

Enquiry items along with quantities:

It. no	Size & Item description	Technical requirement	Quantity in kg
1	100 mm dia X 2000 mm – 4000 mm LG	Tool steel bar as per BHEL corp. Spec AA10821 (rev-2) AMD 01.	9900
TOTAL			9900 kg

Quantity variation as per below:

Item- 1, Supplies quantity are to be restricted between 9900 kg & 8100 kg.

Pre-qualification criteria:

S. No.	Description of pre-qualification requirement	Vendor Response	
		Complied / Not complied	Supporting Documents required to accept compliance
1	Manufacturer of steel round bar / their authorized representative.	(YES/NO)	Relevant certificate of being manufacturer/ authorization letter with validity (for authorized representative). Firm name and address (email, contact no. etc.) from whom bars intended to supply to be furnished.
2	Vendors should have experience of manufacturing, material testing & supplying 1.5% manganese, chromium-tungsten, Tool/Die steel bar-annealed (SPEC. AA10821), as per IS:3748,GR:T90MN6WCR2, annealed,SA105,AIASI:01, as TM A681-1990,GR T31501,BS465904-06-20221989.GR:301 or comparable standard of tool/die steel, during last 7 years (ending last day of month previous to the one in which NIT is published)	(YES/NO)	Purchase order, Mill Test Certificate in case of authorized dealer relevant documents of there OEM is also considered.
3	Company shall be certified with ISO 9001 or equivalent.	(YES/NO)	Valid certificate to be submitted. In case of authorized dealer, Valid ISO certificate of OEM is required.
4	Bidder should have atleast 30% average annual turnover of the estimated tender cost during the last 3 financial years, ending 31 Mar 2021	(YES/NO)	Vendor to furnish audited copy of profit & loss statement for 3 (three) financial years or CA certificate of annual turnover for 3 (three) financial years viz FY2018-19, FY 2019-20 & FY 2020-21, Mentioning UDIN number (If it is audited after July 2019).

Note-

1. BHEL has right to verify information / confirmation furnished, by asking additional documents, proofs etc.

ALL THE ABOVE POINT WISE PRE-QUALIFICATION REQUIREMENT ARE TO BE NECESSARILY ACCEPTED BY THE BIDDERS FOR THEIR OFFERS TO BE CONSIDERED FAILING WHICH OFFERS SHALL BE REJECTED.

MAKE IN INDIA format (to be filled by OeMs of the participating bidders)

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL

MATERIAL MANAGEMENT – STEEL DIVISION

For this Procurement, Government of India Public Procurement (Preference to Make in India), Order 2017 with its amendments and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

*As per the Provisions of this order, please submit **a self-certification complying with the conditions below on company letterhead duly signed by competent authority.***

I, hereby declare on behalf of M/s. that we are participating in the Enquiry No. floated by BHEL, Bhopal (MP), India and shall comply with following:

1. Public Procurement (Preference to Make in India), Order 2017 *with its amendments* and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

(a) A supplier will be treated as “**Class-I Local Suppliers**”, if the items quoted by bidder have local content equal to or more than 50%.

(b) ‘**Local Content**’ means the amount of value added in India, which shall be total value of item quoted (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, **in percent**.

2. I hereby declare that our firm qualifies as “**Class-I Local Suppliers**”.

a. The Local Content in the items quoted under this Enquiry is Percent

b. Details of location(s) in India where this value addition shall be done, is/are as follows:

- (a)
- (b)
- (c)

(.....)

For M/s.

(Seal & Sign)

AA 108 21 : 1.5 % MANGANESE - CHROMIUM - TUNGSTEN TOOL AND DIE STEEL BARS - ANNEALED

- I PREFACE SHEET :**
- i) Equivalent standards is modified as 'Comparable standards'.
 - ii) *At item 2.b) year reference of ASTM is deleted.*
 - iii) Acceptable Commercial Grades / Suppliers is modified "Suggested / Probable Suppliers And Grades".
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- New clause is introduced at the end as given below :
- "14. REFERRED STANDARDS (Latest Publications Including Amendment);**
- 1) IS : 1500 2) IS : 3739 3) IS : 3748

