



ISO 9001:2008,  
14001:2004,  
50001:2011 &  
OHSAS 18000  
MAHARATNA  
COMPANY

**MATERIAL MANAGEMENT (PURCHASE)**  
**CENTRAL FOUNDRY FORGE PLANT, BHEL HARDWAR**  
**RANIPUR, HARIDWAR (INDIA) – 249403**  
Phone No.+91-1334-281277/281299, FAX No. 225892  
**e-mail : v\_kumar@bhelhwr.co.in; anuragkk@bhelhwr.co.in;**  
**ranjank@bhelhwr.co.in**

**Sub:** Open Tender Enquiry No: 201701141/5412 due on 30.06.2017, at 2.00 PM

Dear Sir,

We are pleased to invite offer in **E-Tender** as per enclosed specifications & terms and conditions for the under mentioned items.

| SI No | Tender No      | Description of Material                                                                                                               | Qty       | Date & Time Of Opening   |
|-------|----------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------|
| 01    | 201701141/5412 | Material Code: <b>FF5330599040</b><br>Refractory Ingates<br>Drawing No. 03/009/4 (Rev 03)<br>Spec: FF06010 Rev 03<br>Size: Dia. 70 MM | 300 PR    | 30.06.2017<br>at 2.00 PM |
| 02    |                | Material Code: <b>FF5330898056</b><br>Refractory Tees<br>Drawing No. 03/009/3 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 80 MM     | 800 Nos.  |                          |
| 03    |                | Material Code: <b>FF5330898072</b><br>Refractory Tees<br>Drawing No. 03/009/3 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 100 MM    | 400 Nos.  |                          |
| 04    |                | Material Code: <b>FF5330898080</b><br>Refractory Tees<br>Drawing No. 03/009/3 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 120 MM    | 500 Nos.  |                          |
| 05    |                | Material Code: <b>FF5330898099</b><br>Refractory Tees<br>Drawing No. 03/009/3 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 150 MM    | 400 Nos.  |                          |
| 06    |                | Material Code: <b>FF5330998042</b><br>Refractory Knees<br>Drawing No. 03/009/2 Rev. C<br>Spec: FF06010 Rev 03<br>Size: Dia. 70 MM     | 400 Nos.  |                          |
| 07    |                | Material Code: <b>FF5330998069</b><br>Refractory Knees<br>Drawing No. 03/009/2 Rev. C<br>Spec: FF06010 Rev 03<br>Size: Dia. 90 MM     | 1000 Nos. |                          |

|    |                                                                                                                                               |           |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 08 | Material Code: <b>FF5330998085</b><br>Refractory Knees<br>Drawing No. 03/009/2 Rev. C<br>Spec: FF06010 Rev 03<br>Size: Dia. 120 MM            | 500 Nos.  |
| 09 | Material Code: <b>FF5331060013</b><br>Refractory Pouring Cup<br>Drawing No. FT-11-19 Rev 04<br>Spec: FF06010 Rev 03<br>Size: Dia. 100 MM      | 400 Nos.  |
| 10 | Material Code: <b>FF5331092063</b><br>Refractory Sleeves-50 MM<br>Drawing No. 03/009/1/1 Rev. 01<br>Spec: FF06010 Rev 03<br>Size: Dia. 90 MM  | 100 Nos.  |
| 11 | Material Code: <b>FF5331093060</b><br>Refractory Sleeves-H1 MM<br>Drawing No. 03/009/1 Rev. 04<br>Spec: FF06010 Rev 03<br>Size: Dia. 90 MM    | 100 Nos.  |
| 12 | Material Code: <b>FF5331095020</b><br>Refractory Sleeves-HT"H"MM<br>Drawing No. 03/009/1 Rev. 04<br>Spec: FF06010 Rev 03<br>Size: Dia. 50 MM  | 100 Nos.  |
| 13 | Material Code: <b>FF5331095089</b><br>Refractory Sleeves-HT"H"MM<br>Drawing No. 03/009/1 Rev. 04<br>Spec: FF06010 Rev 03<br>Size: Dia. 120 MM | 1500 Nos. |
| 14 | Material Code: <b>FF5331095097</b><br>Refractory Sleeves-HT"H"MM<br>Drawing No. 03/009/1 Rev. 04<br>Spec: FF06010 Rev 03<br>Size: Dia. 150 MM | 800 Nos.  |
| 15 | Material Code: <b>FF5334186042</b><br>Refractory Reducers<br>Drawing No. 03/009/8 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 80/70 MM      | 500 Nos.  |
| 16 | Material Code: <b>FF5334186050</b><br>Refractory Reducers<br>Drawing No. 03/009/8 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 90/80 MM      | 500 Nos.  |
| 17 | Material Code: <b>FF5334186069</b><br>Refractory Reducers<br>Drawing No. 03/009/8 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 100/90 MM     | 1200 Nos. |
| 18 | Material Code: <b>FF5334186077</b><br>Refractory Reducers<br>Drawing No. 03/009/8 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 120/100 MM    | 1200 Nos. |

|    |  |                                                                                                                                            |           |  |
|----|--|--------------------------------------------------------------------------------------------------------------------------------------------|-----------|--|
| 19 |  | Material Code: <b>FF5334186085</b><br>Refractory Reducers<br>Drawing No. 03/009/8 Rev. 03<br>Spec: FF06010 Rev 03<br>Size: Dia. 150/120 MM | 800 Nos.  |  |
| 20 |  | Material Code: <b>FF5335072024</b><br>Abutment Brick (Type-II)<br>Spec: AA53304 Rev 03<br>Size: RMC-006 R00 (MARK-A2)                      | 1000 Nos. |  |
| 21 |  | Material Code: <b>FF5335074019</b><br>Bogie Bricks (Type-I)<br>Spec: AA53304 Rev 03<br>Size: RMC-002 R00 (MARK-B1)                         | 500 Nos.  |  |
| 22 |  | Material Code: <b>FF53355077018</b><br>Washer Bricks<br>Drawing No.-23271013A Rev00<br>(MARK-OH) (Type- A)<br>Spec: AA53304 Rev 03         | 15 Nos.   |  |

Kindly read terms and conditions, Offer not in accordance with the instructions is liable to be disqualified or ignored.

Please visit [www.bhel.com](http://www.bhel.com) or [www.bhelhwr.co.in](http://www.bhelhwr.co.in) for more details & corrigendum if any for the tender enquiry.

Offers are to be submitted online in E-tender portal at <https://bheleps.buyjunction.in/>

**Offer to be submitted only on e-procurement portal. Hard copy of offer is not required to be submitted to CFFP. Any offers received in Hard copy shall not be accepted and straightaway rejected by CFFP.**

Before proceeding for submitting quotation in e-portal, supplier to ensure that they are having a valid Digital Signature Certificate (DSC). Valid DSC refers to an Active Signing and Encryption Certificate (both), with specification Class III SHA2 2048 bit

Unregistered vendors should download Vendor Registration Form and submit same duly filled along with offer.

Thanking You,

Yours Faithfully,  
For & On behalf of CFFP, BHEL, Hardwar

(Vipin Kumar)  
Engineer (Purchase)

**Note:** Corrigendum if any shall not be published, kindly refer websites for any changes.

## **PRE QUALIFICATION REQUIREMENT**

**Ref: Tender enquiry no. 201701141/5412**

Pre-qualification criteria for above tender enquiry are as under:

- (a) Vendor must either be Manufacturer of foundry refractories or else be traders of the same. If the vendor is trader, proof of authorization from the original manufacturer should be provided.
- (b) Vendor should provide documentary proof (purchase order copy) of supply of foundry refractories (shaped refractories like tees, bend, sleeves, etc shall be considered as valid. Order for refractory bricks used in furnaces/ladle shall not be considered) (of the same manufacturer as quoted in this tender) to foundries in India or abroad. The proof submitted should not be more than 2 years old from the date of tender opening date.



संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी. - हरिद्वार)

FF06010 Rev 03

PLANT PURCHASE SPECIFICATION  
(CFFP - HARDWAR)

पृष्ठ का  
Page 1 of 3

**FOUNDRY REFRACTORIES**

(SLEEVES, KNEES, REDUCERS, TEES, POURING CUP)

**1. General**

This specification covers the requirement of Foundry refractory items to be used in foundries for making Steel Castings.

**2. Application**

The refractory items will be used in making gating system in the moulds for entry of liquid steel at temperature in the range of 1570 °C to 1620 °C.

**3. Compliance with national standard.**

This specification is based on IS:8-1994

**4. Physical Properties**

4.1 The sleeve should be made of High Heat Duty fire clay suitable to withstand the metalostatic erosion, which is equivalent to Type 2 of specification IS:8 – 1994

4.2 Refractory sleeves are to be manufactured by wet process using grain size 2 mm max.

4.3 The refractories shall be compact, of homogeneous texture and free from cracks, voids, surface roughness, (felt by rubbing with finger), low melting spots and inclusions. Sampling may be done as per IS1528

4.4 These refractories shall be burnt evenly throughout without any soft spots and inclusions.

4.5 The refractories should be suitable for cutting with refractory cutting disc without excess heating/emission of sparks.

