BOKARO POWER SUPPLY CO. (P) LTD.

HALL NO:- M-01, OLD ADMINISTRATIVE BUILDING, ISPAT BHAVAN, BOKARO STEEL CITY – 827001

Reg. Office: Ispat Bhawan, Lodhi Road, New Delhi – 110 003 CIN:U40300DL2001PTC112074

TENDER NOTICE NO. BPSCL/MM/22-23/PUR-131/NIT-1200 Dated 30.11.2022



TENDER DOCUMENT

SUBJECT: Procurement of High Chrome Grinding Media Balls.

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Bokaro Power Supply Co. (P) Ltd.

(A Joint Venture of SAIL & DVC)
Hall No: - M-01, Old Administrative Building,
Ispat Bhavan, Bokaro Steel City – 827001
Reg. Office: Ispat Bhawan, Lodhi Road, New Delhi – 110 003

CIN:U40300DL2001PTC112074

NOTICE INVITING TENDER

NIT No.: BPSCL/MM/22-23/PUR-131/NIT-1200

For and on behalf of BOKARO POWER SUPPLY COMPANY (P) LTD, sealed tenders in two parts, **Part - A :** EMD and **Part-B**: Technical & Commercial Offer with copy of system generated acknowledgement-slip for online submission of sealed price are invited from the bidders meeting the qualification criteria stipulated in the bidding documents for supply of following items:

Item	Procurement of Cast Steel Ball.
	Rs. 1,00,000.00 (Rupees One Lakh) Only
Earnest Money (in Indian Rs.)	OR
	Document for Exemption as per clause (ii) of General Terms & conditions.
Last date & time for submission of tender	30.12.2022 up to 12: 00 Hours
Bid Opening date & time	30.12.2022 at 12:15 PM

- 1. The bidder should have minimum average annual turnover (MAT) of Rs. 34.02 Lakh only.
 - Average annual turnover shall be determined taking into consideration turnover of preceding three (03) consecutive financial years. Other income shall not be considered for arriving at annual turnover.
 - Audited annual account along with auditor's report of the bidder should be furnished in support of the same. Where audited account is not mandatory as per the law, the bidder has to submit annual financial turnover during the consecutive last three (03) years ending 31st March of the previous financial year duly certified by CA
- 2. The bidder must have valid ISO: 9001 certification for manufacturing of grinding media as on date of bid opening.
- 3. The bidder should have requisite experience of manufacturing and supplying "similar items" in India to any PSU / Government / Semi Government Organization or Joint Venture thereof / Company registered under Companies Act.

Similar items means: "High Chrome Grinding Media Balls"

- 4. The bidder should have infrastructural facilities for carrying out at least one core activity like Casting, Heat Treatment required for manufacturing of the item under procurement.
- 5. The bidder is required to submit self-attested photocopies of documents (Purchase Orders, GRN / Delivery Challan / Completion certificate etc.) in support of their eligibility and experience. In addition, bidder shall submit a self declaration in enclosed format at **Annexure III**.
- 6. The bidder shall furnish latest **IT return** and **GSTIN**. The bidder shall also submit acceptance to Terms & Conditions of Reverse Auction in the format attached at **Annexure IV**.

General Terms & Conditions:

i) Offer shall be accompanied with Earnest Money Deposit (EMD) in the form of Demand Draft / Pay Orders / Bankers Cheque Payable at Bokaro Steel City / Bank Guarantee having validity of, one (01) year, from any Nationalized Bank / Scheduled Bank except Co-operative Bank drawn in favor of **Bokaro Power Supply Company (P) Ltd.** as per format available at our website: www.bpscl.com. Earnest Money can also be deposited online through RTGS / NEFT / SWIFT / TT Remittance in our account, details of which are given below. The proof of such transfer shall be submitted with the offer in the envelope titled " Earnest Money Deposit".

Account Details: Bank Name : State Bank of India

Account Number : 35665021458 IFSC Number : SBIN0004231

Branch Name : SME Branch, Sector - 4, City Centre, Bokaro Steel City,

Jharkhand - 827004.

In case of forfeiture of EMD by BPSCL the bidder is required to reimburse the applicable GST to BPSCL.

ii) Micro & Small Enterprises (MSEs) / PSU /Govt. Undertakings and Co-operative societies will be exempted from submission of Earnest Money as per government policy. For MSEs, the exemption from submitting Earnest Money will be granted only on submission of valid copy of Udyam Registration Certificate. SSI/NSIC certificate holders should also

Date: 30.11.2022

submit Udyam Registration Certificate. Further, unit claiming exemption is required to submit copy of Udyam registration certificate clearly indicating the item category for which they are registered.