Please see Instructions on the reverse

Ref :	Amd. No.	Approved MRC S&GPS	Issued Corp.R&D	Date	Cum.Sr.No.
CI 22.5.7 of MOM of MRC-S&GPS	01			1.2.99	A 2493



Nominal Size, mm		Tolerance, mm	
Over	Upto & incld.	Permissible deviation	Out of round or out of square
--	25	± 0.50	0.50
25	50	± 0.75	0.75
50	80	± 1.00	1.00
80	100	± 1.25	1.25
100	125	± 1.50	1.50
125	160	± 2.00	2.00
160	200	± 2.50	2.50

5.2.1.2 Flat Bars:

The permissible deviation in size for hot rolled flat bars shall be as follows:

Nominal width, mm			Tolerance, mm		
Over	Upto & incld.	on width	On thickness		
			6 to 13 incld.	Over 13 to 25 incld.	Over 25 to 50 incld.
--	50	± 1.0	± 0.5	± 0.8	± 1.0
50	100	± 2.0	± 0.5	± 1.0	± 1.5
100	150	± 3.0			± 2.0

5.2.1.3 Straightness For Hot Rolled Bars:

The permissible deviation shall not exceed 5 mm in any 1000 mm length of the bar.

5.2.2 Forged Bars:

Tolerance on size for forged bars shall be +8 percent of the size.

5.3 Length:

Bars shall be supplied in 2 to 4 metres length or in multiples with maximum of 10 percent shorts down to 1 metre.

6. MANUFACTURE:

Material shall be manufactured from fully killed steel.

Sufficient reduction and discard shall be made from each ingot to ensure freedom from piping, segregation and other defects.



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The material shall be rough machined, chipped or ground to remove all surface imperfections which are likely to produce defects in the finished product.

If the material is conditioned by grinding or chipping, depth of conditioning shall not exceed half the machining allowance per side and width of conditioning shall be atleast four times its greatest depth.

7. FREEDOM FROM DEFECTS:

The material shall be free from defects such as seams, flakes, laps, cracks, pipes, bursts, excessive non-metallic inclusions and injurious metallic segregates.

Total decarburization shall be kept at the minimum level and in no case shall exceed 80 percent of the machining allowance.

8. CHEMICAL COMPOSITION:

The melt analysis of steel and the permissible variation in the composition of the finished product from the melt analysis shall be as follows:

Element	Percent		Permissible variation percent, max.
	Min.	Max.	
Carbon	0.85	0.95	± 0.03
Silicon	0.10	0.35	± 0.03
Manganese	1.25	1.75	± 0.06
Chromium	0.30	0.60	± 0.05
Tungsten	0.40	0.60	± 0.04
Vanadium *	-	0.25	+ 0.02
Sulphur	-	0.035	+ 0.005
Phosphorus	-	0.035	+ 0.005

* Optional

Note:

Elements not quoted above shall not be added to the steel, other than for the purpose of finishing the melt and shall not exceed the following limits:

Element	Percent, Max.
Nickel	0.25
Molybdenum	0.25
Copper	0.35
Cobalt	0.10
Tin	0.05

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9. TEST SAMPLES:

One sample product shall be taken from each melt for chemical analysis.

For hardness test 5 percent of the number of pieces in the charge upto a maximum of 10 and minimum of 2 covering all sizes shall be taken.

10. MECHANICAL PROPERTIES:Hardness (Brinell): As Received Condition:

When tested in accordance with IS: 1500, the test pieces shall show a Brinell hardness of 230 HB maximum.

11. RESPONSE TO HEAT TREATMENT:

Bars shall be capable of responding to the heat treatment specified below and the material must achieve a minimum Rockwell hardness of 61 HRC without showing any sign of overheating.

Harden in oil at temperature of 800 - 830°C.

Temper at a suitable temperature between 170 - 300°C.

12. TEST CERTIFICATES:

Three copies of test certificates shall be supplied unless otherwise stated on the order.

The test certificate shall bear the following information:

BHEL References:

AA 108 21 : Rev. No. 02

BHEL Order No.

Supplier's References:

Name.

