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Company

## Bharat Heavy Electricals Limited (Seamless steel Tube Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

<b>TITLE:</b> REQUEST FOR EXPRESSION OF INTEREST FOR <b>REGISTRATION OF MANUFACTURERS</b> for the SUPPLY OF <b>MANDREL BAR</b> FOR PRODUCTION OF SEAMLESS STEEL TUBES AT SSTP/BHEL/TRICHY	Phone: +91 431 257 85 02 Fax : +91 431 252 0464 Email : <a href="mailto:tpn@bheltry.co.in">tpn@bheltry.co.in</a> Web : <a href="http://www.bhel.com">www.bhel.com</a>
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<b>Reference Number: SSTP / MANDERLBAR / 12-13 / 03</b>	<b>Date: 01/11/2012</b>	<b>Due date for submission of application: 30/11/2012</b>
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Seamless Steel Tube Plant / BHEL / Trichy is looking for Indigenous / Import suppliers for Mandrel Bar of Dia 130 X Length 16700 MM Material 28 Ni Cr Mo V10 of Din 1.2740 (Forged /Rolled) as per our TDC/TE/RM02 REV 05 DATED 24/08/2012 required for production of seamless steel tubes at SSTP/BHEL/Trichy

Interested manufacturers (Indigenous & Import) are requested to submit the following forms for registration as a supplier. The respective vendor registration forms could be downloaded from our Web site ([www.bhel.com](http://www.bhel.com)).

List of Forms - Indigenous Suppliers	List of Forms - Import Suppliers
1. Vendor Registration Forms – Indigenous	1. Vendor Registration Forms - Foreign
2. Clause wise confirmation for TDC for supply of carbon / Alloy steel blooms as per Annexure –A	2. Authorisation letter for Representative
	3. Agency agreement between the Representative and Principals
	4. Clause wise confirmation for TDC for supply of carbon / Alloy steel blooms as per Annexure –A

**Manufacturers alone** need to be send their vendor registration formats for this requirement.

Dealers/Marketing partner for a manufactures will be considered based on the authorization / agreement from the manufacturer.

Sr.Dy. General Manager / MM /SSTP

Phone: 0431-257 8502, Fax: 0431-252 0464.

Mail: [tpn@bheltry.co.in](mailto:tpn@bheltry.co.in).

**Pre-Qualification Criteria for Forged /Rolled Steel MANDREL BAR Suppliers**

The VENDOR has to necessarily provide the following details, for making an assessment of the firm's capability and competency.

Sl. No.	PARTICULARS	Vendor's response with ref. cl. No. of detailed offer.
01	The Technical requirement shall be commented clause wise as against each point as per <b>TDC/TE/RM02 REV 05 DATED 24/08/2012.</b>	
02	Number of Years of Experience and facilities Available with the vendor in the field of design, manufacture and supply of similar <b>Mandrel bar</b> to similar industries	
03	Number of Mandel Bar supplied till date. Attach a reference list of customers with year of supply and contact address.	
04	Details of Design Set-Up and Technology Back-Up with the vendor for the manufacture of the Mandrel Bar	
05	Details on International Standards followed in Design if any	
06	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed)	
07	Any Additional Data to supplement the manufacturing capability of the vendor.	

**General :**

1. Latest version of Vendor Application form shall be downloaded from the BHEL web page [www.bhel.com](http://www.bhel.com) and submission of any old version of vendor registration forms shall not be considered.
2. In case of any representation by marketing Agents, the original manufacturer supplying mandrel bar shall also be evaluated for registration as a supplier. In this case, SSTP requires vendor registration forms for both marketing channel & the original manufacturer with all essential annexure as indicated in the clause No: 8.
3. Submission of Contract copy between Marketing Channel and the original manufacturer is a must for marketing channel.
4. Similarly, the Indian representatives who are only doing liaison work shall also submit the Agent Agreement Copy between the Indian representative and the supplier.

5. For vendor application forms from the import sources, the Language used in all annexure shall be in ENGLISH only. BHEL shall not consider the application, if the details are given in any other language other than ENGLISH.
6. In case of import suppliers, the following documents / annexure are must for registration. If any of the following documents found missing / not attached with the vendor application form then application form will liable for rejection.
  - a. Company catalogue / Brochure / Technical Literatures etc.,
  - b. Authorisation letter in case of Indian representative and contract copy between marketing channel / Partner and the original manufacturer.
  - c. Banker's Certificate as to credit worthiness of the supplier.
  - d. D & B / Credit form is must for both Marketing Channel / Supplier
  - e. Valid ISO certificate for the original manufacturer.
  - f. Copy of audited annual Accounts for the last 3 years.
  - g. Experience List / List of present customers with name & Address for product for which registration has been sought.
7. Expression of Interest from any Trading Agent / Traders shall not be considered and shall be rejected.

