

	<b>BHARAT COKING COAL LIMITED</b> <b>( A Subsidiary of Coal India Limited )</b> <b>Office of the General Manager(MM)</b> <b>Materials Management Department</b> <b>Commercial Block L-III , Koyla Bhawan : Koyla Nagar</b> <b>Dhanbad : 826005(Fax No- 0326-2230183)</b>
<b>SUPPLY / PURCHASEORDER</b>	<b>Under jurisdiction of Dhanbad Court and Jharkhand High Court only.</b>

**BY REGD.POST / SPEED POST**

**Refno:BCCL/PUR/570121(II)/AA/PonyBeltConveyor/Vishwa/12/ 281** Dt.26.03.2012

To,

M/s Vishwa Industrial Co. Ltd

62A,Hazra Road,

Kolkata- 700 019 Fax No:-033-24752788

Sub. : This office Tender Enquiry No BCCL/PUR/570121(II)/AA/E&M/Pony Belt Conveyor/10-11/62 ; Due & opened on 05.09.2011

Ref. : Your offer No. VICL/BCCL-PONY-62/11-12/168 dated 1<sup>st</sup> September 2011 and subsequent correspondences on the above subject , your last letter dated 26.03.2012

**Dear Sirs,**

With reference to the above, we for and on behalf of BCCL hereby place **PURCHASE ORDER** on you for supply of 800mm /100 Mtrs Long Pony Belt Conveyor with 550V Elect at the following price, terms and conditions:

**1.SCOPE OF SUPPLY:-**

SN	Description	Qty. ( Set )	Basic Unit Rate ( Rs. )	Extended Value ( Rs. )
1	Pony Belt Conveyor complete 800 mm Width, 100 Mtr. Long With FLP 550V Electricals . Detailed specification placed at Annexure - " A "	6	1200000.00	7200000.00
	Excise Duty @ 10.30%			741600.00
	Sub Total			7941600.00
	CST @ 2 %			158832.00
	Packing Forwarding & Insurance			0.00
	Freight		24000.00	144000.00
	Landed Value			8244432.00
	CMPDIL Inspection charge		@ 0.8 %	65955.46
	Service Tax on Inspection charge		@ 10.30 %	6793.41
	Total contractual Value			8317180.87

**( Contd. Page – 2 )**

**2. Total Contractual Value :** The total contractual value will be . Rs 83,17,180.87( Rupees Eighty

Three Lakh Seventeen Thousand One Hundred Eighty and Paise Eighty Seven) only on F.O.R.

Destination basis inclusive of all taxes , duties & inspection charges as indicated above .

**3. PRICE :** FIRM & On F.O.R. Destination basis

**4.E.D. :** Will be paid at the rate applicable at the time of supply ( within delivery period ) against documentary evidence . Offered rate indicated above .

THE DESIRED INFORMATION FOR RAISING CENVAT INVOICE		
	SUPPLIER	CONSIGNEE
Name & Address Of Area:		Ekra Central Store, Block – II Area, BCCL, Nawagarh, Dhanbad, Jharkhand – 828306
Tin No.:		20821500736
JST No.:		KT – 651 (R)
CST No:		KT – 254 (C)
Circle / Sub		Katras Circle Katras
Service Tax Regd. No:		AAACB7934MST 009
Central Excise Duty Regd. No:		AAACB7934MEM 007
Range (Code):		Dhanbad - Code - 02
Division (Code		Dhanbad - Code - 02
Commissionerate (Code):		Ranchi - Code - 87

**5.CST :** Will be paid as applicable . Quoted rate is 2% against issue of C form as indicated above.

**6.Packing , Forwarding & Insurance :** Nil

**7.Freight :** Will be paid extra against documentary evidence limited to Rs.24000/- Per set as indicated above .

**8.Payment Terms:** 100% payment within 21 days of receipt and acceptance of the materials by the

consignee or from the date of receipt of Bills, whichever is later by the consignee.

**9. Bank Details:**

1	VENDOR/SUPPLIER/CONTRACTOR/CUSTOMER'S NAME & ADDRESS: (With Telephone No. & Fax No.)	M/s Vishwa Industrial Co Ltd, 62A,Hazra Road,Kolkata- 19
2	<b>PARTICULARS OF BANK ACCOUNT:</b>	
	<b>A.BANK NAME:</b>	United Bank Of India
	<b>B.BRANCH NAME:(Including RTGS Code)</b>	Hazra Road, UTBIOHAZ115
	<b>ADDRESS:</b>	53,S.P.Mukherjee Road,Kolkata-26
	<b>C.9-DIGIT CODE NUMBER OF THE BANK &amp; BRANCH</b> (Appearing on MICR Cheque issued on the Bank) Or 5-DIGIT Code Number of SBI	700027065(MICR Code of the branch)
	<b>D. ACCOUNT TYPE:</b> (S.B. Account/Current Account Or Cash Credit	Cash Credit Code: HAZ 115

	with Code 10/11/13)	
	<b>E.LEDGER NO./LEDGER FOLIO NUMBER:</b>	
	<b>F.ACCOUNT NUMBER (CORE BANKING) &amp; STYLE OF ACCOUNT</b> (As appearing on the Cheque Book)	A/C No.0108250073714 Style Of Account: Vishwa Industrial Co Ltd

( Contd. Page – 3 )

--3 --

**10.DELIVERY SCHEDULE:**-- Supply to commence within 4 months from the date of receipt of

order and to be supplied at the rate of 2 sets per month thereafter . However , keeping in view of our urgency , earliest delivery will be appreciated .