4.6 The properties when tested in laboratory as per IS-1528 should be as per the following table.

|                                                           |                      |
|-----------------------------------------------------------|----------------------|
| Apparent porosity                                         | 23 max               |
| Cold crushing strength                                    | 20 Mpa. Min          |
| Permanent linear change after heating at 1450°C for 2 hrs | ±1.0%                |
| Alumina ,<br>Iron Oxide                                   | 38% min,<br>2.2% max |

|                            |                |                                              |                                                                       |                                                          |
|----------------------------|----------------|----------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------|
| RMI                        | SN GHOSH       | अनुवादक                                      | TRANSLATED BY                                                         |                                                          |
| MPIC                       | SHANTANU       | विवर्णकर्ता                                  | WORKED BY                                                             | T DAVE                                                   |
| CHAIRMAN PPSC              | R PARTHASARTHY | जांचकर्ता                                    | CHECKED BY                                                            | AKC                                                      |
| सहमत विभाग<br>AGREED DEPT. | नाम<br>NAME    | वर्षांक एवं हस्ताक्षर<br>DATE &<br>SIGNATURE | SECRETARY PPSC                                                        | DR. MS RAWAT                                             |
|                            |                |                                              | स्वीकृति : संस्थान मानक समिति<br>APPROVED : PLANT STANDARDS COMMITTEE |                                                          |
|                            |                |                                              | प्राणी : फाउण्ड्री टेक्नालॉजी<br>PREPARED : FOUNDRY TECH              | दिनांक :<br>ISSUED : FOUNDRY TECHNOLOGY<br>DATE 03.08.10 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                       |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|------------------------|--------------|---------------------------|--------|---------------------------------------------------------------------------------------|--|-------------------------|-----|---------------------------------------------------------------------------------------|--|
| दिनांक एवं हस्ताक्षर<br>SIGN & DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार)                                       |  | <b>FF 06010 Rev 03</b> |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>PLANT PURCHASE SPECIFICATION</b><br>(CFFP - HARDWAR)                               |  | पृष्ठ<br>Page          | का<br>2 of 3 |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| SUPPERSEDES<br>INVENTORY NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>5. Acceptance</b><br><br>For supplies from approved vendors, each consignment shall be accepted on the basis of supplier's TC and GC. Material shall be checked as per Clause 4.3 and 4.5 on random sample basis.<br>Surveillance checking shall be done for properties mentioned in Clause 4.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                       |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| सावधानीपूर्वक संख्या<br>को अधिष्ठापित करना                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>6. Test certificate</b><br><br>6.1 Unless otherwise specified, one original and three copies of original manufacturer's test certificates shall be supplied with each consignment bearing the following information. In order to facilitate quick clearance of material, the supplier shall ensure to send a copy of test certificate along with despatch document. <ul style="list-style-type: none"> <li>a. BHEL PO No. with Date</li> <li>b. Specification No.</li> <li>c. Supplier reference / trade mark</li> <li>d. Test results as per Clause 4.6</li> <li>e. Any other specific information which the supplier would like to convey.</li> </ul> 6.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to supplier's invoice stating the batch No., lot No., etc of the supply. |                                                                                       |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| <b>7. Packing and Marking</b><br><br>a) The supplier will ensure the supply of refractories to CFFP in dry condition without breakage or damage.<br>b) Each piece of refractory item should have supplier's identification mark, and size as mentioned in the consignment document.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                       |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| <b>8. Inspection, Deviation and Replacement:</b><br><br>8.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance about readiness of material enclosing a copy of test certificate of the material offered for inspection. However inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter that the material being furnished is in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests elsewhere.<br><br>8.2 If the material received at CFFP is not found in accordance with the requirements, it shall be liable to be rejected and the supplier will have to replace it free of cost at the earliest.<br><br>8.3 For any deviation from the specification sought by the supplier, prior approval of BHEL must be obtained in writing. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                       |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| हस्ताक्षर एवं दिनांक<br>SIGN & DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <table border="1"> <tr> <td>निर्माणकर्ता<br/>WORKED BY</td> <td>T DAVE</td> <td></td> <td></td> </tr> <tr> <td>जांचकर्ता<br/>CHECKED BY</td> <td>AKC</td> <td></td> <td></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                       |  |                        |              | निर्माणकर्ता<br>WORKED BY | T DAVE |  |  | जांचकर्ता<br>CHECKED BY | AKC |  |  |
| निर्माणकर्ता<br>WORKED BY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | T DAVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |
| जांचकर्ता<br>CHECKED BY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AKC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                        |              |                           |        |                                                                                       |  |                         |     |                                                                                       |  |

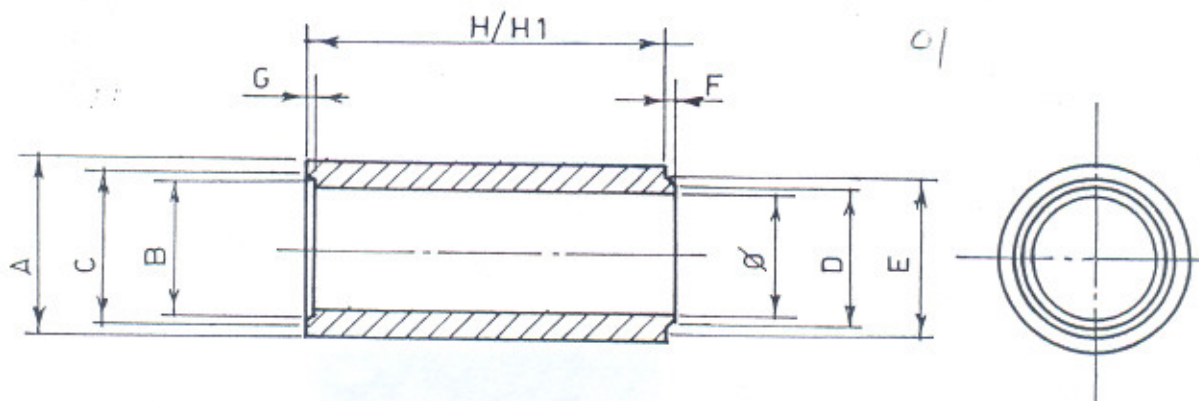
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स्वतंत्राधिकार एवं गोपनीयता  
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो या किया जाए।

|                                                                                                                                                                                                                     |                          |                                                         |                                                                                                                                                                                             |                           |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------|
| दिनांक एवं हस्ताक्षर<br>SIGN & DATE                                                                                                                                                                                 |                          | संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी - हरिद्वार)         |                                                                                                                                                                                             | <b>FF06010 Rev 03</b>     |            |
|                                                                                                                                                                                                                     |                          | <b>PLANT PURCHASE SPECIFICATION</b><br>(CFFP - HARDWAR) |                                                                                                                                                                                             | पृष्ठ<br>Page             | का<br>of   |
| SUPERSEDES<br>INVENTORY NO.                                                                                                                                                                                         | <b>RECORD OF CHANGES</b> |                                                         |                                                                                                                                                                                             |                           |            |
| राशदी<br>युकी                                                                                                                                                                                                       | REV<br>CODE              | NO. OF CHANGES                                          | NATURE OF CHANGE                                                                                                                                                                            | SIGN                      | DATE       |
| COPYRIGHT AND CONFIDENTIAL<br>The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company | 01                       |                                                         | Comments of French expert Mr. Dumas incorporated in Clause No. 4 & 8                                                                                                                        |                           | 28.3.02    |
|                                                                                                                                                                                                                     | 02                       |                                                         | Clause 6 & 7 modified to incorporate original manufacturer's test certificate and packing conditions                                                                                        |                           | 29.8.09    |
|                                                                                                                                                                                                                     | 03                       |                                                         | Individual packing of sleeves deleted. Clause 4 modified for removal of deletion of Pyrometric Cone equivalent. Acceptance clause modified to introduce surveillance checking of clause 4.6 |                           | 03.08.2010 |
| <b>DISTRIBUTION OF PRINTS</b>                                                                                                                                                                                       |                          |                                                         |                                                                                                                                                                                             |                           |            |
| स्वत्वाधिकार एवं गोपनीयता<br>इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में है, निषिद्ध है।                        | RMI                      |                                                         | ✓                                                                                                                                                                                           |                           |            |
|                                                                                                                                                                                                                     | STANDARD SECTION         |                                                         | ✓                                                                                                                                                                                           |                           |            |
|                                                                                                                                                                                                                     | MPIC                     |                                                         | ✓                                                                                                                                                                                           |                           |            |
| दिनांक एवं हस्ताक्षर<br>SIGN & DATE                                                                                                                                                                                 |                          |                                                         |                                                                                                                                                                                             | निर्माणकर्ता<br>WORKED BY | T DAVE     |
| राशदी<br>युकी                                                                                                                                                                                                       |                          |                                                         |                                                                                                                                                                                             | जांचकर्ता<br>CHECKED BY   | AKC        |

( ALL DIMENSIONS ARE IN mm )



|       |     | DIMENSIONS IN mm |     |     |     |     |   |   |     |                    |                            |                           |     |       |
|-------|-----|------------------|-----|-----|-----|-----|---|---|-----|--------------------|----------------------------|---------------------------|-----|-------|
| S.NO. | Ø   | A                | B   | C   | D   | E   | F | G | H   | $\frac{A-\phi}{2}$ | SECTION<br>Cm <sup>2</sup> | VOLUME<br>Dm <sup>3</sup> | H1  | VOL 1 |
| 1     | 30  | 55               | 40  | 42  | 38  | 40  | 6 | 5 | 200 | 12.5               | 7.1                        | 0.333                     | 100 | 0.17  |
| 2     | 40  | 65               | 50  | 52  | 48  | 50  | 6 | 5 | 200 | 12.5               | 12.6                       | 0.412                     | 100 | 0.21  |
| 3     | 50  | 75               | 62  | 64  | 60  | 62  | 6 | 5 | 200 | 12.5               | 19.7                       | 0.491                     | 100 | 0.25  |
| 4     | 60  | 85               | 72  | 74  | 70  | 72  | 6 | 5 | 200 | 12.5               | 28.3                       | 0.570                     | 100 | 0.285 |
| 5     | 70  | 100              | 85  | 87  | 83  | 85  | 6 | 5 | 200 | 15                 | 38.5                       | 0.802                     | 100 | 0.40  |
| 6     | 80  | 110              | 95  | 97  | 93  | 95  | 6 | 5 | 200 | 15                 | 50.3                       | 0.896                     | 100 | 0.45  |
| 7     | 90  | 125              | 107 | 110 | 104 | 107 | 8 | 7 | 300 | 17.5               | 63.6                       | 1.774                     | 100 | 0.59  |
| 8     | 100 | 140              | 120 | 123 | 117 | 120 | 8 | 7 | 300 | 20                 | 78.5                       | 2.262                     | 100 | 0.754 |
| 9     | 120 | 165              | 142 | 145 | 139 | 142 | 8 | 7 | 300 | 22.5               | 113.1                      | 3.023                     | 100 | 1.01  |
| 10    | 150 | 200              | 175 | 178 | 172 | 175 | 8 | 7 | 300 | 25                 | 176.7                      | 4.126                     | 100 | 1.71  |