- iii) Offers not accompanied with Earnest Money Deposit (EMD) (as per clause i) or documents for exemption (as per clause ii) will be treated as INVALID.
- iv) If you withdraw your bid after opening of bids without giving any satisfactory and acceptable explanation thereof, you shall be disqualified from participating in any tender of the BPSCL for a minimum period of one (01) year and your Earnest Money will be forfeited.
- v) **Purchase Preference:** BPSCL reserves the right to exercise Purchase Preference in respect of MSEs based on the extant guidelines issued by Government of India vide Public Procurement Policy for Micro & Small Enterprises (MSEs) order 2012 & subsequent amendments.
- v) You should quote your firm rates and no negotiations will be held except with the lowest bidder, if required.
- vi) Handling of Earnest Money:
 - a. Earnest Money will be refunded to the un-successful bidder after determination of L-1 bidder and no interest will be paid upon the same. You are requested to submit your bank details for the return of EMD.
 - b. The amount of Earnest money may be adjusted against Security Deposit in case of successful bidder.
- vii) Consortium bids will not be considered unless the provision for consortium is specifically mentioned in Tender Document.
- viii) **RATE FINALIZATION**: BPSCL reserves the right to finalize the rate through either of the following modes:
 - 1. Opening of Online Price (submitted on www.buyjuntion.in) submitted at the time of techno-commercial bid.
 - 2. Through Reverse Auction to be conducted by our service provider M/s. mjunction.

Note: BPSCL may ask the techno-commercially accepted bidders to submit decrement in percentage (%) on their online price submitted at the time of techno-commercial bid. Online price bid along with % decrement shall be considered together in case online price bid is opened.

- ix) Either the representative on behalf of the Manufacturer or the Manufacturer directly be permitted to bid in a tender but not both. If authorized representative of manufacturer quote along with manufacturer, only the offer of Manufacturer will be considered as valid.
- x) One agent cannot represent two Manufacturer or quote on their behalf in a particular tender.
- xi) BPSCL reserves the right to:
 - a) Re-tender / extend the due date of submission of offer.
 - b) Accept or reject any offer / all offers in full or part at any time at any stage without assigning any reasons and without any compensation thereof to the bidders.
 - c) Modify the tender documents at any stage before the due date of tender.

Note:

- 1. Tender documents are to be downloaded from **Website: www.bpscl.com** only.
- 2. Bidders are requested to visit above website regularly for any addendum / corrigendum / Extension till opening of the NIT. **Any such changes shall not be published through Press advt.**

For and on behalf of Bokaro Power Supply Company (P) Limited

(A K Das) CGM (MM) Tel: 8986874119

Email: purchase.bpscl@gmail.com

CONDITIONS & RULES TO BE OBSERVED IN SUBMITTING TENDERS

1.01 Manner of Submission of the Tender

The tender shall be divided into 02 parts as follows:-

- a) Part A: This part shall comprise of EMD / Proof of online submission of EMD / Documents for exemption of EMD.
- b) **Part B:** This part shall comprise of Technical and Commercial details, consent on terms & conditions of NIT/ signed Tender Document along with copy of SYSTEM GENERATED **ACKNOWLEDGEMENT-SLIP FOR ONLINE SUBMISSION OF SEALED PRICE*** bid etc.

Sealed Tender through Regd. Post/Speed Post/In-person/Courier Service only, in an envelope containing 02 (Two) separate sealed envelopes (as mentioned above) with NIT No. & date of opening along with Sender's Name & Address printed on it, is to be sent to the below mentioned address:

Chief General Manager (MM) Bokaro Power Supply Co. (P) Ltd. Hall No.M-01, Old ADM Building Ispat Bhawan, Bokaro Steel City – 827001 Ph: 06452 240380, Mob: 8986874119

Note: Bidders have the option of participating in the tender by depositing/transferring EMD in BPSCL's Bank Account, details of which are provided in NIT, and sending scanned copy of documents required as per the NIT by email to purchase.bpscl@gmail.com.

* PROCESS FOR ONLINE SUBMISSION OF SEALED PRICE:

1. Online sealed Price Bid (Landed Cost per unit Excluding GST), through URL: http://www.buyjunction.in.

The process of submission of Online Price bid is as detailed hereunder-

- Step 1: Type http://www.buyjunction.in in the internet explorer.
- Step 2: Click on Login (present on Top right side of the Page)
- Step 3: Click on View Live Auctions and Tenders.
- Step 4: In the right side open/global tenders link will be displayed.
- Step 5: Click on the link for the above mentioned tender link present under Open tenders
- Step 6: Click on new user if you are not registered in buyjunction earlier. Click on Existing user in-case you have already registered in buyjunction earlier. Existing users can login with their user id and password.

Please note foreign bidders are required to select their bidding currency from the drop down menu available before proceeding further (where ever applicable).