Delivery period to be reckoned from 10<sup>th</sup> day of placement of order .

**NOTE : Safe arrival of materials shall be your responsibility.**

**11. Performance Bank Guarantee** – PBG on schedule/Nationalized Bank in India valid for three months beyond the expiry of Guarantee/Warranty period for 10% value of the order (order value means FOR destination price including taxes, duties, transportation & insurance charges & other charges if any) shall have to submitted to MM Division, BCCL, Koyla Bhawan on or before commencement of supply. PBG may be submitted either for the entire order quantity at a time or each equipment wise/lot wise

**12. Security Money:**- Waived as being Registered with NSIC .

**13.Inspection:** Pre-dispatch inspection of each consignment shall be carried out by M/s.Central Mine Planning & Design Institute Ltd(CMPDIL), Ranchi/their Regional Office as per the terms and conditions indicated here under:

Pre-dispatch inspection shall be carried out by M/s.CMPDIL(the above firm) as per their methodology. The third Party Inspection shall include examination of raw material, test certificate verification, continuous monitoring of quality assurance by manufacturer which will include regular and surprise visits. In brief, the scope and condition of inspection by M/s.CMPDIL will be as follows:

Checking and approval of test procedures/quality assurance plans.

Verification of records and documents of your works.

Verification of documents and test certificate of bought out items and cross checks.

You shall provide facilities for carrying out all necessary tests as required in the specification at your works else these will be carried out at an independent test house at your cost.

Final testing and checking of materials as per specifications.

M/s.CMPDIL will have full and free access to the premises of manufacturer during the process of manufacturing and during inspection activities.

Inspection fee @ 0.80% of total F.O.R. Destination price with service Tax of 10.30%, is to be paid to M/s.CMPDIL alongwith inspection call letter payable by DD which will be reimbursed subsequently by BCCL together with consignment billing.

Minimum 7 calendar days notice shall be given by you to M/s.CMPDIL for arranging inspection within valid delivery period as per contract.

The ultimate responsibility for supply of correct materials as per requirement of relevant specification lies solely with you inspite of clearance/acceptance by inspection authority i.e. M/s.CMPDIL. The manufacturer will be required to replace the material free of cost if found defective/unserviceable/not according to relevant specifications.

The charges for third party inspection and the cost of materials that would be required for destructive tests, if any, shall be reimbursed by BCCL together with the consignment billing. Such cost shall be reimbursed only if it is duly certified by M/s.CMPDIL.

Please send inspection call to M/s.CMPDIL, Ranchi/ their Regional Office as indicated above

Final inspection shall be arranged by the consignee after receipt of the material at our destination.

The purchaser shall, at its discretion, have the right to test the ordered material in a Government

Test House or in a test house nominated by the purchaser. In case of failure of the material after testing the cost of tests as well as of the material shall have to be borne by the supplier.

**14. Transit Insurance** – Shall be arranged and covered by you for safe arrival of the materials to the consignee end at your cost and risk.

**15. PENALTY FOR FAILURE TO SUPPLY IN TIME**

The delivery of stores stipulated in Purchase order shall be deemed to be of the essence of the contract and delivery of the stores must be completed by the date specified. No materials should be supplied beyond the specified delivery period, unless specific approval has been obtained from the purchaser.

( Contd. Page – 4 )

--4 --

In the event of failure to deliver the stores within the stipulated date/ period in accordance with the samples and/or specification mentioned in the supply order, and in the event of breach of any terms and conditions mentioned in the supply order. Bharat Coking Coal Limited reserves the right:

- a) To recover from successful tenderer, as agreed liquidated damages, a sum not less than 0.5% (half percentage) of the price of the stores which successful tenderer has not been able to supply (for this purpose part of a unit supplied will not be considered) as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10%. Where felt necessary the limit of 10% can be increased to 15% at the discretion of Head of the Materials Management Division .
- b) 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 a similar description without canceling the supply order in respect of consignment not yet due for supply or
- c) To cancel the supply order or a portion thereof, and if so desired to purchase the store 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 the agreed liquidated damages referred to in clause(a) above.
- e) To encash any Bank guarantee which is available for recovery of the penalty or
- f) To forfeit the security deposit full or in part.
- g) Whenever under the contract a sum of money is recoverable from and payable by the supplier, BCCL shall be entitled to recover such sum by appropriating , in part or whole by deducting any sum or which at any time thereafter may be due to the successful tenderer in this or any other contract with Bharat Coking Coal Ltd. or any subsidiary of Coal India Ltd. Should this sum be not sufficient to cover the full amount recoverable, the successful tenderer shall pay BCCL on demand the remaining amount. The supplier shall not be entitled to any gain under this clause.

