal parts &amp; laid up in interstices &amp; the total area of these two earth cores shall be equal to the cross sectional area of the power core.</p> <p><b>Earth Core Insulation :</b> Each earth core shall be insulated with Elastomeric insulation (Material &amp; type of insulation conforming to IS: 6380/84 need to be indicated).</p>
<p><b>F. Pilot Core :</b> Pilot core shall have cross section as specified in clause "O" i.e. "Size of Trailing Cable." &amp; shall be laid up in interstices. Pilot Core Insulation:Pilot core shall be insulated with Elastomeric insulation (Material &amp; type of insulation conforming to IS: 6380/84 need to be indicated).</p>
<p><b>G. Identification of Cores :</b> Core identifications shall be made by the use of colour tapes (Red, Yellow &amp; Blue for Power core, Green for Earth core &amp; Black for Pilot core). On these tapes cable manufacturers name , year of manufacturing &amp; voltage grade of cable should be printed or embossed at suitable interval through out the length of cable.</p>
<p><b>H. Laying of Cores :</b> Power cores should be laid up together with right hand lay. The two earth cores &amp; one pilot core should be laid in the interstices of the cable. In order to obtain perfect circular shape of the cable suitable fillers of elastomer should be used, if necessary.</p>
<p><b>I. Suitable semi conducting non-metallic tape should be applied over the laid up cores.</b></p>
<p><b>J. Sheathing of laid up cores :-</b> Sheathing should be of HD HOFr elastomeric compound (Material &amp; type of sheath conforming to IS: 6380/84 need to be indicated). There shall be two sheaths, INNER SHEATH : applied over the laid up bonded cores. &amp; other over this as OUTER SHEATH. Outer sheath should be Red / Orange coloured. Non-metallic Re-enforcing material of HR 90 shall be used between these two sheaths.</p>
<p><b>K. Manufacturer name, Year of manufacturing &amp; voltage grade, cable, Identification should be indicated on the outer sheath at suitable interval through the length &amp; the outer sheath.</b></p>
<p><b>L. The cable should be sequentially marked at each meter indicating the length from the starting end, starting with "000" and in ascending order progressively along the length at every meter with contrast colour. The cable should be reeled in such a fashion that both the starting and ending sequentially marked portion of the cable is visible to facilitate the inspection of sequential marking.</b></p>

**M. The cable shall be wound on a drum & packed. The end of the cable shall be sealed by means of Non-hygroscopic sealing material & shall carry the following information stenciled on the drum.**

- (i) Reference to standard.
- (ii) Manufacturer's Name Or Trade Mark
- (iii) Type of cable & Voltage Grade
- (iv) Constructional detail of cable (No of cores, Nominal cross sectional area etc.)
- (v) Length of cable on the drum.
- (vi) Cable code
- (vii) Direction of rotation of drum.
- (viii) Year of manufacturing.
- (ix) Purchase order No. & Date.

**N. Drum Length Tolerance: +/- 2 % on individual drum length (Cut length).**

**O. Size of Trailing Cable:-a)No. & cross sectional area of each power core(3 nos.X35 sq.mm),b)No. & cross sectional area of each earth core(2 nos.X35/2 sq.mm),c)No. & cross sectional area of each pilot core(1 nos.X16 sq.mm)**

**B. For Item no. 3.**

**6.6 K V, Unarmoured, 3 x 150 + 2 x 150/2 + 1 x 35 Sq mm,each cable length 200 mtr.**

**TRAILING CABLE OF 6.6 KV UN-EARTHED SYSTEM FOR HEMM WITHOUT CABLE REEL DRUM ARRANGEMENT.Heavy duty un-armoured flexible trailing cables for use in HEMM deployed in mines of NCL operating at Vo/V= 6.6 KV/6.6KV Unearthed System & confirming to the following specification:**

**A. The cable shall meet the requirement of Indian Electricity Rule 1956, amended till date.**

**B. The cable shall generally Confirm to IS: 14494/1998 with its latest revision, if any.  
In support of this, the bidder shall have to submit, self-authenticated, valid (on the date of opening of tender) BIS license conforming to IS: 14494/1998 with its latest revision.**