New Users:

Steps to get your User ID and Password

- 1. Click on the required tender link under "Open Tenders"
- 2. Choose your Auction currency in-case any option is coming to select currency. Click on "New User"
- 3. Fill up the "Registration Form" and click on "Submit". All fields marked with (*) are mandatory fields.
- 4. On submitting the filled-up registration form, an auto generated email will be sent to the email address you have mentioned in the registration form containing your User ID and Password.
- 5. Changing of password on first login is compulsory.
- 6. On receipt of the User ID and Password you become an **Existing User.** Now follow the steps of existing user to login to the auction site.

Existing Users

- 1. Click on the required tender link under "Open Tender"
- 2. Click on "Existing User".
- 3. Log in with your existing user id and password for placing your bid.

4. Read through the "Bidding Procedure" to proceed further for bidding.

Bidding Procedure

After logging in with your user id and password you have to accept the "Auction Terms".

Steps to accept the "Auction terms":

- 1. Click on "Auction Terms".
- 2. Then click on "View term without DSC"
- 3. Click on the relevant auction terms appearing under "**Term**" column.
- 4. Select the check box on the left-side of the relevant auction terms.
- 5. Click on the button besides "Accept".
- 6. Then click on "Submit".
- 7. A message will be displayed to you mentioning your acceptance to terms for auction.
- 8. It is mandatory to accept the terms of online bidding in order to proceed for submission of bid.

Steps to Submit Price Bid

- 1. Click on "Bids."
- 2. Then click on "Live Auction."
- 3. Put your login password as transaction password
- 4. Select the auction id and click on add to watch list.
- 5. Now the bidding screen is visible.

6a. For Template Bidding

- 1. Click on Icon "T" on left column of bidding screen (Which will appear separately for each lot).
- 2. A template form will open where you need to fill up the price & click on evaluate at the bottom
- 3. If you want to quote the evaluated price then click on "confirm".
- 4. After clicking on the confirm button of the template window, your price will appear in the "New Bid" box.

6b. For Non-Template Bidding

- 1. Fill your Price in the "New Bid Box" visible on the bidding screen.
- 2. Select the check box at the extreme left of the bidding screen
- 3. Click on "Submit" button placed at the bottom left of the screen.
- 4. Bid once placed will have to be honoured.
- 5. You will see "Bid Accepted" in the "Result" column. This indicates that your bid is accepted and registered in the system.

Steps to take a print-out of the receipt

- 1. Once you have placed your bid, to download Bid Receipt, kindly click on "Download".
- 2. Then click on "Bid Receipt for Open Tender".
- 3. Select the auction to generate receipt.
- 4. Take print out of the same market-wise (Term List) / item-wise (Auction list).

Note: For any clarification on the bidding process please contact

- Mr. Anjan Buda 9163348263 anjan.buda1@mjunction.in
- Ms. Debalina Maity 8336991451 maity.debalina@mjunction.in
- Ms. Bingyasini Pradhan 9163348173 pradhan.bingyasini@mjunction.in
- Ms. Priyanka Mazumdar mazumdar.priyanka@mjunction.in
- Mr. Mukesh Kumar Singh-8873002741 mukesh.singh@mjunction.in for Bokaro Office

A copy of System generated acknowledgement-slip for Online submission of sealed price bid is to be submitted along with Techno-commercial Bid.

1.02 Tender Validity Period:

- i) Validity of the offer shall be at least Six (06) months from the Bid Opening Date. In case of extension of "Bid Submission / Opening Date", the validity will be counted from the extended Bid Submission End Date.
- ii) In case prices are finalized through Reverse Auction / Price Negotiation, the validity of the final quoted price shall be two (02) months from the date of discovery of the final L-1 price, either through Reverse Auction or through Price Negotiation, as the case may be or till the validity of the techno-commercial bid, whichever is later.

1.03 General Instructions:

- i) You shall clearly indicate that your prices shall remain firm in all respects till execution of the order.
- ii) Specification, quantity, unit rate, freight, insurance, packaging, forwarding, taxes etc. should be mentioned separately and clearly.
- iii) Any conditional offer or offer having deviations is liable to be rejected.
- iv) Where agent commission is involved the same is to be indicated in percentage.