**16. PRICE FALL CLAUSE.**

- i) The prices charged for the stores supplied under the contract by the supplier shall in no event exceed the lowest price at which the supplier offer to sell the stores of identical description to any other organization from date of offer till completion of supply under the contract.
- ii) If at any time during the said period the supplier offers lower sale price of such stores to any other organization at a price lower than the price chargeable under this contract, the supplier shall forthwith notify such reduction or sale to the consignee concerned under intimation to CGM(MM), Bharat Coking Coal Limited , Commercial Block , Level –III , Koyla Bhawan , Koyla Nagar , Dhanbad and the price payable under the contract for the stores supplied after the date of coming into force of such reduction or sale, shall stand correspondingly reduced. The above stipulated will not, however apply to exports by the supplier.

**17. Submission of Bills-** Pre –receipted stamped original bill for 100% value in four copies along with, delivery challan in original, Guarantee/ Warranty certificate , pre-despatch inspection certificate and other relevant documents as per supply order , etc should be submitted to the Paying Authority through Consignee only.

**18. Guarantee /Warranty –** Materials supplied should be guaranteed for a period of 12(twelve) months from the date of fitment or 18 months from the date of receipt and acceptance at consignee end whichever is earlier against any manufacturing defects / workmanship / inferior quality. Any defect observed on this account shall be attended within 07 days from the date of receipt of report and replace the materials within 21 days free of cost.

**19.Packing: Consignment shall be supplied in suitable standard proper packing.**

( Contd. Page – 5 )

- 5 --

**20. Force Majure Clause** – If the execution of the supply order is delayed beyond the period stipulated in the supply order as a result of out-break of hostilities, declaration of an embargo / curfew or blockade or fire , flood, acts of nature or any other contingency beyond the supplier's control due to act of God then BCCL may allow such additional time by extending the delivery period , as it considers to be justified by the circumstances of the case and its decision shall be final.

**21. Consignee** – Depot Officer, Ekra Central Stores.,P.O:- Bansjora(Sijua), Dhanbad, Jharkhand, India (Phone NO:-0326-2330350)

**22. Paying Authority-** GM(F) MM Div, Koyla Bhawan, Koyla Nagar, Dhanbad.

**23. Issue of Road Permit:** Road Permit if required may be obtained directly from the Consignee under intimation to this office.

**24. All disputes are subject to Dhanbad Court and Jharkhand High Court**

ALL OTHER TERMS & CONDITIONS AND TECHNICAL SPECIFICATIONS ALONG WITH SCOPE OF SUPPLY WILL BE STRICTLY AS PER OUR NIT.

This contract is concluded with the issuance of this order. We are enclosing 2 copies of the Purchase order, one of which should be returned to us duly stamped and signed. This issues with the approval of the Competent Authority.

Yours faithfully,  
For & on behalf of Bharat Coking Coal Ltd.

( M. Mehta)  
Sr. Officer(MM)

(A.K.Choudhary )  
Chief Manager (MM)

**INDENT REFERENCE**

Indent no. and Date	Budget Certification Details.
BCCL/CGM( E & M)/F- C.Indent/Schemes/2010/113 dated 21.08.2010 IR No:- 0121 dated 05.10.2011	Advance Budget Commitment for 2012-13 provided under reference no: BCCL/HQ/PP/CM(F)/12-13/P&M/MM/A- 15/65/Indent dated 20.03.2012 for Rs 83,17,180.87/- FC Ref No:- BCCL/P&P/CM(F)/CAP/12-13/P&M/04/14 dated 20.03.2012

Copy to:

1. Depot Officer, Ekra Central Stores.
2. GM(F) MM Div, Koyla Bhawan
3. CGM( E& M), BCCL, Koyla Bhawan
3. CGM(E&M), CMPDIL, Gandhi Nagar, Kanke Road, Ranchi
4. SM(Tech Cell), MM Div, Koyla Bhawan.
5. Master File/Office Copy.

Sr. Officer(MM)

Chief Manager (MM)

ANNEXURE- “A”

### **BROAD SPECIFICATION FOR PONY BELT CONVEYOR**

**ITEM :-** 800 MM width, 100 Mtr. Long

<u>Sl.No.</u>	<u>Conveyor Data</u>	<u>Parameter</u>
1.	Belt width (mm)	800
2.	Length of Conveyor(M)	100
3.	Belt Speed ( M/Sec.)	1.5
4.	Drive Configuration	Single drive
5.	Take – up Travel	Screw Take - up
6.	Motor Power(KW) FLP, DGMS approved	1 x 22
7.	Enclosure	FLP
8.	Operation of Take – up	Manual
9.	No. of Pull cord switch(FLP)	4 (four) Nos.
10.	No. of Belt sway switch(FLP)	8(Eight) Nos.
11.	Zero Speed Switch(FLP)	1(ONE) No
12.	No. of AVA(FLP).	2(Two)Nos.
13.	Lift of Conveyor(M)	3(Three)