TOLERANCE:  $\pm 2\%$  OR  $\pm 2\text{mm}$  WHICHEVER IS GREATER  
ALL DIMENSIONS ARE IN MM

REV 04 DATE 10-4-02  
MATERIAL REVISED

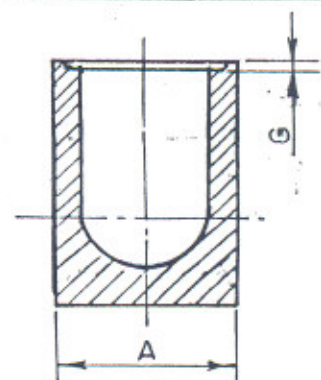
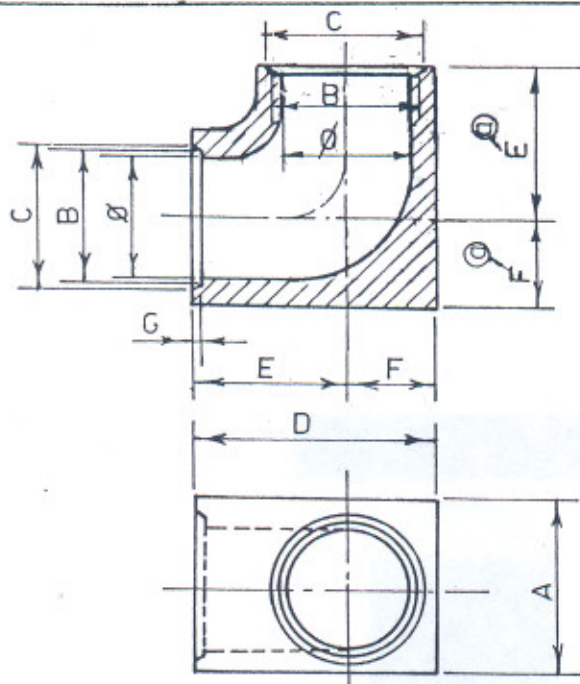
|                  |             |           |                    |              |           |                                                                               |              |           |
|------------------|-------------|-----------|--------------------|--------------|-----------|-------------------------------------------------------------------------------|--------------|-----------|
| REV 03           | DATE 6-3-01 | ALTD. CHD | REV 02             | DATE 18-9-98 | ALTD. CHD | REV 01                                                                        | DATE 30-5-96 | ALTD. CHD |
| MATERIAL CHANGED |             |           | H1 AND VOL 1 ADDED |              |           | (i) MATERIAL GRADE ADDED.<br>(ii) NOTE-SUPERSEDED WITH SAME DRG NO-ELIMINATED |              |           |



**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT : CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                             |           |       |     |               |                                  |                   |                    |         |          |
|-----------------------------|-----------|-------|-----|---------------|----------------------------------|-------------------|--------------------|---------|----------|
| DEPTT.                      | FDY-TECHY | SCALE | NTS | WEIGHT (KGS.) | MATERIAL- AS PER FF 06010 REV 01 |                   |                    |         |          |
| TITLE<br>REFRACTORY SLEEVES |           |       |     |               | DRAWN                            | NAME              | SIGN.              | DATE    |          |
|                             |           |       |     |               | WORKED                           | ANIT SINGH.       | <i>Asst</i>        | 20-3-96 |          |
|                             |           |       |     |               | CHECKED                          | A.K. CHAKRABERTY. | <i>[Signature]</i> | 3-4-96  |          |
|                             |           |       |     |               | APPROVED                         | N. KHAN.          | <i>N. Khan</i>     | 11/4/96 |          |
|                             |           |       |     |               | DRAWING NO                       |                   | 03/009/1           |         | REV. 0/4 |
|                             |           |       |     |               | SHEET NO. 01                     |                   | NO. OF SHEETS      |         | 01       |

SIZE-A4



| REV                      | DATE    | ALTD |
|--------------------------|---------|------|
| ©                        | 10.4.02 | CHD  |
| MATERIAL REVISED         |         |      |
| REV                      | DATE    | ALTD |
| ⑥                        | 15.9.01 | CHD. |
| MATERIAL GRADE MODIFIED. |         |      |

| SNO | Ø   | A   | B   | C   | D   | E   | F   | G | $\frac{A-\delta}{2}$ | SECTION<br>Cm <sup>2</sup> | VOLUME<br>Dm <sup>3</sup> |
|-----|-----|-----|-----|-----|-----|-----|-----|---|----------------------|----------------------------|---------------------------|
| 1   | 30  | 60  | 40  | 42  | 70  | 45  | 25  | 5 | 15                   | 7.1                        | 0.200                     |
| 2   | 40  | 70  | 50  | 52  | 85  | 55  | 30  | 5 | 15                   | 12.6                       | 0.309                     |
| 3   | 50  | 80  | 62  | 64  | 108 | 70  | 38  | 5 | 15                   | 19.7                       | 0.479                     |
| 4   | 60  | 90  | 72  | 74  | 118 | 75  | 43  | 5 | 15                   | 28.3                       | 0.622                     |
| 5   | 70  | 100 | 85  | 87  | 135 | 85  | 50  | 5 | 15                   | 38.5                       | 0.810                     |
| 6   | 80  | 110 | 95  | 97  | 145 | 90  | 55  | 5 | 15                   | 50.3                       | 1.003                     |
| 7   | 90  | 125 | 107 | 110 | 163 | 100 | 63  | 7 | 17.5                 | 63.6                       | 1.466                     |
| 8   | 100 | 140 | 120 | 123 | 175 | 105 | 70  | 7 | 20                   | 78.5                       | 2.005                     |
| 9   | 120 | 165 | 142 | 145 | 203 | 120 | 83  | 7 | 22.5                 | 113.1                      | 3.165                     |
| 10  | 150 | 200 | 175 | 178 | 250 | 150 | 100 | 7 | 25                   | 176.7                      | 5.489                     |

TOLERANCE  $\pm 2\%$  OR  $\pm 2$  mm WHICHEVER IS GREATER.  
ALL DIMENSIONS ARE IN MM.

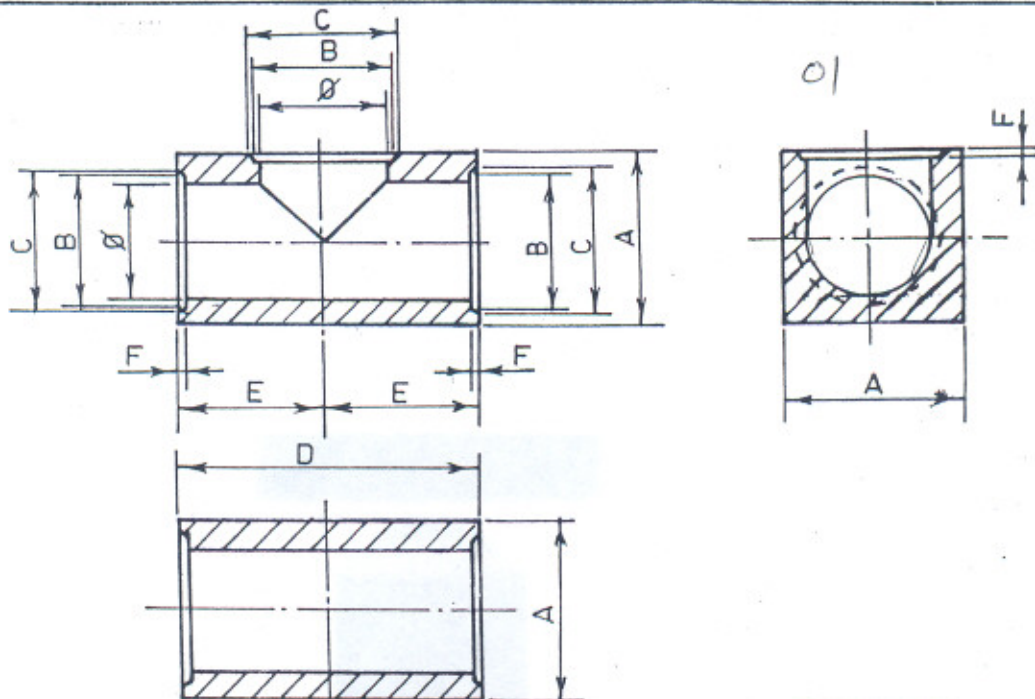
REVISIONS  
⑥ 9129 CHECKED  
MISSING DIMENSIONS  
PROVIDED



**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT : CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                                  |           |              |                                  |                  |                   |         |
|----------------------------------|-----------|--------------|----------------------------------|------------------|-------------------|---------|
| DEPT. FDY TECHY                  | SCALE NTS | WEIGHT (KGS) | MATERIAL GRADE: FF 06010, REV 01 |                  |                   |         |
| TITLE<br><b>REFRACTORY KNEES</b> |           |              | DRAWN                            | NAME             | SIGN.             | DATE    |
|                                  |           |              | WORKED                           | AJIT SINGH.      | <i>Ajit Singh</i> | 18.3.97 |
|                                  |           |              | CHECKED                          | Y.N.V. RAO       | <i>Y.N.V. Rao</i> | 18.3.97 |
|                                  |           |              | APPROVED                         | N. KHAN.         | <i>N. Khan</i>    | 18.3.97 |
|                                  |           |              | DRAWING NO. 03/009/2 REV.-C      |                  |                   |         |
|                                  |           |              | SHEET NO. 01                     | NO. OF SHEETS 01 |                   |         |