- v) You have to submit Tender Document bearing your signature and seal on all the pages along with Techno-commercial offer / Consent on NIT's Terms & Conditions. Otherwise, it will be presumed that you do not accept our terms and conditions and this may lead to rejection of offer forfeiting your claims if any.
 - You are advised to mention page no. on each page of documents submitted by you. BPSCL shall not bear any responsibility in case of any loss of documents submitted by you during tender opening or thereafter.
- vi) If you are a Firm or Company, then you shall, in the forwarding letter, mention the number and names of all the partners & shall sign before submitting the same, unless the Power of Attorney holder has specifically been authorized in this respect.
- vii) The tender rates shall be written in English, both in words and figures. In case of any discrepancy between the words & figures of the rates quoted, the rates expressed in words shall be taken as correct. In case of discrepancy in the Unit Rate and Amount, Unit Rate will govern.
- viii) Price or any indication of price shall **NOT** be mentioned in the Techno-Commercial Bid.
- ix) The sealed tenders received will be opened on scheduled opening date and time in the office of Material Management, in presence of such bidders who might choose to witness the same
- x) In case the date of tender opening happens to be holiday, the tender will be opened on the next working day at the same time.
- xi) Communication regarding date of opening of Price-Bid to the techno-commercially eligible bidders will be sent only to their e-mail address given in tender documents.
- xii) Offers from two or more bidders shall summarily be rejected if they have any of the following parameters common:
 - a) Same PAN
 - b) Same GST Number
 - c) Same Postal address
 - d) Same E-mail ID
 - e) Same Mobile number
 - f) Same person signing in more than one offer/representing more than one bidder.
- xiii) BPSCL reserves the right either to reject any/all the tenders without assigning any reason thereof.

2.00 GENERAL TERMS AND CONDITIONS

2.01 BPSCL reserves the right to ask for original documents for verification at any time during tendering, evaluation and / or the execution of the contract. In case any documents / information submitted by you is / are found to be false or containing any misrepresentation or having any fraudulent declaration in it, then, in such eventuality, legal action (including cancellation of contract, banning of business dealing, criminal proceedings etc.) as deemed fit may be initiated by BPSCL against you.

2.02 **Packing:**

- a) **Responsibility for proper packing** You shall be responsible for the materials being sufficiently and properly packed, for transport by rail / road / sea / air / any combination of above, so as to ensure their being free from loss or damage on arrival at the destination.
- b) Marking of Packages, Packing, etc. Each package delivered under the contract shall bear the following:-
 - Name of the Supplier
 - Contract/Order Number
 - Consignee's name and address
 - Description and quantity of contents
 - Gross weight, net weight,
 - Distinctive number or mark which is also to be shown, for the purpose of identification, on the Supplier's packing list.
 - Catalogue Number
- 2.03 **Delivery:** Timely delivery is the essence of the contract & must be completed as per the dates specified therein.
- 2.04 **Liquidated Damages:** In the event of supply not being effected within the contractual delivery schedule given in the order, excluding the time taken by BPSCL in approval of the drawings submitted by you, liquidated damages @ ½ % of the value of delayed materials for each week of delay and part thereof, subject to a maximum of 05% of the total order value shall be recovered from you. The deduction of such damages shall not relieve you from the contractual obligations to complete the supply as stipulated in the Contract.
- 2.05 **Risk Purchase**: If you fail to deliver the material either in full or in part, within the prescribed delivery period, BPSCL shall be entitled at its option to take alternate procurement action, at your risk & cost for the unsupplied portion of the goods / items for which delivery period has expired.
- 2.06 You must mention applicable GST rate in your offer with compliance of following GST clauses:
 - a) You shall have to quote GST as extra. If not mentioned, same will be considered as EXTRA.
 - b) You shall have to pass on the tax benefit/savings, if any, on account of output taxes to BPSCL.
 - c) You shall agree to do all things not limited to providing GST invoices or other documentation as per GST Law relating to the above Services, payment of taxes, timely filing of valid statutory returns for the tax period on the Goods and Service Tax Portal etc. that may be necessary to match the invoice on GSTN common portal and enable BPSCL to claim input tax credit in relation to any GST payable under this agreement or in respect of any part under this agreement.
 - d) In case the Input Tax Credit of GST is denied or demand is recovered from BPSCL on account of any non-compliance by you, including non-payment of GST charged and recovered, you shall indemnify BPSCL in respect of all claims of tax, penalty and/or interest, loss, damage, costs, expenses and liability that may arise due to such non-compliance. Further, in case of any differential tax liability on account of any wrong classification/valuation etc. by you, BPSCL will not be liable to reimburse any part of such differential tax, interest, penalty etc. It will be your sole responsibility to discharge appropriate taxes, as applicable.
 - e) You shall have to maintain high GST compliance rating track record at any given point of time.
- 2.07 **Bank Details:** Bank details mentioning Account number, Bank name, City, Branch name and Branch code should be mentioned in the offer for NEFT / RTGS payment.
- 2.08 **Paying authority In-charge** (**F&A**), BPSCL. Bill in triplicate duly receipted on the revenue stamp with a copy of TC & Packing list etc. are to be submitted to In-Charge (F&A), Bokaro Power Supply Company (P) Limited for processing of the same.
- 2.09 <u>Inspection</u>: Acceptance of material is subject to inspection. Final Inspection will be done at BPSCL Stores after receipt of material. If any material supplied is rejected in inspection, BPSCL will inform about the same to the supplier. After such intimation of rejection by BPSCL, the Supplier shall be liable to remove / lift back such rejected

/ damaged materials within 30 days without any extra charge / cost to BPSCL, failing which, BPSCL shall reserve the right to dispose off the material, as it may deem fit, without any financial repercussions and BPSCL shall stand absolved of all responsibilities towards the material.