14.	Gear Ratio	25:1
15.	Tail End Guard	1(One)
16.	TPH Capacity.	250

## **SPECIFICATIONS FOR TROUGHED BELT CONVEYORS FOR INSTALLATION IN U.G. COAL MINES.**

Sl.No.	DESCRIPTION	PARAMETER
1	2	3
1.0.0	<b><u>SERVICE CONDITIONS:</u></b>	
1.1.0	Place of installation :	Underground Coal Mines.
1.2.0	Duty :	Continuous(24 hrs/day).
1.3.0	Maximum ambient air Temperature :	50 deg.C.
1.4.0	Relative humidity(max) :	98%
1.5.0	Environment :	Dusty(mostly Coal dust)
2.0.0	<b><u>CONVEYOR DATA:</u></b>	
	Details as per page 1 of Annexure – “ A “	
2.9.0	Lift	: The conveyor will be installed at any gradient & Lift as per requirement and site conditions, but within the limits set by K.W rating of drive head specified.
1.1.0	<b><u>SCOPE OF SUPPLY :-</u></b>	
3.1.0	Drive head assembly consisting of below mentioned components as detailed at Sr.No.5.1. 1.0 ( 5.1.1.0 to 5.1.10.17 )	
3.1.1	Drive head frame	
3.1.2	Pulleys with shafts	
3.1.3	Gear Box	
3.1.4	Motors	
3.1.5	Fluid couplings	
3.1.6	Out put couplings	

- 3.1.7 Equalizing gear (for tandem drives )
- 3.1.8 Bearing blocks
- 3.1.9 Anti roll back device
- 3.2.0 Starter
- 3.3.0 Delivery jib assembly consisting of below mentioned components as detailed at
  - Sr.No.5.3.0.0 ( 5.3.1.0 to 5.3.5.3 )
- 3.3.1 Discharge Pulley with shaft
- 3.3.2 Bearing blocks
- 3.3.3 Jib structure
- 3.3.4 Belt scraper
- 3.4.0 Tail end assembly consisting of below mentioned components as detailed at
  - Sr.No.5.4.0.0 ( 5.4.1.0 to 5.4.6.1 )
- 3.4.1 Return Pulley with shaft
- 3.4.2 Bearing blocks
- 3.4.3 Tail end structure
- 3.4.4 V-type plough scraper return belt
- 3.4.5 Wiper cum dust collector unit
  - As per DGMS Circular No.4
  - dated 11.05.2004.
- 3.5.0
  - V-type plough scraper on return :
  - Belt before take up.
- 3.5.0 Intermediate structure consisting of below mentioned components as
  - detailed at Sr. No.5.6.0.0 ( 5.6.1.0 to 5.6.8.6 )
- 3.6.1 Stringers
- 3.6.2 Stools
- 3.6.3 Idler frames and brackets for
  - carrying impact and transition
  - Idlers.
- 3.6.4 Idler brackets for return idlers
- 3.6.5 Carrying idlers
- 3.6.6 Return idlers
- 3.6.7 Impact idlers
- 3.6.8 Decking plates as specified at Sr.No.5.7.0.0
- 3.6.9 Protective guards/fences as specified at Sr.No.5.9.0.0
- 3.10.0 Accessories mentioned below as detailed at Sr.No.5.10.0.0(5.10.1.0 at
  - 5.10.3.5)
- 3.10.1 Pull Cord switches
- 3.10.2 Belt Sway switches
- 3.10.3 Pre-start Audio-visual warning alarm.
- 3.11.0 Required No. of fasteners

**Note:- Belting is not included in the scope of supply.**

#### 4.0.0.0 **GENERAL REQUIREMENTS:**

- 4.1.0.0 Modular construction –



- 4.1.1.0 The various components/assemblies have to be capable of dismantling transport in U.G.and easy reassembly.
- 4.1.2.0 It should be possible to take out and refit the components/assemblies without dismantling adjacent unit.
- 4.2.0.0 Flexibility
- 4.2.1.0 The design of the drive head and other equipment shall be flexible so that they can be adopted to different mine conditions.
- 4.2.2.0 The motor/gear boxes shall be capable of being mounted on either the LH side or RH side depending upon the space available in underground.
- 4.3.0.0 High reliability -
- 4.3.1.0 The conveyors will have to be designed and precision manufactured so that a trouble free service with a minimum of maintenance is guaranteed
- 5.0.0.0 **DETAILED SPECIFICATION:-**
- 5.1.0.0 **DRIVE HEAD ASSEMBLY:-**
- 5.1.1.0 Design configuration : Drawing enclosed .
- 5.1.2.0 Drive Head Frame : Shall be made of heavy structural steel sections.
- 5.1.3.0 **DRIVE PULLEYS & SHAFT** :
- 5.1.3.1 Drum dia : 650 mm
- 5.1.3.2 Drum width : for 800mm Belt : 950 mm.  
for 1000mm Belt : 1150 mm.
- 5.1.3.3 Shell thickness : 16 mm.
- 5.1.3.4 Dia of Shaft at bearing seating : 160 mm.
- 5.1.3.5 Shaft material : C-40 as per IS: 1570.
- 5.1.4.0 **SNUB PULLEY & SHAFT** : (Applicable in case the drive configuration (Clause No.2.5.0) is Snub")
- 5.1.4.1 Drum dia : 550 mm.
- 5.1.4.2 Drum width: -for 800 mm Belt : 950 mm.  
For 1000 mm Belt : 1150mm.
- 5.1.4.3 Shell thickness : 12 mm.
- 5.1.4.4 Dia of shaft at bearing seating : 140 mm.
- 5.1.4.5 Wrap angle for snub drive : Not less than 210 deg.
- 5.1.5.0 **BEARING BLOCKS:-**
- 5.1.5.1 Material of construction : Cast Steel.
- 5.1.5.2 Type : Heavy duty.
- 5.1.5.3 Bearings : Heavy duty self aligning spherical roller bearing