Sr.Dy.General.Manager / MM  
Seamless Steel Tube plant

BHEL, Tiruchirapalli-620 014		SSTP / Tool Engineering		Technical Delivery Conditions	
Product : Forged / Rolled Alloy steel bar for Push Bench Mandrel					
Document No.		Revision No.		Effective Date	
TDC/TE/RM 02		05		24.08.2012	
Revision Record		05 - In clause 1.0, the size 130 X 12,600 mm is deleted In clause 4.0, the supply condition is forged / rolled and details added for forging			

### 1.0 Product :

Forged / Rolled Alloy steel bar - Dia. 130 X 16,700 mm long.

### 2.0 Application :

The alloy steel bars are to prepare the Push Bench Mandrel bars used for Production of Seamless Steel Tubes at SSTP. These bars will be pushing the elongated shell into Push Bench comprising of roller cages with diminishing diameters. During operation, the bars will be subjected to a working temperature of 600°C and a pushing force of 60 to 120 MT.

### 3.0 Raw Material :

28 Ni Cr Mo V 10 of DIN No. 1.2740 (Forged / Rolled)

### Chemical Composition :

C	Mn	Si	S	P	Ni	Cr	Mo	V
0.24	0.20	0.30	0.030 max	0.030 max	2.30	0.60	0.50	0.25
0.32	0.40	0.50			2.60	0.90	0.70	0.32

### 4.0 Condition of supply :

#### 4.1 Forged :

Raw material is to be forged to ensure uniformity of structure & strength with reduction ratio in cross section area of 4:1 from ingot to final forging, close to final shape and size. Flow lines to be parallel to the axis of product and shall meet requirements of **IS : 13387(latest)**. The forging supplier shall furnish TC clearly indicating the size of ingot (cross section X length) used and the forging reduction ratio achieved. Forging shall undergo post forge **Stress Relieving at 650 degree C for 24 Hrs.** with furnace cooling and further **Spheroidizing Annealing at 800 degree C for 20 – 30 Hrs.** and cooled in furnace.

4.1.1 **Melting process** : Electric Arc Furnace – Ladle Refining Furnace – Vacuum De-gassed.

4.1.2 **Inclusion rating** shall be as per **ASTM E45** – Thick series 0.5 max acceptable. Thin series : 2max.

4.1.3 **Grain size** shall be 6 or finer.

#### 4.2 Rolled :

The raw material supplier shall furnish TC clearly indicating the size of ingot (cross section X length) used for the rolling

4.2.1 **Melting process** : Electric Arc Furnace – Ladle Refining Furnace – Vacuum De-gassed.

### 5. Dimension & Tolerance :

a) Diameter : Dia. 130 ± 2 mm

b) Length : 16,700 + 20 mm

c) Straightness : The bars shall be straight and the deviation from the straightness shall not exceed max. 1 mm per meter and a maximum of 5 mm for the entire length.

BHEL, Tiruchirapalli-620 014	SSTP / Tool Engineering	Technical Delivery Conditions	
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#### 6. Heat Treatment :

Hardened and tempered to 260 – 295 HB

#### 7. Non Destructive Test

##### Ultrasonic Testing :

Ultrasonic testing shall be done on all the bars in accordance with SA 388. Acceptance Standard in accordance with AM 203.2(c), ASME Sec VIII Div.2. Shall be certified by NDT Level II qualified personnel.

#### 8. Freedom from defects :

The bars shall be free from surface marks, dents, laps and cracks. This shall be ensured by LPI or MPI.

The bars must be free from internal defects such as pores, cracks, blow holes and macroscopic non-metallic inclusions that could have a significant effect on workability and usability.

#### 9. Test Certificate

The bars shall be supplied with Test Certificate from the manufacturer indicating the heat number, ladle analysis, method of manufacture, heat treatment condition and test results of hardness & ultrasonic testing. In case, raw material is procured from outside by the supplier, the original Test Certificate of raw material manufacturer shall be furnished.


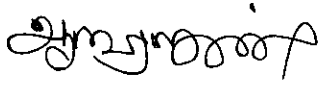
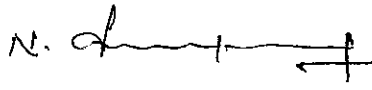
#### 10. Marking and packing

The heat number and steel grade shall be punched on both cross section of each bar. The bars shall be rigidly bundled with rolled steel strips **IN A SPAN OF 1 METRE AND FOR THE ENTIRE LENGTH** to avoid any damage during transit. Each bundle shall have a maximum of 3 bars and minimum of 2 bars.

#### 11. Inspection at Supplier's Works:

The steel bars are subjected to inspection at supplier's works by inspectors authorized by BHEL.

Required inspection facilities shall be provided to ensure the bars are made in accordance with this TDC.

Prepared By	Reviewed By	Approved By
 SR ADDL ENGR/TE	 SM / QA & C	 MGR / TE