- 2.10 **FORCE MAJEURE:** You shall not be considered in default if delay occurs due to reason beyond your control such as acts of God, natural calamities, civil wars, fire, strike, frost, floods, riot and acts of unsurpassed power. Only those causes which have duration of more than seven days shall be considered in force majeure clause. In the event of delay due to such clause the delivery period will be extended for a length of time equal to the period of force majeure at the option of BPSCL. Order may be cancelled without any liability what so ever on the part of BPSCL.
- 2.11 **Banning of Business Dealings:** On arising of any situation or occurrence of any event as mentioned in Clause 6 of the Guidelines on Banning of Business Dealings, you shall be liable for action under and in accordance with the aforementioned Guidelines. The "Guidelines on Banning of Business Dealings" shall form part of the Tender/Contract and can be viewed on our website **www.bpscl.com**.
- 2.12 **Security Deposit:** In case Purchase order is placed upon you, you shall have to deposit Security Deposit at the rates mentioned below for satisfactory execution of the order:

Sl. No.	Purchase order value (Excluding GST)	Amount of Security Deposit			
i.	Up to Rs. 100 Lakh	03% of Purchase order value.			
ii.	Over Rs. 100 Lakhs to Rs. 500 Lakhs	02% of P.O. value, subject to minimum of Rs. 3,00,000.00.			

The Security Deposit shall be in the form of **Bank draft / Bankers Cheque / Bank Guarantee** (as per BPSCL format available at *bpscl.com*) having validity up to guarantee period of the item to be supplied plus three (03) months of claim period. **Bank Draft / Bankers Cheque** shall be in favor of Bokaro Power Supply Company (P) Ltd. payable at Bokaro Steel City.

The expression "satisfactory execution of the order," shall mean fulfillment of all obligations arising out of and in connection with the purchase order. In case of default in satisfactory execution of the order the security deposit shall be forfeited. Amount of penalty and/or Liquidated Damages imposed (if any) will be recovered from Bill / Security Deposit. If the amount of Bill / Security Deposit is not sufficient, you shall be required to pay the balance amount to BPSCL. If you do not pay the balance amount, the same shall be deducted from any sum or sums which may be due or may become due to you from BPSCL on any account whatsoever.

In case of forfeiture of Security Deposit, you shall be required to reimburse the applicable GST to BPSCL.

3.0 TECHNO-COMMERCIAL TERMS & CONDITION:

3.1 Description of Material:

Sl. No.	ITEM DESCRIPTIO	N		QUANTITY
1.	Cat. No 08500501001			
	High Chrome Cast Gri	nding Media Balls		
	(as per Technical Spec	ification given at Annex	ture –I).	
	i) Nominal Size	$: \emptyset 70 (\pm 3) \text{ mm}$: 20 MT	90 MT
	ii) Nominal Size	$: \emptyset 60 (\pm 3) \text{ mm}$: 40 MT	
	iii) Cylpeb Size	: $25 \times 25 \ (\pm 1.5) \ mm$: 30 MT	

3.2 Special Terms and Conditions:

1. Material Test Certificates, Guarantee Certificate & Packing List should be submitted along with the material.

3.3 The Commercial Bid should confirm / indicate the following:

1.	Price	To confirm 'Firm price for the duration of the Contract'.
2.	Delivery Term	FOR BPSCL Stores, B. S. City.
3.	Packing & Forwarding	Extra/Inclusive
	Charges	(Applicable amount to be mentioned in percentage or amount)
4.	Freight Charges	Extra/Inclusive
	Preight Charges	(Applicable amount to be mentioned in percentage or amount)
5.	Transit Insurance	To be arranged and borne by Supplier
6.	GST Registration	To indicate GST Registration Number
7.	GST	Extra- Applicable rate to be mentioned
	031	HSN/ SAC- to be mentioned
8.	Payment Term	100% against GRN.
9.	Delivery Period	Within 06 (six) months after placement of P.O.
10.	Guarantee Clause	A guarantee for a period of twelve (12) months from the date of commissioning / use or eighteen (18) months from date of supply, whichever is earlier shall have to be provided by the supplier. In case of any manufacturing defects discovered within the guarantee period of normal operation, the same are to be rectified or replaced by the bidder at no extra cost. If any material supplied fails within the Guarantee Period, BPSCL will inform about the same to the Supplier. After such intimation, the Supplier shall be liable to remove / lift back such materials for repair / replacement
11.	Inspection	 i) Stage-wise inspection shall be done by M/s Lloyd's Register Asia / M/s TUV India Pvt. Ltd. / M/s Bureau Veritas Industrial Service (I) Ltd. as per the attached QAP (Annexure –IV). The Supplier will have to arrange for this stage-wise inspection at his works. The cost of the inspection shall be borne by the Supplier. ii) Final inspection of the supplied equipment / materials will be done at BPSCL Stores after receipt of the same. The materials may be checked by XRF machine during this final inspection
12.	Security Deposit	To confirm as per relevant Clause of NIT
13.	LD Clause	To confirm as per relevant Clause of NIT
14.	Risk Purchase Clause	To confirm as per relevant Clause of NIT
15.	Validity Period	To confirm as per relevant Clause of NIT