#### **EQUALIZING GEARS:-**

( For Dual-tandem/tandem drive)( if applicable )

- 5.1.6.1 Material of construction : Cast Steel/Alloy Steel.
- 5.1.6.2 Type of gear : Spur.
- 5.1.7.0 **GEAR BOXES** :
- 5.1.7.1 Type of gear box : Helical/Bevel Helical

- 5.1.7.2 Mounting : Foot mounted.
- 5.1.7.3 Service factor to be considered for selection : 1.6 over motor rating.
- 5.1.7.4 Cooling : Oil cooled (Natural)
- 5.1.7.5 No. of stages : 3 ( Three ) .
- 5.1.7.6 Make( Acceptable makes) : New Allenbury Works/VISHWA
- 5.1.7.7 Type of anti roll back device : CLS-85 .
- 5.1.8.0 **FLUID COUPLING** :
- 5.1.8.1 Type of fluid coupling : Suitable for use in U.G. Coal mines.
- 5.1.8.2 Material of Body. : Steel/Iron Body.
- 5.1.8.3 Operating fluid : Fire resistant fluid.
- 5.1.8.4 Make & Model : Pembrill / Fluidomat  
Model – AFC-51
- 5.1.9.0 **OUT PUT COUPLING** :
- 5.1.9.1 Type of coupling : Geared.
- 5.1.9.2 Service factor to considered for Selection. : 1.25 over motor rating
- 5.1.9.3 Make and Model : VISHWA/NAW  
Model- ZNR-70
- 5.1.10.0 **MOTORS (FLP)**
- 5.1.10.1 Type : Sq.Cage Induction.S1 duty.
- 5.1.10.2 Operating voltage system : 550V  $\pm$  10% 3 Ph,50 Hz
- 5.1.10.3 K.W. rating : .
- 5.1.10.4 Minimum starting torque : 2 times full load torque.
- 5.1.10.5 Motor RPM( Syn.) : 1500
- 5.1.10.6 Class of duty : S-1 as per IS:325/1996
- 5.1.10.7 Type of starting : DOL
- 5.1.10.8 Class of insulation : Class F with temp. rise limited to class B.
- 5.1.10.9 Type of Enclosure. : T E F C
- 5.1.10.10 FLP/NFLP : As per annexure
- 5.1.10.11 Degree of protection(for NFLP): IP-55 of IS: 4691-1985
- 5.1.10.12 In case of FLP, the enclosure : Mandatory  
Shall be approved by DGMS  
For use in U/G Mines.
- 5.1.10.13 Frame size( As per IS:1231-74); - 180 L
- 5.1.10.14 Mounting of Motor : Floor mounted(B3 as per IS:2253-74)
- 5.1.10.15 Cable Entry : Suitable for DVC DWA Mining Cable of required size.
- 5.1.10.16 Standard specifications : For FLP-IS:3682-1966  
For NFLP-IS:325-1996.
- 5.1.10.17 Make : Marathon/KEC/Crompton
- 5.2.0.0 **STARTER(FLP)**
- 5.2.0.0 Type : DOL
- 5.2.2.0 Voltage System : 550V  $\pm$  10% 3 Ph 50 Hz.
- 5.2.3.0 K.W. rating : 1 X 22
- 5.2.4.0 **CONSTRUCTION :**
- 5.2.4.1 In two compartments

- 5.2.4.2 One shall house through going Bus bars and off load isolator  
Ratings of bus bar and isolator : 200A.
- 5.2.4.3 II<sup>nd</sup> shall house contactors and protective device.
- 5.2.4.4 Door of IInd compartment shall be interlocked with isolator in such a way that  
the door can be opened only when the isolator is in OFF Position.
- 5.2.4.5 Cable terminal boxes with sealing boxes shall be provided for both incoming and out going terminals suitable for PVC DWA mining cables of required size.
- 5.2.4.6 Through going terminals of bus bar shall be provided with bus trunking box with blanking cover.
- 5.2.4.7 Four nos.auxiliary terminals(4x2):  
with terminals box and Cable  
sealing boxes suitable for Twin  
core 2.5 Sq.mm.PVC SWA Cable
- 5.2.4.8 Type of Enclosure(FLP/NFLP) : As per annexure'A'
- 5.2.4.9 Degree of protection( for NFLP) : IP-54 of IS: 13947(part-I)
- 5.2.4.10 In case of FLP, the enclosure : Mandatory  
shall be approved by DGMS for  
use in U.G. Coal Mines.
- 5.2.4.11 Mounting : Skid mounted
- 5.2.5.0 Utilisation category : AC3 of IS: 1394(Part 4/sec.1)-1993
- 5.2.6.0 Nominal current rating of contactors (for Ac-3 duty ) : Not less than 2.0 times the full load current of motor.
- 5.2.7.0 Operating limits of contactor : Shall be as per IS:13947. However, the drop out voltage shall not be more than 50% of rated control supply voltage.
- 5.2.8.0 **PROTECTIONS** :
- 5.2.8.1 Over load protection : Magnetic overload relay with oil dash pot type time lag.  
Range of current adjustment : 75% to 100%
- 5.2.8.2 Earth leakage protection : CBCT operated, non self resetting type  
Type sensitive earth leakage relay with  
Test/reset and indication facility.
- Current setting range : Dual range, with following ranges(a)  
50mA  
300mA in steps of 50 MA. (b) 0.5A-2A in  
Steps of 0.5A with provision to block range.  
(b)when the range is not required.
- Time delay setting range : 0-1 Sec.In steps of 0.1 Sec. or 0.2 Sec.
- 5.2.8.3 Short circuit protection : HRC fuses of suitable rating