( ALL DIMENSIONS ARE IN mm )



| S NO | Ø   | A   | B   | C   | D   | E   | F | $\frac{A-\phi}{2}$ | SECTION<br>Cm <sup>2</sup> | VOLUME<br>Dm <sup>3</sup> |
|------|-----|-----|-----|-----|-----|-----|---|--------------------|----------------------------|---------------------------|
| 1    | 30  | 60  | 40  | 42  | 90  | 45  | 5 | 15                 | 7.1                        | 0.247                     |
| 2    | 40  | 70  | 50  | 52  | 110 | 55  | 5 | 15                 | 12.6                       | 0.381                     |
| 3    | 50  | 80  | 62  | 64  | 140 | 70  | 5 | 15                 | 18.7                       | 0.530                     |
| 4    | 60  | 90  | 72  | 74  | 150 | 75  | 5 | 15                 | 28.3                       | 0.748                     |
| 5    | 70  | 100 | 85  | 87  | 170 | 85  | 5 | 15                 | 38.5                       | 1.026                     |
| 6    | 80  | 110 | 95  | 97  | 180 | 90  | 5 | 15                 | 50.3                       | 1.170                     |
| 7    | 90  | 125 | 107 | 110 | 200 | 100 | 7 | 17.5               | 63.6                       | 1.672                     |
| 8    | 100 | 140 | 120 | 123 | 210 | 105 | 7 | 20                 | 78.5                       | 2.211                     |
| 9    | 120 | 165 | 142 | 145 | 240 | 120 | 7 | 22.5               | 113.1                      | 3.430                     |
| 10   | 150 | 200 | 175 | 178 | 300 | 150 | 7 | 25                 | 176.7                      | 5.588                     |

TOLERANCE  $\pm 2\%$  OR  $\pm 2\text{mm}$  WHICHEVER IS GREATER.  
ALL DIMENSIONS ARE IN MM.

|                     |                 |                     |                |                                                                        |           |                 |              |
|---------------------|-----------------|---------------------|----------------|------------------------------------------------------------------------|-----------|-----------------|--------------|
| REV<br>03           | DATE<br>10-4-02 | REV<br>02           | DATE<br>6-3-01 | ALTD.<br>CHD                                                           | REV<br>01 | DATE<br>30-5-96 | ALTD.<br>CHD |
| MATERIAL<br>REVISED |                 | MATERIAL<br>CHANGED |                | MATERIAL GRADE ADDED<br>NOTE SUPERSEDED WITH SAME DRG NO<br>ELIMINATED |           |                 |              |

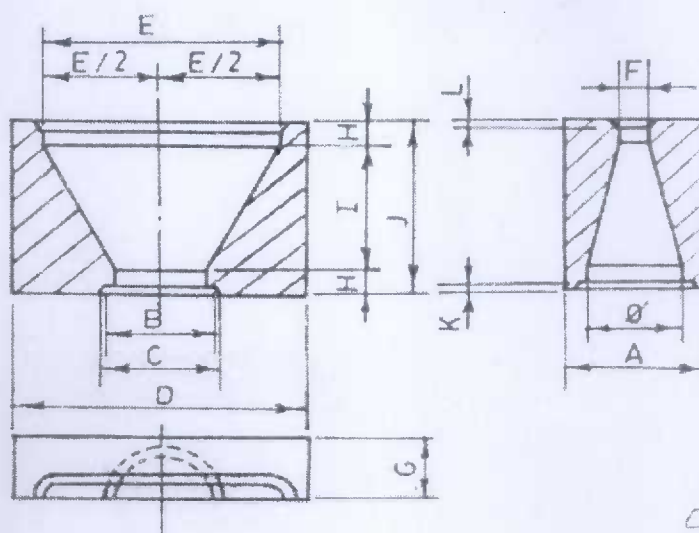


**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT: CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                              |            |       |     |               |                                   |                  |       |         |
|------------------------------|------------|-------|-----|---------------|-----------------------------------|------------------|-------|---------|
| DEPTT.                       | FDY-TECHY. | SCALE | NTS | WEIGHT (KGS.) | MATERIAL- AS PER FF 06010: REV 01 |                  |       |         |
| TITLE<br><br>REFRACTORY TEES |            |       |     |               | DRAWN                             | NAME             | SIGN. | DATE    |
|                              |            |       |     |               | WORKED                            | AJIT SINGH       | Ajit  | 20-3-96 |
|                              |            |       |     |               | CHECKED                           | A-K. CHAKRABORTY |       | 12-2-96 |
|                              |            |       |     |               | APPROVED                          | N-K. KHAN        |       | 11/4/96 |
|                              |            |       |     |               | DRAWING NO. 03/009/3              |                  |       |         |
| SHEET NO. 01                 |            |       |     |               | NO. OF SHEETS 01                  |                  |       |         |

SIZE-A4

( ALL DIMENSIONS ARE IN mm )



| Rp | Ø   | A   | B   | C   | D   | E   | F  | G    | H  | I   | J   | K | L  | AREA<br>Cm <sup>2</sup> | VOLUM<br>Dm <sup>3</sup> | WT<br>Kg | TO BE USED BY |
|----|-----|-----|-----|-----|-----|-----|----|------|----|-----|-----|---|----|-------------------------|--------------------------|----------|---------------|
| 1  | 30  | 50  | 40  | 42  | 125 | 90  | 9  | 25   | 15 | 55  | 85  | 5 | 3  | 7.9                     | 0.461                    | 0.876    | STEEL FDY.    |
| 2  | 40  | 60  | 50  | 52  | 140 | 115 | 10 | 30   | 15 | 65  | 95  | 5 | 4  | 14.5                    | 0.661                    | 1.256    | "             |
| 3  | 50  | 75  | 62  | 64  | 160 | 130 | 18 | 325  | 18 | 69  | 105 | 5 | 5  | 22.7                    | 1.024                    | 1.946    | "             |
| 4  | 60  | 85  | 72  | 74  | 190 | 160 | 21 | 425  | 18 | 89  | 125 | 5 | 6  | 32.7                    | 1.616                    | 3.068    | "             |
| 5  | 70  | 100 | 85  | 87  | 215 | 175 | 26 | 50   | 20 | 105 | 145 | 5 | 8  | 43.9                    | 2.487                    | 4.725    | "             |
| 6  | 80  | 110 | 95  | 97  | 246 | 200 | 30 | 55   | 20 | 120 | 160 | 5 | 10 | 58.1                    | 3.298                    | 6.266    | "             |
| 7  | 90  | 125 | 107 | 110 | 260 | 210 | 36 | 6.25 | 22 | 131 | 175 | 7 | 12 | 73.0                    | 4.413                    | 9.385    | "             |
| 8  | 100 | 140 | 120 | 123 | 270 | 220 | 43 | 70   | 22 | 136 | 180 | 7 | 15 | 90.6                    | 5.174                    | 9.830    | "             |
| 9  | 120 | 165 | 142 | 145 | 300 | 240 | 56 | 825  | 25 | 150 | 200 | 7 | 18 | 128                     | 7.967                    | 15.137   | "             |
| 10 | 150 | 200 | 175 | 178 | 350 | 270 | 78 | 100  | 30 | 175 | 225 | 7 | 20 | 198                     | 11.734                   | 22.290   | "             |

TOLERANCE  $\pm 2\%$  OR  $\pm 2$ mm WHICHEVER IS GREATER  
ALL DIMENSIONS ARE IN MM

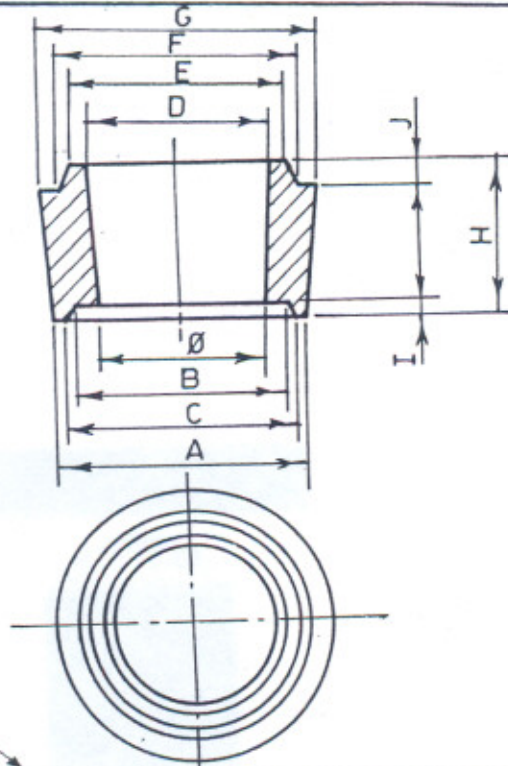
| REV              | DATE    | ALTD. | REV              | DATE   | ALTD. | REV                                                                           | DATE    | ALTD. |
|------------------|---------|-------|------------------|--------|-------|-------------------------------------------------------------------------------|---------|-------|
| 03               | 10-4-02 | CHD   | 02               | 6-3-01 | CHD   | 01                                                                            | 30-5-96 | CHD   |
| MATERIAL REVISED |         |       | MATERIAL CHANGED |        |       | (i) MATERIAL GRADE ADDED.<br>(ii) NOTE-SUPERSEDED WITH SAME DRG.NO-ELIMINATED |         |       |