4.0 PRICE BID / RA FORMAT:

Special Instruction -

- 1. In the event of the L1 Bidder backing out prior to placement of order, EMD will be forfeited and L1 bidder shall be suspended for a period of one (01) year from the date of issue of suspension order
- 2. Breakup of quoted LC (Landed Cost) shall be submitted by the L1 bidder. In case of refusal of L1 bidder to submit price break up, EMD will be forfeited and L1 bidder shall be suspended for a period of one (01) year from the date of issue of suspension order.
- 3. Price Basis Rs. per MT on Landed Cost (LC) basis excluding GST.

	Price Break Up				
Sl. No.		Rate per MT (Rs.)			
1.	Basic Price				
2.	Packing & Forwarding				
3.	Freight				
4.	Transit Insurance				
5.	Any other tax or charges				
	LANDED COST (1+2+3+4+5)				

Note: GST Extra

Technical Specification

Hi-Chrome Cast Steel Grinding Media Balls for Ball Mills

Composition and Metallurgical Properties:

Application: Used as Grinding Media for pulverising coal in Ball & Tube Mills

Standard: Specification in general must comply with BS 4844 Gr 3 F & IS 1586 with the following additional requirements.

1. Chemical Composition:

a) The heat analysis shall conform to the following composition:

Element	Minimum (%)	Maximum (%)
Carbon	2.0	3.5
Manganese	0.5	1.5
Silicon	-	1.0
Nickel	-	2.0
Molybdenum	1.0	2.5
Chromium	11.0	13.0
Copper	-	2.0
Sulphur	-	0.10
Phosphorus	-	0.10

- b) The Carbon content shall be aimed at lower range so as to get better toughness and impact resistance.
- c) Chromium / Carbon (Cr / C) ratio shall be maintained at 5.0 minimum adhering to range specified for both the elements.
- **2. Hardness:** Minimum 57 RC. The hardness measurements shall be carried out on the surface at the depth of minimum 3 mm below the original surface of the balls.
- **3. Retained Austenite:** Maximum 15%.
- **4. Micro Structure:** Wholly tempered martensitic with trigonal (Fe-Cr)₇C3 type finely dispersed complex carbides.

5. Dimensions and Tolerances:

a) **Dimension:** Dimensions of the balls shall be as specified herein.

b) **Tolerance:** The tolerances on nominal diameter of the balls shall be as follows:

Nominal Size (mm)	Acceptable Range (mm)					
Ø 70	± 3					
Ø 60	± 3					
25 × 25	± 1.5					

c) Manufacture: The material shall be melted in induction furnace.

- **6. Finish:** All castings shall be properly fettled tumbled and dressed. All surfaces shall be thoroughly cleaned.
- **7. Freedom from defects:** The casting shall be free from defects such as blow holes, sand inclusions, shrinkage cavities, cold shuts, cracks, etc., which may adversely affect the utility of the castings.
- **8. Visual Inspection:** Visual Inspection of the Grinding Media (GM) shall be carried out after fettling operation. Following defects are unacceptable:

a) Sand & Slag inclusions:

- i) Depth of defects more than 2.0 mm.
- ii) Maximum dimension of the defects is more than 3.0 mm for 25×25 Grinding Media and 6.0 mm for both 60 mm & 70 mm Grinding Media.
- iii) In the case of scattered defects, the sum of the maximum lengths of all the defects in a ball put together when more than the limits of individual defects given above.

b) Mismatch:

- i) Mismatch per face is more than 1.0 mm.
- ii) Extra ingate or depression at ingate location is more than \pm 1.0 mm over the dimensional tolerances specified for the respective sizes.
- iii) Ovality more than 7% for 60 mm & 70 mm Grinding Media.
- iv) Ovality is defined as $\frac{Maximum\ Diameter-Minimum\ Diameter}{Effective\ Diameter} \times 100$

Ovality also includes de-shaping due to parting line flashes.