Contd.....8/-

- 5.2.8.4 Suitable provision shall be made:in the starter for sequence starting interlock with other starter with timer.
- 5.2.8.5 The starter shall have provision:for interlocking with pull cord switches(Sr.No.5.7.1.0),belt sway switches(Sr.No.5.7.2.0),Audio visual alarm(Sr.No.5.7.3.0) and Zero speed.limit switches at tail end(sr.No. 5.4.6.1)
- 5.2.9.0 Instruments : Amp. Meter of suitable range.
- 5.2.10.0 Standard specifications for : IS:13947(Part 4/Sec.1)-1993  
IS:2148-1981
- 5.2.11.0 Make of Starter :. Mine Line/Volga/ Prabhu
- 5.2.12.0 Make of contactors : AY/TC/BCH/L&T/SIEMENS(rating- Twice the FLC).  
: (A copy of TC to be submitted)

**DELIVERY JIB ASSEMBLY :**

- 5.3.1.0 Structure : Made of heavy structural sections, cantilever supported, bolted to drive head frame.
- 5.3.2.0 Length of Jib : 3 Mtrs.
- 5.3.3.0 Discharge Pulley and shaft : Same as drive pulley specified at Cl. No.5.1.5.0.
- 5.3.4.0 Bearing blocks : Same as Ci.No.5.1.5.0
- 5.3.5.0 **BELT SCRAPER** :
- 5.3.5.1 Type of belt scraper : Counter weighed/spring loaded.
- 5.3.5.2 Rubber strip dimensions : 10 mm thick x 100 mm wide
- 5.3.5.3 Rubber strip shall be fixed to scraper by means of slotted holes to facilitate easy adjustment

Contd.....9/-

: - 9 - :

**5.4.0.0 TAIL END ASSEMBLY** :

- 5.4.1.0 Structure : Shall be made of heavy structural sections.
- 5.4.2.0 Tail Pulley and shafts : Same as clause No.5.1.4.0
- 5.4.3.0 Bearing blocks : Same as clause No.5.1.4.0
- 5.4.4.0 Minimum ground clearance below: 300 mm tail pulley.

**5.4.5.0 BELT SCRAPER ON RETURN BELT BEFORE TAILS DRUM.**

- 5.4.5.1 Type of Belt Scraper : V-type plough scraper.
- 5.4.5.2 Angle of V : 60 Deg.
- 5.4.6.0 **WIPER CUM DUST COLLECTOR:**
- 5.4.6.1 A wiper cum dust collector trolley: shall be provided at the tail end as per DGMS (Tech.)Circular No.4 dated 11.05.04.
- 5.5.0.0 **TAKE UP ASSEMBLY** :

5.5.0 Operational-Manual : By Screw take up(with suitable tension adjusting handle)

5.6.0.0 **INTERMEDIATE STRUCTURES** :

5.6.1.0 **Stringers** :

- 5.6.1.1 Stringer length : 3 Meters
- 5.6.1.2 Stringer section : ISMC 125 x 65
- 5.6.1.3 Connecting bracing : Not required
- 5.6.1.4 Size of fasteners : M-16

Contd.....10/-

: - 10 - :

5.6.2.0 **Stools**

- 5.6.2.1 Height of stool : 600 mm
- 5.6.2.2 Stool Section : ISMC 125 x 65
- 5.6.2.3 Steel section to be used for bracing for stools : ISA 50 x 50 x 6
- 5.6.2.4 Size of fasteners : M-16
- 5.6.2.5 Thickness of base plate : 10 mm.

5.6.3.0 **CARRYING IDLER SETS** :

- 5.6.3.1 Spacing : 1.0 M
- 5.6.3.2 Troughing angle : 30 deg.
- 5.6.3.3 Forward tilt of side idlers : 2 deg(Max)
- 5.6.3.4 Steel section to be used for idler: M.S. flat 65x10 or ISLC 75 40 frame (transome)
- 5.6.3.6 Carrying idler : Shall conform to enclose specification
- 5.6.3.7 Thickness of mounting base plate: 10 mm.
- 5.6.3.8 Provision for belt training : Mounting base plates shall be provided With slotted holes to facilitate belt training.
- 5.6.3.9 Size of fasteners : M-16

5.6.4.0 **RETURN IDLERS** :

- 5.6.4.1 Spacing : 3 M
- 5.6.4.2 Brackets : Shall be bolted to stools or stringers.
- 5.6.4.3 Thickness of plate used for brackets. : 10 mm
- 5.6.4.4 Size of fasteners to be used : M-16
- 5.6.4.5 Return idler : Shall conform to enclose specification No: 139071-2004.

5.6.5.0 **IMPACT IDLER SETS** :

- 5.6.5.1 Location : In the loading section at tail end.

5.6.5.2 Spacing	: 0.5 M
5.6.5.3 No.of idler Sets	: 4 Sets.
5.6.5.4 Impact idler roller	: Shall conform to enclosure specification No:139071-2004.