**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT: CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                            |              |              |                                   |                 |            |         |
|----------------------------|--------------|--------------|-----------------------------------|-----------------|------------|---------|
| DEPT<br>FDY-TECHY.         | SCALE<br>NYS | WEIGHT (KGS) | MATERIAL - AS PER FF 06010 REV-01 |                 |            |         |
| TITLE<br>REFRACTORY INGATE |              |              | DRAWN                             | NAME            | SIGN       | DATE    |
|                            |              |              | WORKED                            | AMT SINGH.      | <i>AMT</i> | 20-3-80 |
|                            |              |              | CHECKED                           | AK-CHAKRIBORTY. | <i>AK</i>  | 22-3-80 |
|                            |              |              | APPROVED                          | N-KHAN.         | <i>NK</i>  | 21-4-80 |
|                            |              |              | DRAWING NO 03/009/4 REV-03        |                 |            |         |
|                            |              |              | SHEET NO 01                       | NO OF SHEETS 01 |            |         |

(ALL DIMENSIONS ARE IN mm)



| S NO | Ø   | A   | B   | C   | D   | E   | F   | G   | H   | I | J | $\frac{A-\phi}{2}$ | $\frac{G-D}{2}$ | VOLUME<br>DM <sup>3</sup> |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|---|--------------------|-----------------|---------------------------|
| 1    | 30  | 55  | 40  | 42  | 40  | 48  | 50  | 65  | 50  | 5 | 6 | 12.5               | 12.5            | 0.081                     |
| 2    | 40  | 65  | 50  | 52  | 50  | 60  | 62  | 75  | 50  | 5 | 6 | 12.5               | 12.5            | 0.113                     |
| 3    | 50  | 75  | 62  | 64  | 60  | 70  | 72  | 85  | 50  | 5 | 6 | 12.5               | 12.5            | 0.132                     |
| 4    | 60  | 85  | 72  | 74  | 70  | 83  | 85  | 100 | 50  | 5 | 6 | 12.5               | 15              | 0.170                     |
| 5    | 70  | 100 | 85  | 87  | 80  | 93  | 95  | 110 | 50  | 5 | 6 | 15                 | 15              | 0.212                     |
| 6    | 80  | 110 | 95  | 97  | 90  | 104 | 107 | 125 | 50  | 5 | 6 | 15                 | 17.5            | 0.258                     |
| 7    | 90  | 125 | 107 | 110 | 100 | 117 | 120 | 140 | 50  | 7 | 8 | 17.5               | 20              | 0.334                     |
| 8    | 100 | 140 | 120 | 123 | 120 | 139 | 142 | 165 | 50  | 7 | 8 | 20                 | 22.5            | 0.440                     |
| 9    | 120 | 165 | 142 | 145 | 150 | 172 | 175 | 200 | 80  | 7 | 8 | 22.5               | 25              | 0.950                     |
| 10   | 150 | 200 | 175 | 178 | 200 | 222 | 225 | 250 | 130 | 7 | 8 | 25                 | 25              | 2.042                     |

TOLERANCE:  $\pm 2\%$  OR  $\pm 2\text{mm}$  WHICHEVER IS GREATER  
ALL DIMENSIONS ARE IN MM

|                  |              |          |                  |             |          |                           |              |                                                  |
|------------------|--------------|----------|------------------|-------------|----------|---------------------------|--------------|--------------------------------------------------|
| REV 03           | DATE 10-4-02 | ALTD CHD | REV 02           | DATE 6-3-01 | ALTD CHD | REV 01                    | DATE 30-5-96 | ALTD CHECKED                                     |
| MATERIAL REVISED |              |          | MATERIAL CHANGED |             |          | (i) MATERIAL GRADE ADDED. |              | (ii) NOTE SUPERSEDED WITH SAME DRC NO ELIMINATED |

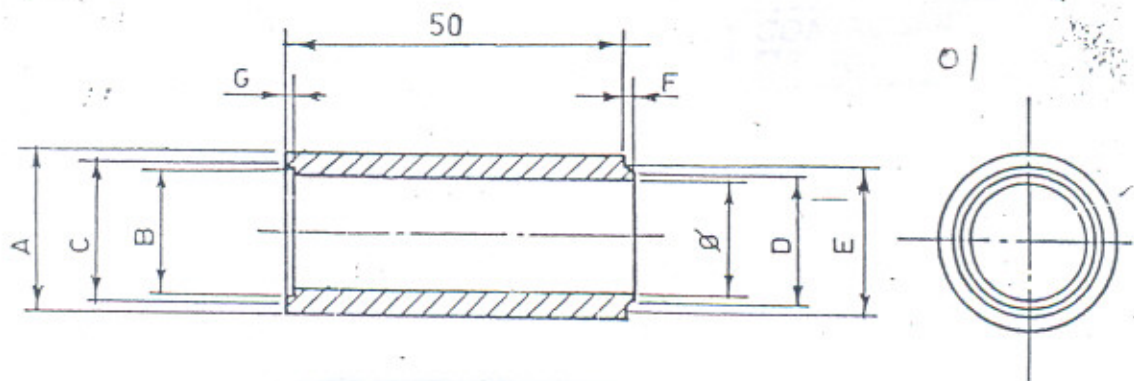


**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT: CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                                  |           |               |                                  |                   |              |         |
|----------------------------------|-----------|---------------|----------------------------------|-------------------|--------------|---------|
| DEPTT. FDY. TECHY.               | SCALE NTS | WEIGHT (KGS.) | MATERIAL - AS PER FF06010 REV 01 |                   |              |         |
| TITLE<br><br>REFRACTORY REDUCERS |           |               | DRAWN                            | NAME              | SIGN.        | DATE    |
|                                  |           |               | WORKED                           | AJIT SINGH.       | As-<br>singh | 20.3.96 |
|                                  |           |               | CHECKED                          | A.K. CHAKRABORTY. | AKC          | 27.3.96 |
|                                  |           |               | APPROVED                         | H. KHAN.          | H.K.         | 11/4/96 |
|                                  |           |               | DRAWING NO 03 / 009 / 8          |                   |              |         |
| SHEET NO. 01                     |           |               | NO. OF SHEETS 01                 |                   |              |         |

SIZE-A4

( ALL DIMENSIONS ARE IN mm )



DIMENSIONS IN mm

| S.NO. | Ø   | A   | B   | C   | D   | E   | F | G | VOLUME DM <sup>3</sup> |
|-------|-----|-----|-----|-----|-----|-----|---|---|------------------------|
| 1     | 30  | 55  | 40  | 42  | 38  | 40  | 6 | 5 | 0.09                   |
| 2     | 40  | 65  | 50  | 52  | 48  | 50  | 6 | 5 | 0.11                   |
| 3     | 50  | 75  | 62  | 64  | 60  | 62  | 6 | 5 | 0.13                   |
| 4     | 60  | 85  | 72  | 74  | 70  | 72  | 6 | 5 | 0.15                   |
| 5     | 70  | 100 | 85  | 87  | 83  | 85  | 6 | 5 | 0.20                   |
| 6     | 80  | 110 | 95  | 97  | 93  | 95  | 6 | 5 | 0.22                   |
| 7     | 90  | 125 | 107 | 110 | 104 | 107 | 8 | 7 | 0.30                   |
| 8     | 100 | 140 | 120 | 123 | 117 | 120 | 8 | 7 | 0.38                   |
| 9     | 120 | 165 | 142 | 145 | 139 | 142 | 8 | 7 | 0.50                   |
| 10    | 150 | 200 | 175 | 178 | 172 | 175 | 8 | 7 | 0.86                   |

TOLERANCE:  $\pm 2\%$  OR  $\pm 2\text{mm}$  WHICHEVER IS GREATER  
ALL DIMENSIONS ARE IN MM

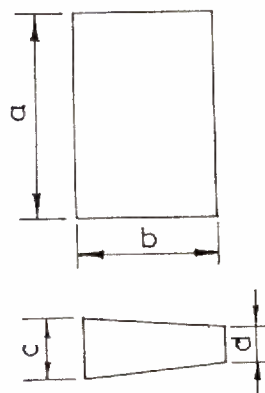
| REV              | DATE    | ALTD |
|------------------|---------|------|
| 01               | 10-4-02 | CHD  |
| MATERIAL REVISED |         |      |



**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT: CENTRAL FOUNDRY FORGE PLANT.  
HARDWAR.

|                             |           |                  |                                |
|-----------------------------|-----------|------------------|--------------------------------|
| DEPTT. FDY-TECHY.           | SCALE NTS | WEIGHT (KGS)     | MATERIAL-AS PER FF06010 REV.01 |
| TITLE<br>REFRACTORY SLEEVES |           |                  | DRAWN                          |
|                             |           |                  | WORKED                         |
|                             |           |                  | CHECKED                        |
|                             |           |                  | APPROVED                       |
|                             |           |                  | DRAWING NO. 03/009/1/1 REV. 01 |
| SHEET NO. 01                |           | NO. OF SHEETS 01 |                                |

SIZE-A4



| MARK  | a   | b   | c   | d   |
|-------|-----|-----|-----|-----|
| IP18  | 250 | 90  | 134 | 116 |
| IP 8  | 250 | 90  | 129 | 121 |
| 2P24  | 250 | 123 | 137 | 113 |
| 2 P10 | 250 | 123 | 130 | 120 |



| MARK | a   | b   | c   | d |
|------|-----|-----|-----|---|
| P40  | 230 | 40  | 114 | — |
| S    | 230 | 113 | 125 | — |

TOLERANCE  $\pm 2\%$  OR  $\pm 2$  m.m. WHICHEVER IS GRATER.  
ALL DIMENSION ARE IN m.m.



# **BHARAT HEAVY ELECTRICALS LTD.** UNIT : CENTRAL FOUNDRY FORGE PLANT. HARDWAR.

DEPTT.

SCALE

WEIGHT (KGS.)

TITLE

REFRACTORY BRICKS  
FOR LADLE LINING

DRAWN

NAME

SIGN.