9. Mechanical Properties:

a) **Micro Examination:** The micro structure of the balls after the heat treatment shall reveal carbides and tempered martensite. The retained austenite content shall not exceed 15% (to be aimed as low as possible).

10. Quality Assurance Plan (QAP):

- a) **Quality Documents Approval:** The Purchase Order will obligate the successful bidder to follow the detailed Manufacturing Quality Assurance Plan (QAP) attached herewith as Annexure –II covering the various tests proposed to be conducted as per the requirements of the Technical Specification of the item. The manufacturing of the items shall be strictly in adherence to the attached quality plan.
- b) **Test Certificates:** All necessary tests / checks shall be conducted on the materials, as per the QAP attached at Annexure –II, for ensuring compliance with the requirements stipulated herein. Other compliances, as per the requirements mentioned herein, also need to be submitted.
- c) **Dispatch:** Goods supplied will always be accompanied with Manufacturer's Test and Guarantee Certificates (period of guarantee being as stated herein). The Supplier shall furnish Manufacturer's Test and Guarantee Certificates along with each lot of dispatch. The Supplier shall be held responsible for the items not being properly packed for transport by Road to ensure them being free from loss or injury or damage at the destination.

11. Test Certificates:

Three sets (copies) of Test Certificates, comprising of the following information, shall be supplied along with the material:

- a) BPSCL's Purchase Order no.
- b) Supplier's name
- c) Heat Numbers
- d) Ball Size
- e) Consignment / Identification Numbers
- f) Results of in process Inspection for Hardness, Chemical Analysis & microstructure
- g) Results of Final Inspection, Visual Inspection, Hardness Values, Chemical Analysis, Micro Structural Report, Retained Austenite Report
- h) Heat Treatment Charts

12. Referred Standard:

- a) BS:4844-Gr. 3F
- b) IS:1586
- **13. Condition of Delivery**: In hardened and tempered condition

Reference Manufacturing QAP for High Chrome Grinding Media Balls

Sl.	Component &	Characteristics	Towns of also als	Output of all calls	Reference Document / Acceptar	nce Format of			Agency		Domonlos
51.	Operation	(Class)	Type of check	Quantum of check	Norms	Record	D	M	TPI	C	Remarks
1.	Raw Material & 1	n-process Inspecti	on								
1.1	Molten Metal	Chemical Properties (Critical)	Ladle Analysis	1 sample per Cast Heat	C: 2.0-3.5%, Mn: 0.5-1.5%, Cr: 11.0-13.0%, Mo: 1.0-2.5%, Ni: 2.0% Max, Si: 1.0% Max, Cu: 2.0% Max, S: 0.1% Max, P: 0.1% Max	Test Certificate	✓	P	W	R	
1.2	High Chrome Ball Casting	C / Cr Ratio	Chemical Analysis	1 sample per Heat	0.5 min	Test Certificate	√	P	R	R	
1.3	Do	Surface Examination & Dimension (Major)	Visual & Dimension Measurement	As per sampling plan given in QAP Sl. No. 3.1	Surface Examination (Visual) – Following defects are unacceptable: per standard given in Technical specification of NIT / PO a) Sand and Slag inclusions b) Mismatch c) Extra Ingate or Depression at Ing d) Ovality		✓	P	W	R	Ovality is defined as : (Dmax Dmin.)x 100 Nominal Dia
1.4	Do	Heat Treatment (Major)	Observation	Each HT Batch	Manufacturing Standard	HT Chart	√	P	R	R	
					LEGEND						
M	: Manufacturer	Supplier		TPI: Third Party Inspector	C	: Client / BPSCL					
TC	: Test Certificate	e		IR: Inspection Report	P	: Perform					
W	: Witness			R : Review	D	: Document					

Note: Client Review is applicable after receiving the material at BPSCL store during final inspection.