Contd.....11/-

: - 11 - :

#### 5.6.6.0 **TRANSITION IDLER SETS**

5.6.6.1 Location	: At delivery jib and Tail end.
5.6.6.2 No.of idler sets	: 3 Sets.
5.6.6.3 Troughing angles	: 5 deg. 10 deg. 20 deg.
5.7.0.0 <b><u>DECKING PLATES</u></b>	:
5.7.1.0 Thickness of plate	: Not less than 1.5 mm.
5.7.2.0 Location	: At drive head, loop take up and loading section.
5.7.3.0 Total length	: Sufficient to cover the above sections.

#### 5.8.0.0 **SKIRT PLATES**

5.8.1.0 Location	: For loading section on both sides of belt.
5.8.2.0 Thickness of plate	: Not less than 6 mm.
5.8.3.0 Length	: 3 Meters(Min)
5.8.4.0 Height of plate	: Not less than 450 mm above belt.
5.8.5.0 Rubber strip dimensions	: 10 mm thick x 100 mm wide.
5.8.6.0 Rubber strips shall be fixed to	: the skirt plate by means of slotted holes to facilitate easy adjustment.

#### 5.9.0.0 **PROTECTIVE GUARDS/FENCES:**

Suitable protective guards/Fencing: shall be provided at all rotating parts at drive head, discharge point, tail end etc.

#### 5.10.0.0 **ACCESSORIES**

##### 5.10.1.0 **PULL CORD SWITCHES**

5.10.1.1 Type of switch	: Manual reset type.
5.10.1.2 Enclosure	: FLP,DGMS approved.
5.10.1.3 Spacing	: 30 m on one side(Approx.)
5.10.1.4 Required Nos.	: As per the Annexure A
5.10.1.5 Pull rope	: Stranded and PVC sheathed.
5.10.1.6 Make	: MINE LINE/EEC
5.10.1.7 Zero Speed Switch	: As per ANNEX "A".

##### 5.10.2.0 **BELT SWAY SWITCHES:**

5.10.2.1 Type of switch	: Auto reset type.
5.10.2.2 Enclosure	: FLP,DGMS approved.
5.10.2.3 Spacing	: 30 m on both sides.
5.10.2.4 Required Nos.	: As per annexure A

Contd.....12/-

: - 12 - :

5.10.2.5 Make	: MINE LINE/EEC
5.10.3.0 <b><u>AUDIO-VISUAL ALARMA</u></b>	:
5.10.3.1 Type	: Intrinsically safe Audio Visual alarm with pre-start warning(compact unit)
5.10.3.2 Enclosure	: FLP,DGMS, approved
5.10.3.3 Spacing	: 50 M.
5.10.3.4 No.of units required	: As per annexure A
5.10.3.5 Make	: SAIT,MINE LINE/EEC

#### 6.0.0 **PRE-DESPATCH INSPECTION AND TESTS :**

6.1.0 The belt conveyors will be inspected by BCCL's representative/third party inspection agency at manufacturer's works before dispatch of the equipment to ascertain the conformity of the conveyors to supply order specifications, relevant ISS, statutory regulations(DGMS approvals for FLP electricals) and type test certificates.

6.1.0 Testing of assemblies/components, wherever required will be carried out by the inspector as per the relevant standards and supply order. The manufacturer shall make available to the inspector, the required test facilities with necessary support for conducting the tests.

6.0.0 The manufacturer shall make4 available to be inspector the following documents during the inspection.

- a) Copies of relevant ISS.
- b) All records of quality checks as per QAP.
- c) Dimensional/manufacturing drawings of different assemblies/components of the conveyors.
- d) Invoices in respect of purchase of raw materials viz. Steel, bearings, tubs ( for rollers) etc. and bought out items.
- e) Manufacturer's test certificates in respect of raw-materials and bought out items.
- f) Copies of valid DGMS approvals for the FLP Electricals (Motor, Starter, Pull Card Switch, Belt sway switch & Audio-visual alarms)
- g) Copies of CMRS/ERTL test reports for FLP Starter along with dimensional drawing ( referred in the test report).
- h) Copies of type test certificates from CPRI for contactors used in the starters as per IS: 13947( Part-4/Sec.1)-1993.

Contd.....13/-

: - 13 - :

## **SPECIFICATIONS FOR CONVEYOR ROLLERS.**

Sl.No.	DESCRIPTION	PARAMETER
1.0	ENVIRONMENTAL/ OPERATING CONDITIONS:-	
1.1	Place of use	: Coal Mines(Both U.G.and Surface)
1.2	Temperature(Max.)	: 50 dg. C.

- 1.3 Humidity( Max.) : 98%.
- 1.4 Atmosphere : Dusty(Mostly coal dust)and Watery
- 1.5 Conveyor speed(Max) : 2.5 M/Sec.