DATE

WORKED

CHECKED

APPROVED

A. K. TRIVEDI

A. K. TRIVEDI

22-3-92

22-3-92

DRAWING NO

23271013

REV. 00

SHEET NO

1

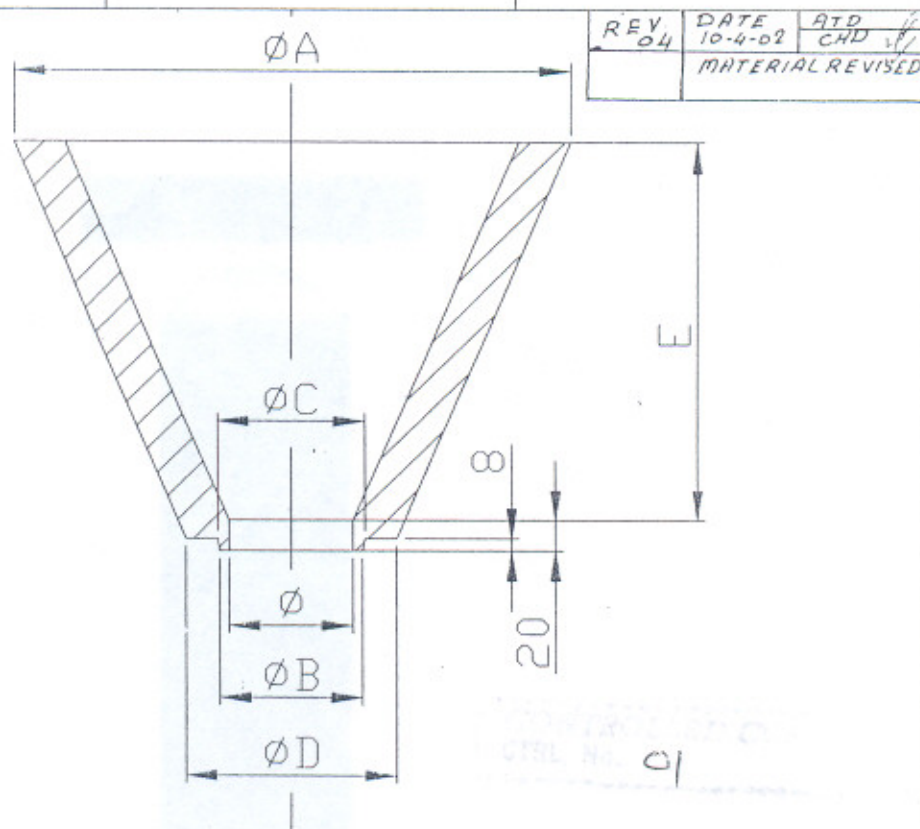
NO. OF SHEETS

1

SIZE-A4

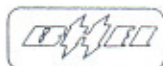
# FIRST ANGLE PROJECTION (ALL DIMENSIONS ARE IN mm)

| REV                                                                      | DATE    | ALTERED | REV                                                   | DATE    | ALTERED | REV                                | DATE    | ALTERED |
|--------------------------------------------------------------------------|---------|---------|-------------------------------------------------------|---------|---------|------------------------------------|---------|---------|
| 01                                                                       | 30.5.96 | CHECKED | 02                                                    | 14.6.00 | CHECKED | 03                                 | 06.3.01 | CHECKED |
| MATERIAL GRADE ADDED<br>NOTE- SUPERSEDED WITH SAME<br>DRG NO. ELIMINATED |         |         | DIA 150 CUP ADDED IN TABLE<br>DRAWING RETRACED IN CAD |         |         | NOTE FOR MATERIAL GRADE<br>AMENDED |         |         |



| Sl. | Ø   | ØA  | ØB  | ØC  | ØD  | E   |
|-----|-----|-----|-----|-----|-----|-----|
| 1   | 80  | 360 | 92  | 95  | 136 | 230 |
| 2   | 100 | 430 | 116 | 120 | 158 | 300 |
| 3   | 120 | 430 | 138 | 142 | 175 | 300 |
| 4   | 150 | 460 | 172 | 175 | 200 | 300 |

TOLERANCE:  $\pm 2\%$  OR  $\pm 2$  MM WHICHEVER IS GREATER  
MATERIAL AS PER FF06010 REV-01.



**BHARAT HEAVY ELECTRICALS. LTD.**  
**CENTRAL FOUNDRY FORGE PLANT**  
**RANIPUR HARDWAR**

|                                        |              |               |                                        |                  |                   |
|----------------------------------------|--------------|---------------|----------------------------------------|------------------|-------------------|
| DEPTT. FDY.TECH.                       | SCALE N.T.S. | WEIGHT IN Kgs | NAME                                   | SIGN             | DATE              |
| TITLE<br><b>REFRACTORY POURING CUP</b> |              |               | DRN                                    | /REF POURING CUP |                   |
|                                        |              |               | WKD                                    | T DAVE           | 13.3.01           |
|                                        |              |               | CHD                                    | AKC              | 12.3.01           |
|                                        |              |               | APPD                                   | NGS              | 11                |
| PROJECT AND CUSTOMER NAME              |              | TECHNOLOGY NO | DRAWING NO.-<br><b>FT-11-19 REV 04</b> |                  |                   |
|                                        |              |               | SHEET NO.- 1                           |                  | NO. OFF SHEETS- 1 |



## CORPORATE PURCHASING SPECIFICATION

AA 53304

Rev. No. 03

PAGE 1 OF 3

### FIRECLAY REFRACTORIES

#### 1.0 GENERAL:

This specification governs the requirements of high heat duty fireclay refractories and hollowwares for foundry applications (Sleeves, knees, reducers, tees, pouring cups).

#### 2.0 APPLICATION:

Used as refractory lining bricks for furnaces and ladles and hollow refractory sleeves for gating system in moulds and cores. The refractory sleeves/hollowwares shall be for entry of molten metal at temperature in the range up to 1620 °C.

#### 3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply, in general, with the requirements of the following National standards and also comply with the requirements of this specification.

IS: 8- 2004 : High Heat Duty Fireclay Refractories.

#### 4.0 DIMENSIONS AND TOLERANCES:

4.1 **Shape and Size:** As per BHEL order/drawing.

4.2 **Tolerances:**  $\pm 1\%$  or 1mm, whichever is greater on both warpage and shrinkage.

#### 5.0 FREEDOM FROM DEFECTS:

The refractories shall be free from cracks, voids, surface roughness (felt by rubbing with finger), low melting spots, inclusions and broken corners and edges. They shall be of homogenous texture and shall have good surface finish. Hollowware refractories should be manufactured by wet process using grain size 2 mm max.

#### 6.0 TEST SAMPLES:

As per IS: 1528.

#### Revisions :

As per 24<sup>th</sup> MOM of MRC-FN

#### APPROVED :

INTERPLANT MATERIAL  
RATIONALISATION COMMITTEE-MRC (FN)

Rev. No.03

Amd.No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

Dt. : Apr 2012

Dt :

Year :

CFFP

Corp. R&D

JANUARY, 2004

**7.0 PROPERTIES:**

When tested in accordance with the relevant clauses of IS:1527 and IS:1528, mentioned against each, the test samples shall show the following values:

**7.1 Chemical Composition:**

Al<sub>2</sub>O<sub>3</sub> content 40%, minimum for fireclay bricks.  
Iron Oxide shall be limited to 2.2% max.

**7.2 PHYSICAL PROPERTIES:**

| Property Requirements .                                           | Type I | Type II |
|-------------------------------------------------------------------|--------|---------|
| 1. Apparent porosity, % volume, max :                             | 30     | 23      |
| 2. Cold Crushing strength, N/mm <sup>2</sup> , min. :             | 17.5   | 25      |
| 3. Pyrometric cone equivalent standard<br>Orton (ASTM) No., min : | 32     | 32      |
| 4. Refractoriness under load, ta °C, min :                        | 1400   | 1425    |
| 5 Permanent linear change, % max. :                               |        |         |
| a) After heating at 1400°C for 5 hours :                          | ± 1.5  | --      |
| b) After heating at 1450°C for 2 hours :                          | --     | ± 1.0   |

7.3 Hollow refractory sleeves for gating system should be of type II variety and should be amenable to cut by abrasive cut-off wheel.

**8.0 INSPECTION, DEVIATION AND REPLACEMENT:**

8.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance about readiness of material enclosing a copy of test certificate of the material offered for inspection. However inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter that the material being furnished is in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests elsewhere.

8.2 If the material received at BHEL is not found in accordance with the requirements, it shall be liable to be rejected and the supplier will have to replace it free of cost at the earliest.

8.3 For any deviation from the specification sought by the supplier, prior approval of BHEL must be obtained in writing.

**9.0 ACCEPTANCE**

For supplies from approved vendors, each consignment shall be accepted on the basis of supplier's TC and GC. Material shall be checked as per Clause 4 and 5 on random sample basis.  
Surveillance checking shall be done for properties mentioned in Clause 7.0



## CORPORATE PURCHASING SPECIFICATION

AA 53304

Rev. No. 03

PAGE 3 OF 3

### 9.0 TEST CERTIFICATES:

9.1 Unless otherwise specified, one original and three copies of test certificates shall be supplied along with each consignment.

In addition the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the followings information

AA 53304, Rev.No.03 : Fireclay Refractories / Refractory hollowware's

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade mark, if any.; Batch No.; Date of manufacture

Size and Quantity supplied

Dimensional inspection as per clause 4.0.

Test results of clause 7.0

9.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to supplier's invoice stating the batch No., lot No., etc of the supply.

### 10.0 PACKING AND MARKING:

The material should be transported suitably to avoid damage and moisture pickup during transit.

Each piece of the refractory item should have supplier's identification mark and size as mentioned in the consignment document. Each consignment shall be legibly marked or labeled with the following information:

AA 53304: Fireclay Refractories/refractory hollowware's.