Identification No.

Melt No.

Details of heat treatment.

Results of Tests:

Results of dimensional inspection.

Results of chemical analysis and hardness tests in annealed and hardened and tempered conditions.

13. PACKING AND MARKING:

The bars shall be suitably packed in bundles to prevent corrosion and damage during transit.



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Bars of sizes upto and incl. 45 mm shall be bundled together.

Bars above 45 mm in diameter or of equivalent cross-sectional area shall be stamped 'AA 108 21' and Melt No. on the side near the end or on the end face.

A metal label shall be securely attached to each bundle and shall bear the following information.

AA 108 21 : 1.5% Mn-Cr-W Tool & Die Steel Bars - Annealed

BHEL Order No.

Consignment or Identification No.

Melt No.

Size & Weight.

Supplier's Name.

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
QA-HYDRO
STANDARD QUALITY ASSURANCE PLAN FOR BAR MATERIAL

QAP NO. : QA/HT/1040 Rev. 00 Dated - 16.05.2018
 SPECIFICATION : AA 10821 Rev. 02 (1.5 % Manganese - Chromium - Tungsten Tool & Die steel Bars - Annealed)
 SUPPLY CONDITION : Hot Rolled / Forged & Annealed

1	2	3	4	5	6	7	8	9	10	11	12	
SL. NO.	STAGE	CHARACTERSTIC	METHOD	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	P	V	W	REMARKS	
1	Raw Material	Chemical	Chemical test	1 Sample / Heat	AA10821 Rev. 02	AA10821 Rev. 02	Mill Test Certificate	1	2	-	-	
2	Heat Treatment	Hardened & Tempered	Hardened & Tempered	1 Sample / Heat & H.T. Batch	-do-	-do-	H.T. Chart	1	2	-	-	
3	Final Stage	Stamping on test bar for mechanical Testing	Hard Stamp by TPIA	1 Sample / Heat & H.T. Batch	-do-	-do-	Stage Inspection Report	1	-	2	Test Piece duly stamped by TPIA	
		Mechanical Properties	i) Hardness Test	As Specified in AA 10821 Rev. 02	1 Sample / Heat & H.T. Batch	-do-	-do-	Supplier's Test Certificate	1	-	2	In case of traders witness by TPIA to be conducted at NABL approved Lab.
		Chemical Composition	Chemical test	1 sample / Heat	-do-	-do-	Supplier's Test Certificate	1	-	2		
		Visual Examination	Visual	100%	-do-	Bars shall be free fom surface defects, bends & twists	Supplier,s Dimensional Report	1	-	2		
		Dimension & Tolerance	Measurement	100%	-do-	AA10821 Rev. 02	-do-	1	-	2		
4	Dispatch	Identification Marking	Hard Stamping	100%	-do-	-do-	1. Heat No. 2. P.O. No. 3. Spec No. 4. Size 5. Supplier Name	1	-	2	Identification & marking shall be done on face of each bar & TPIA hard stamp to be done on both face of each bar.	
5	Document submission duly certified by TPIA	1) Mill test certificate (Mechanical & Chemical) 2) Supplier Test certificate (Mechanical & Chemical) 3) Dimensional Inspection report. 4) Heat Treatment Chart										

Note : Final Testing of Material will be done at BHEL Bhopal works before clearance of SRV.

1 = Manufacturer / Trader
 2 = BHEL / BHEL's TPIA

P = Perform Verification
 W = Witness

Agadhhar
 16/05/18
आधर शर्मा (P) / **आधर शर्मा**
 वरिष्ठ अभियंता (सूक्ष्म संश्लेषण) / Sr. Engineer (QMS)
 गुणता नियंत्रण-जल उत्पादन / Quality Control/Water
 बी.एच.ई.एल., भोपाल / BHEL, BHOPAL

H.T.E

Sharma
 16/05/18
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 वरिष्ठ अभियंता (सूक्ष्म संश्लेषण) / Sr. Engineer (QMS)
 एच.टी.ई.एल., भोपाल / BHEL, Bhopal

Soni
 16/05/18
महेश सोनी / **MAHENDRA SONI**
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