**C. Conductors of the cable: - Circular Conductor consisting of thin annealed tinned copper wires.**

**D. Power Core: Three (3) Power cores, Cross sectional area of each power core-specified in clause "O" i.e. size of trailing cable."**

- (i) Power Core Screening : Each power core shall be screened with Semi conducting tape or a layer of extruded semi-conducting compound.
- (ii) Power Core Insulation : Each of the three-power cores should be insulated with Elastomeric Insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).
- (iii) Power Core Insulation Screen: - All the three power cores shall have individual insulation screening of non-metallic semi conducting compound in

combination with non- magnetic, metallic screening i.e. each power core insulation shall also be screened individually with a braided metallic screen having conductance of not less than 25 % conductance of the power core and combined conductance of three screens shall not be less than the conductance of a 16 sq mm copper core to meet the requirement of I.E Rule 123.

**E. Earth Core :** Earth core shall be split up in two equal parts & laid up in interstices & the total area of these two earth cores shall be equal to the cross sectional area of the power core.

**Earth Core Insulation :** Each earth core shall be insulated with Elastomeric insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).

**F. Pilot Core :** Pilot core shall have cross section as specified in clause "O" i.e. "Size of Trailing Cable." & shall be laid up in interstices. **Pilot Core Insulation:** Pilot core shall be insulated with Elastomeric insulation (Material & type of insulation conforming to IS: 6380/84 need to be indicated).

**G. Identification of Cores :** Core identifications shall be made by the use of colour tapes (Red, Yellow & Blue for Power core, Green for Earth core & Black for Pilot core). On these tapes cable manufacturers name , year of manufacturing & voltage grade of cable should be printed or embossed at suitable interval through out the length of cable.

**H. Laying of Cores :** Power cores should be laid up together with right hand lay. The two earth cores & one pilot core should be laid in the interstices of the cable. In order to obtain perfect circular shape of the cable suitable fillers of elastomer should be used, if necessary.

**I. Suitable semi conducting non-metallic tape** should be applied over the laid up cores.

**J. Sheathing of laid up cores :-** Sheathing should be of HD HOFER elastomeric compound (Material & type of sheath conforming to IS: 6380/84 need to be indicated). There shall be two sheaths, INNER SHEATH : applied over the laid up bonded cores. & other over this as OUTER SHEATH. Outer sheath should be Red / Orange coloured. Non-metallic Re-enforcing material of HR 90 shall be used between these two sheaths.

**K. Manufacturer name, Year of manufacturing & voltage grade, cable, Identification** should be indicated on the outer sheath at suitable interval through the length & the outer sheath.

**L. The cable** should be sequentially marked at each meter indicating the length from the starting end, starting with "000" and in ascending order progressively along the length at every meter with contrast colour. The cable should be reeled in such a fashion that both the starting and ending sequentially marked portion of the cable is visible to facilitate the inspection of sequential marking.

**M. The cable shall be wound on a drum & packed. The end of the cable shall be sealed by means of Non-hygroscopic sealing material & shall carry the following information stenciled on the drum.**

**(i) Reference to standard.**

**(ii) Manufacturer's Name Or Trade Mark**

**(iii) Type of cable & Voltage Grade**

**(iv) Constructional detail of cable (No of cores, Nominal cross sectional area etc.)**

**(v) Length of cable on the drum.**

**(vi) Cable code**

**(vii) Direction of rotation of drum.**

**(viii) Year of manufacturing.**

**(ix) Purchase order No. & Date.**

**N. Drum Length Tolerance: +/- 2 % on individual drum length (Cut length).**

**O. Size of Trailing Cable:-a)No. & cross sectional area of each power core(3 nos.X150 sq.mm),b)No. & cross sectional area of each earth core(2 nos.X150/2 sq.mm),c)No. & cross sectional area of each pilot core(1 nos.X35 sq.mm)**