## 2.0 **BASIC PARAMETERS:-**

- 2.1 Type of roller : Drop in type, greased for life  
( Maintenance free)
- 2.2 Friction Co-efficient : Not more than 0.015
- 2.3 Run out/Eccentricity : As per clause 4.5 of IS:8598
- 2.4.0 **DIMENSIONAL DETAILS:**
- 2.4.1 Top roller(Troughing : As per the drawing given in Ann.-1  
Roller)
- 2.4.2 Bottom roller(Return: As per the drawing given in Ann.-1  
Roller)
- 2.4.3 Impact roller : As per the drawing given in Ann.-2

## 3.0 **MATERIALS AND CONSTRUCTIONAL DETAILS:**

### 3.1.0 **BARREL / TUBE**

- 3.1.1 Material of barrel : Steel tube conforming to grade yet  
210 of IS:9295-1983.

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: - 2 - :

- 3.1.2 Boring of the pipe : The pipe shall be bored on double ended boring machine, capable of simultaneous boring of both ends in a single seating to maintain coaxially

### 3.2.0 **BEARING HOUSING:**

- 3.2.1 Material of bearing : Pressed sheet metal housing drawn  
housing in CRCA sheets of extra deep draw-  
ing quality.
- 1.5.2 Nominal thickness of: 3.15 mm (Min.)
- 3.2.3 Wall thickness of : Not less than 2.5 mm  
housing after stam-  
ping & machining.
- 3.2.4 Machining Tolerance: The housing shall be finished to M7(Min)  
for housing as per IS:1919 for accommodating the  
outer race of the bearing.
- 3.2.5 Welding of bearing : The bearing housings shall be welded to  
housing the pipe by Twin head MIG/MAG(CO)  
Welding machine capable of welding the  
housing at both ends simultaneously in a



- single seating.
- 3.3.0 **SHAFT** :
- 3.3.1 Material of shaft : Carbon steel conforming to C-40 of IS:1570 or En 8A of BS:970.
- 3.3.2 Machining tolerance of shaft : The shaft shall be machined and ground to J6(Min.) as per IS:919 at bearing settings, maintaining spatiality of both ends.
- 3.3.3 Shaft ends : Type 'A' as per IS:8598-1987.
- 3.4.0 **BEARINGS** :
- 3.4.1 Type of bearings : Seize resistant ball bearings.

**NOTE :** For rollers of shaft dia above 30 mm, single row deep groove ball bearing of C3 clearance is also acceptable.

- 3.4.2 Acceptable make of bearings : SKF/NBC/ABL/FAG/GRB/JBL.

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: - 3 - :

- 3.5.0 **LUBRICATION** :
- 4.5.1 Lubricant : Lithium based grease with a worked penetration of 220-250 class 3.
- 3.5.2 Make/brand of grease: IOC, SERVOGEM-2/BL-ML3
- 1.5.3 Quantity of grease : 16CC
- 3.6.0 **SEALING** :
- 3.6.1 Type of seal : Non contact, Multi Lip labyrinth seal.
- 3.6.2 Material of seal : Neoprene, Nylong-6 or any other better material
- 3.6.3 Back Inner seal : Nilon-6 or any other suitable material
- 3.6.3 Dust seal and rain cap: Suitable material
- 3.6.4 3.6.5 The sealing is to be for the life time of the bearing.
- 3.7.0 Assembly of roller : The bearings and seals shall be press fitted on the roller.

3.6.0 **RUBBER RINGS FOR IMPACT ROLLER :**

- 3.6.1 Shore hardness of rubber: 50-60 deg. on shore 'A' scale.
- 3.6.2 Thickness and No. of rings: Bidder to indicate.

1.0 **PAINTING :**

The surface of the rollers Shall be cleaned properly, removing rust, oil film etc. and one coat of anti rust paint to be given. Over this another coat of good quality paint of smoke grey color shall be given

2.0 **IDENTIFICATION MARKING:**

Manufacturers name/trade mark month and year of manufacturer shall be permanently and legibly marked on the roller by etching/embossing which should last for the life of roller.

6.0 **TESTING :-**

The following tests shall be conducted : on completed rollers at appropriate frequencies in the production batch.

Contd.....4/-

: - 4 - :

- a) Friction Co-efficient test.
- b) Dimensional check up and Run out/eccentricity test.
- a) Dust sealing test.
- b) Water proof ness test.

7.0 **GUARANTEE** :-

Complete roller shall be guaranteed : For a working life not less than 2500 hours.

8.0 **PRE-DESPATCH INSPECTION** :

8.1 The rollers will be inspected by BCCL's representative/third party inspection agency at the manufacturer's works before dispatch of the consignments to ascertain the conformity of the rollers to supply order specifications and relevant ISS.

8.2 The manufacturer shall make available to the inspection, the required test facilities with necessary support for conducting the inspection and tests as per the order specifications and relevant ISS.

8.3 Samples for the tests will be drawn from the lots ( Size wise) by random sampling methods. The sample size for the tests will be follows.

8.4 The manufacturer shall make available to the inspector the following Documents during the inspection.

- a) Copy of supply order.
- b) Copies of relevant ISS.
- c) Test methods.
- d) Works test certificates.
- e) Invoices in respect of purchase of bearings, tubes and bars( for shaft) etc.
- f) Manufacturer's test certificates in respect of raw materials.

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9.0 **DOCUMENTS TO BE SUBMITTED WITH CONSIGNMENTS** :-

- 9.1 Pre-dispatch inspection and test report.
- 9.2 General arrangement/assembly drawing of the roller showing distinctly the tubs, shaft, bearing housing, bearings, seals etc.
- 9.3 Technical leaflets if any.