BHEL Order No.

Manufacturer's/ Supplier's Name.

Trade mark, if any.

Batch/Lot No.

Size and Quantity supplied

Date of manufacture

### 11.0 REFERRED STANDARDS (Latest Publications Including Amendments)

1) IS: 8 2) IS: 1527 3) IS: 1528



**BHARAT HEAVY ELECTRICALS LIMITED**  
**C.F.F.P: HARIDWAR, UTTRAKHAND -249403**

**General Instruction And Standard Terms & Conditions for bidding against Tender Enquiry  
FOR INDIAN BIDDERS ONLY**

**DOCUMENT NO. : CFFP/MM/PUR/GT/IN/01 REV01 Dated 07.12.2016**

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***Quotations/ Bids not accordance with General Terms and Conditions are likely to be ignored.***



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**1. GENERAL :**

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., CFFP, Haridwar (hereinafter referred to as BHEL or the Purchaser).

**2. ORIGIN OF QUOTATION:**

**2.1** The quotation should preferably be from the Principal Bidder. However tender specific authorized registered dealer/agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. **BHEL prefers to deal directly with the principal manufacturers.**

**2.2** An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

**3. SUBMISSION OF TENDER**

**3.1 IN CASE OF PAPER BID :**

**3.1.1** In Case of Paper Bid: Bid/Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER/Dropped in the Tender Box: addressed as follows:-

**Quotation against Enquiry No.** \_\_\_\_\_ **Dated:** \_\_\_\_\_

**Due on:** \_\_\_\_\_

**To,**

**THE HEAD OF PURCHASE DEPARTMENT, Central Foundry Forge Plant,**

**Bharat Heavy Electricals Limited, HARIDWAR-249403 (Uttarakhand), INDIA.**

**3.1.2** In case of Three/Two Part Bid, technical bid containing technical offer, duly signed; and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid without prices but with applicable taxes and duties.

**3.1.3** The bid/quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. **Documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.**

**3.2 IN CASE OF E-TENDER :**

**3.2.1** Offer to be submitted only on e-procurement portal. Hard copy of offer is not required to be submitted to CFFP-BHEL. Any offers received in Hard copy (for e-Tender Enquiries) shall not be considered and liable to be ignored by CFFP.

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**3.2.2** Responsibility for submission of tender in time solely lies with vendor. Vendors are requested to submit offers well in advance of due date and time to avoid last minute rush and system related issues/ problems.

**3.2.3** Foreign template (for offer submission) to be selected only by Foreign Vendor on whom order is to be placed. Offers submitted by Indian/ Indigenous vendors in foreign template shall not be accepted.

**3.3** Any additional documents submitted by supplier/bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is submitted with forwarding letter and duly signed and stamped as mentioned above in clause 3.1.3.

**3.4** The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting/overwriting in the bid/offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site [www.bhel.com](http://www.bhel.com).

**3.5** Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. ***Repeated lack of response on the part of bidder may lead to deletion of such PMD Vendor from BHEL's approved vendor list.***

**3.6** The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever it has been asked in tender enquiry.

**3.7** In case of open tender, the unregistered bidder shall submit inter alia duly filled-in Supplier Registration Form (SRF) along with the bid. Bidders can download the SRF from [www.bhel.com](http://www.bhel.com)

**3.8** BHEL reserves the right to procure enquired material from more than one source/ vendor/ seller. Details will be specified in respective tender enquires.

**3.9** BHEL may also reduce the Tender Quantity for offering it to Micro & Small Enterprise (MSE) Indian Vendors as per applicable Government of India rules as detailed in the Clause 23.0

**4. TENDER OPENING :**

**4.1 PAPER BID:** Tender opening is scheduled to start in the Tender Room at 2:00 PM, on due date. Therefore bid/ quotations must reach this office/ tender box latest by 1:45 PM on the due date. Only participating bidders are allowed to attend the Tender Opening. **Tenders received after the specified time of their "Submission" will be treated as late tenders and shall not be considered under any circumstances.**

The bidders or their authorized representatives may be allowed to attend tender opening/ price bid opening for on that particular day with specific letter mentioning tender enquiry details in the Authorization letter. General authorization letter is not accepted.

**4.2 E-TENDER:** Tender submitted on e-tender/ e-procurement will be opened as per the schedule mentioned in the e-tender.

**5. SPECIFICATIONS, DRAWINGS AND STANDARD:**

**5.1** Bidders must give their detailed specification in the quotation along with relevant technical literature/catalogue etc. against the tender enquiry.

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- 5.2 The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry. If these documents are not furnished, the offer is liable to be rejected.
- 5.3 Wherever national/international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- 5.4 All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

**6. PRICE SCHEDULE:**

- 6.1 Kindly quote your prices in figures and words both (In Case of Paper Bid). In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- 6.2 Prices quoted should not be more than the prices quoted to any other BHEL units/offices/divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed for such items, specific confirmation that no order has been placed for such items should be provided.
- 6.3 Prices should be quoted on F.O.R. destination basis including freight, transit insurance, any other taxes / duties applicable.
- 6.4 The offers quoted on other than F.O.R destination basis may result in non-consideration of such bids.
- 6.5 In case BHEL accepts the EX-Works prices such offers will be loaded by 1% to 3% of EX-Works value towards freight depending on distance from material dispatch location to Haridwar or with actual freight charges as per BHEL freight rate contract whichever is higher.
- 6.6 In case of Indigenous items covered by DGS & D Rate Contract, the bidders should submit latest valid copy of the rate contract along with bid / quotation.
- 6.7 Applicable Sales Tax, Excise Duty and any other statutory levy should be indicated separately and clearly in the bid/quotation.
- 6.8 Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR/destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery BHEL Stores basis.
- 6.9 In case of dispatch of material through any unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account.
- 6.10 No demurrage / godown rent will be payable to the vendor / vendor's transporter for any delay in payments attributable to the vendor.

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**7. REVERSE AUCTION:**

- 7.1** BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid/ Price bid in e-portal, submitted by the bidder. This will be decided after Techno- Commercial Evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides for RA. Detailed guidelines available at our site [www.bhel.com](http://www.bhel.com).
- 7.2** BHEL reserves the right to go for Reverse Auction (RA) (guidelines as available on [www.bhel.com](http://www.bhel.com)) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.
- 7.3** Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated services provider) as well as Online sealed bid' in the Reverse Auction. Non-submission of Process compliance form or ' Online sealed bid' by the agreed bidder (s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).
- 7.4** The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.**
- 7.5** If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contactors (as available on [www.bhel.com](http://www.bhel.com)).
- 7.6** As a reminder to the bidders, system will flash following message (in RED color) during the course of 'online sealed bid'
- 7.7** Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL.
- 7.8** Highest bidder during online sealed bid will not be permitted to participate further in Reverse Auction of the tender enquiry for respective items.

**8. DELIVERY TERMS**

Goods shall be delivered on 'FOR Destination' basis. Destination shall be Central Stores, Central Foundry Forge Plant, BHEL, Haridwar unless otherwise specified in the tender enquiry.

**9. PENALTY OF LATE DELIVERY**

- 9.1** Date of delivery will be considered as per the delivery terms mentioned in the Purchase Order. Penalty will be applicable @0.5% per week subject to maximum of 10% of the unexecuted portion of the PO. Acceptance / Non

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Acceptance of this CONDITION must be specifically mentioned in your quotation. Any deviation from this will be loaded accordingly i.e. BHEL shall load maximum penalty under penalty for late delivery Clause, to the extent the same is not agreed by the bidder, for the purpose of evaluation.

- 9.2** Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.
- 9.3** Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- 9.4** Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- 9.5 DELIVERY IN CASE OF REJECTION:** In case the material is rejected, then date of replacement will be considered as the actual date of delivery.
- 9.6 DELIVERY AGAINST BANK DOCUMENTS:** In case payment terms quoted by bidder are documents through bank, and the delivery terms being "FOR Haridwar/FOR Transporter Godown", then date of delivery will be date of intimation by transporter/bidder of delivery of material at Haridwar for the penalty purpose.
- 9.7** Where the payments are through bank, the documents may be presented for negotiation to BHEL authorized/nominated bank.

**10. PAYMENT TERMS**

- 10.1** 100% within 30 days after receipt & acceptance of material at CFFP/ BHEL, Haridwar through e-payment.
- 10.2** BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.
- 10.3** Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.

**11. TAXES AND DUTIES:**

- 11.1** All vendors are required to provide PAN details.
- 11.2** If PAN (Permanent Account Number) of the recipient is not available, tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher. As per Section 206AA of Indian Income Tax Act 1961.
- 11.3** The bidder shall clearly indicate extent of taxes as applicable in his technical bid.
- 11.4** All forms as required by Law to avail concessional tax benefits are to be submitted within the stipulated time. BHEL reserves the right to withhold the payment due to the bidder or deduct the payment equivalent to additional tax and other liability on BHEL due to non/late submission of above forms.

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- 11.5** Bidder to quote place from where supply of goods is expected, to evaluate applicable Value Added Tax input credit. Any subsequent changes in this may affect availability of input credit to BHEL; the same will be on bidder's account.
- 11.6** In case of intra-state sale, bidder to ensure quoting TIN Number of BHEL applicable in the state of transaction and same should be asked by bidder in time.
- 11.7** Rate of Excise Duty, CST/VAT and Service Tax must be indicated in offer even if it is inclusive.
- 11.8** Taxes & duties as applicable at the time of supply shall be payable.
- 11.9 Imported Goods Offered by Indian Bidders against Dealer Invoice:** Wherever the material being offered is imported, bidder must quote the prices inclusive of CVD. The rate & value of CVD as included in the price must be indicated separately. In case quantum of CVD is not mentioned by the bidder the same will not be considered for evaluation. However bidder will have to pass on the benefit of CVD to BHEL at the time of actual supply.