Reference Manufacturing QAP for High Chrome Grinding Media Balls

Sl.	Component	Characteristics	Characteristics Type of aleast	Characteristics Type of check Quantum of check	Reference Document / Acceptance	Format of	Agency				Domonlos
51.	& Operation	(Class)	Type of check	Quantum of check	Norms	Record	D	M	TPI	C	Remarks
2.	Final Inspection at Manufacturer's end										
2.1	Do	Micro Examination (Major)	Micro Structure	5 Balls selected from a batch of 8 drums. If any of these balls fail to comply with the required microstructure, then the entire batch of eight drums shall be rejected.	As per NIT / P.O	Test Certificate	>	P	R	R	
2.2	Do	Hardness (Critical)	Hardness	5 Balls selected from batch of 8 drums. If any of these balls fail to comply with the required hardness, then the entire batch of 8 drums shall be rejected.	57 HRC Minimum. The hardness measurements shall be carried out on the surface at the depth of minimum 3 mm below the original surface of the balls.	Test Certificate	√	P	W	R	
2.3	Do	Retained Austenite (Major)	RA Measurement	5 Balls selected from a batch of 8 drums for micro examination, If any of these balls fail to comply with the Retained Austenite requirement, then the entire batch of 8 drums shall be rejected.	Retained Austenite shall be 15% maximum.	Test Certificate	√	P	R	R	
2.4	Do	Surface Exam for Oil, Scales, Burrs and Sand (Major)	Visual	Random	The surface of the balls should be free from oil, grease, etc., except for the trace oil associated with the heat treatment & quenching process	Test Certificate	✓	P	W	R	
2.5	Empty Drums	Internal Cleanliness (Major)	Visual	Random	No foreign materials such as sand & sticky material are allowed inside the drum	Test Certificate	√	P	R	R	
2.6	Drums	Sealing Physical	Physical	100%	Each drum should be sealed with inspector's mark	Test Certificate	√	P	R	R	_
2.7	Drums	Marking	Physical	100%	As per NIT	Compliance	✓	P	R	R	

LEGEND					
M : Manufacturer / Supplier	TPI : Third Party Inspector	C : Client / BPSCL			
TC : Test Certificate	IR : Inspection Report	P : Perform			
W : Witness	R : Review	D : Document			

Note: Client Review is applicable after receiving the material at BPSCL store during final inspection.

.1. Sampling Mechanism for Visual & Dimension test to be done at Manufacturer's works:									
Sample Size	Rejection								
For 70 mm Ball: 1st Sample: 32 Balls per batch of 8 Drums randomly	3 – Failure								
For 70 mm Ball: 2 nd Sample: 32 Balls per batch of 8 Drums randomly	5 – Failure								
For 60 mm Ball & 25 × 25 cylpeb: 1st Sample: 50 Balls & cylpeb per batch of 8 Drums randomly	5 – Failure								
For 60 mm Ball & 25×25 cylpeb: 2^{nd} Sample: 50 Balls & Cylpeb per batch of 8 Drums randomly	7 – Failure								

3.2 Notes:

- a) With final dispatch of material, the Manufacturer will submit all the Test Certificates, including HT Chart, Microstructure, etc.
- b) Testing Acceptance & Rejection Procedure as per QAP
- c) Manufacturer Standard complying to relevant standard needs to be submitted.

Self Declaration

	I	son/daught	er of Shri	Aged	years
	resident ofthat:	PS	District	State	do hereby declare
1.	I am the authorized r	epresentative and signatory		ame of the firm/comp	
2.	All document(s) sub	omitted/ information provide	led by M/s		alongwith the
	Bid Document subm	itted against Tender No			
		dated			
		nitted under my knowledg forged or fabricated.			. (Name of work)
3.		n in respect of genuineness ing conditions which entitle lse.			
4.	I undertake to produc	ce all documents in origina	l for verification as and	when asked for the sa	ame by BPSCL.
		,	N 0.6' / 6A	4 . 1	
		(• •	
			Designatio	n:	

(To be submitted on Supplier's Letter Head)

Format for Acceptance of General Terms & Conditions, Commercial Terms and all other Terms of the Reverse Auction

We			(Supplier Name)
with PAN		_having registered office at	
			(Address)
agree to all the Commer	cial, General & other Terms & C	Conditions listed in the	
NIT No			
dated		_	
for procurement of		(item) through Reverse Auction.
We confirm that we are Reverse Auction and ab		s per the specification given	in NIT. We agree to participate in the
We nominate an executi	ve, whose details are given below	w, to put the bids on our beha	alf.
The details of the person	n authorized to bid on our behalf	is as follows.	
Name & Designation	:		
E-mail ID	:		
Contact phone nos.	:		
Address	:		
(Signature & Seal) Place Date	: :		

Format for submitting last quoted prices

(To be submitted on Company Letter Head of the Bidder)

To,

(To be sent within 30 mins of conclusion of the Reverse Auction)

10,		
mjunction serv	vices li	mited
1 st Floor, Tata	Centre	
43, Jawaharlal	Nehru	Road
Kolkata – 700		
Fax: 033 – 22	88 327	9
Ref: Reverse	Auctio	on forfor Bokaro Power Supply Co. (P) Ltd. held on
		e hereby confirm our Market wise last quoted prices in the Reverse Auction held on fookaro Power Supply Co. (P) Ltd., Bokaro Steel City.
Market No	•	Last Quoted Price
We also confir	rm that	we will submit item wise price break-up, within two working days from the date of Reverse Auction.
Signature	:	
Name	:	
Designation	:	
Date	:	