**12. WEIGHMENT OF MATERIAL :**

After receipt of material, account of material shall be based on weighment at CFFP/ Counting as the case may be and same shall be treated as final and binding of supplier.

**13. BANK GUARANTEE :**

In case the bank guarantees are required to be deposited towards security deposit/performance guarantee or for any other purpose as per the terms of the tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the Performa as prescribed by BHEL. The Performa of bank guarantee and the list of consortium banks are displayed at BHEL website [www.bhelhwr.co.in](http://www.bhelhwr.co.in). However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

**14. GUARANTEE/ WARRANTY & CORRESPONDING REPAIRS/ REPLACEMENT OF GOODS.**

**14.1** Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 12 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken away by the Seller at his cost and replaced on Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or our subcontractor's works, the Seller shall be responsible for free replacement/ repair of the goods as required by BHEL.

**14.2 RETURN OF REJECTED MATERIAL FOR REPLACEMENT.** The rejected material shall be sent back only after receipt of replacement /submission of BG/refund of amount paid. . In case of rejection of material after receipt at CFFP, seller is required to take back the rejected material at their cost within 45 days from the date of rejection

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memo / note. If seller fails to take back the rejected material from CFFP within 90 days from the date of rejection memo / note. CFFP has the right to dispose of the rejected material at the risk & cost of the seller and no further claim for the rejected material will be entertained.

**15. QUALITY REQUIREMENT:**

Your bid/quotation should have specific confirmation regarding meeting all our quality requirements such as.

- (i) Test Certificate (TC)/ Original Manufacturer's Certificate: Original Manufacturer Test Certificate is required along with the dispatch documents. In case supplies are from trader/ seller, it shall be responsibility of the trader/ seller to provide Original Manufacturer's Test Certificate with linkage to trader/ seller invoice stating batch no.
- (ii) Guarantee Certificate (GC) / Warranty Certificate (WC),
- (iii) Quality Plan (QP) (if applicable); and
- (iv) Pre-Dispatch Inspection at your works (if applicable).

**16. VALIDITY:**

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

**17. RIGHT OF ACCEPTANCE**

- 17.1** BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR reserves the right to reject any or all the bids/quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charge.
- 17.2** Any discount/revised offer/bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer/bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.
- 17.3** Unsolicited discounts/revised offers/bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- 17.4** In case of changes in scope and/or technical specification and/or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for, then latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.
- 17.5** The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- 17.6** BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

**18. TRANSIT INSURANCE**

- 18.1** All bidders are requested to quote their prices on FOR destination basis. Destination shall be Central Stores, C.F.F.P., BHEL Ranipur, Haridwar. Quoted price shall be inclusive of transit insurance.

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**18.2** In case bidder has submitted their offer without confirmation to transit insurance to their account in their offer, BHEL will load their offer at the applicable rate at that time.

**19. RISK PURCHASE**

In case of abnormal delays in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

**20. FORCE MAJEURE CLAUSE**

**20.1** Either party shall be entitled to suspend/cancel performance of his obligations under the contract without any cost to the other party, to the extent that such performance is impeded or made unreasonably onerous by any of the following circumstances: fire, war, flood, riots, earthquake, any other act of God, change in Government Policies, terrorist attack etc. or any other circumstances beyond the control of either party which inter alia include cancellation, suspension of order by end customer due to Force Majeure conditions.

**20.2** The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

**20.3** Regardless of what might otherwise follow from these general conditions, either party shall be entitled to terminate the contract by notice in writing to the other party if performance of the contract remains suspended under Clause Force Majeure for more than six months.

**21. FRAUD PREVENTION POLICY:**

The bidder along with its associate/ collaborators/ subcontractors/ sub vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

**22. NON DISCLOSURE AGREEMENT :**

All Drawing and Technical Documents relating to the product or its manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

**23. SETTLEMENT OF DISPUTES/ ARBITRATION**

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In all cases of dispute the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

**JURIDICTION:** The courts of Haridwar, India, shall have exclusive jurisdiction

**24. WHARFAGE/ DEMURRAGE RESPONSIBILITY**

In the event of delay in receipt of documents by Manager (Central Stores-CFFP) BHEL-Haridwar and in case where dispatches are made through Unapproved Transporter the sole responsibility for wharfage /demurrage for such delay shall be that of supplier.

**25. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE's) BENEFITS**

**25.1** MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.

**25.2** Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration :-

- a. Valid NSIC Certificate or
- b. Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
- c. EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure-A) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over.

However, credentials of all MSE supplier will be verified before advancing the intended benefits.

**25.3** MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.

**25.4** In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1 bidder, then BHEL can consider to offer quantities of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15 % band and the same is accepted by more than one MSE bidders then offer quantities of respective items will be considered for ordering amongst MSE bidders.

***Quotations/ Bids not accordance with General Terms and Conditions are likely to be ignored.***



**BHARAT HEAVY ELECTRICALS LIMITED**  
**C.F.F.P: HARIDWAR, UTTRAKHAND -249403**

**General Instruction And Standard Terms & Conditions for bidding against Tender Enquiry**  
**FOR INDIAN BIDDERS ONLY**

**DOCUMENT NO. : CFFP/MM/PUR/GT/IN/01 REV01 Dated 07.12.2016**

- 25.5** In case CFFP, BHEL has envisaged two party ordering to for this tender enquiry on 70:30 basis i.e. 70% to L1 vendor and 30% to L2, L3,..... vendor then
- a.** In case L1 vendor is non MSE vendor then 70% will be ordered to L1 Vendor and balance 30% will be offered to MSE vendors equally.
  - b.** In case L1 vendor is MSE vendor then 70% will be ordered to L1 vendor and balance 30% to L2, L3,..... vendor who matches L1 price based on rank i.e. 1<sup>st</sup> it will be offered to L2 Vendor, if accepted the ordered and in case not accepted by L2 vendor then 1uantity will be offered by L3 vendor and so on.
  - c.** In case none of the vendor is MSE vendor then normal procedure will be followed.
- 25.6** In all other cases, quantity up to 20% will be reserved for MSE vendor(s) and following process will be adopted.
- a.** In case L1 vendor is MSE vendor then full quantity to be ordered on L1 vendor.
  - b.** In case L1 vendor is non-MSE vendor then 80% will be ordered on L1 vendor and balance 20% will be distributed to MSE vendors as detailed in Clause 25.4 above.
  - c.** In case none of the participating vendor is MSE vendor, normal procedure will be followed.
- 25.7** Cases where CFFP decides to order on 3 vendors then last percentage indicated in the Tender Enquiry will be reserved for MSE vendors.
- 25.8** While distributing the 20% quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR (Supplier Performance Rating) rating.
- 25.9** In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost .
- 25.10** In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR (Supplier Performance Rating) rating shall be given preference.

**26. CONDITION TO BREAK TIES IN LANDED PRICE:**

***Quotations/ Bids not accordance with General Terms and Conditions are likely to be ignored.***



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- 26.1** Cases where landed price two or more vendors are same then while ordering preference will be given to vendor/ seller whose conditions are favorable to CFFP. If all conditions are same for vendors then whose Supplier Performance Rating (SPR) is more shall be given preference.
- 26.2** First time vendor (new vendor) of vendor who has not executed any PO in material category of the tender enquiry item/s, their Supplier Performance Rating (SPR) will be treated as Zero.
- 26.3** In case, SPR of vendors are equal, then quantity will be distributed equally between those vendors who have quoted lowest landed rate. If quantity ordered is only one piece or where quantity can't be divided equally then the preference will be given to vendor whose Quality Rating is more. If Quality Rating is also same then ordering will be on vendor whose delivery rating is better.

**27. INFORMATION TO THE BIDDERS**

- 27.1** Purchase related information is available at our Business- to-Business (B2B) Portal available on our website [www.bhelhwr.co.in](http://www.bhelhwr.co.in) The user ID & password can be obtained by sending a request to concerned purchase executives.
- 27.2** Intimate your change in mail address or communication address or changes, if any, by email to [hwcmm@bhelhwr.co.in](mailto:hwcmm@bhelhwr.co.in) giving your bidder Code.
- 27.3** Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site [www.bhelhwr.co.in](http://www.bhelhwr.co.in)

**28. NOTE**

Special conditions of enquiry, if enclosed, will supersede the standard/general terms of enquiry. Any other Standard terms and Conditions of the bidder attached/referred against the tender enquiry will be treated as null and void.

**Terms and conditions regarding Indian agent of foreign suppliers:**

01. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines- which require mandatory submission of an Agency agreement.
02. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
03. The agency agreement should specify the precise relationship between the foreign OEM/Foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier / Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the agreement and be made explicit in order to ensure compliance to laws of the country.
04. Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.
05. Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.
06. In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representatives/ associate/consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.
07. The "Guidelines for Indian Agents of Foreign Suppliers" enclosed at annexure- 'A' shall apply in all such cases.
08. The supply and execution of the Purchase Order (including indigenous suppliers/service) shall be in the scope of the OEM/ Foreign principal. The OEM/ Foreign principal should submit their offer inclusive of all indigenous suppliers/services and evaluation will be based on 'total cost to BHEL'. In case OEM/ foreign principal recommends placement of order(s) towards indigenous portion of supplies/services on Indian Supplier (s)/ agent on their behalf, the credentials/capacity/capability of the Indian Supplier (s)/ agent to make the supplies/Services shall be checked by BHEL as per the extant guidelines of Supplier Evaluation, Approval and Review Procedure (SEARP), before opening of price bids. In this regards, details may be checked as per Annexure- 'B' (copy enclosed). It will be the responsibility of the OEM/ Foreign Principal to get acquainted with the evaluation requirements of Indian supplier/agent as per SEARP available on [www.bhel.com](http://www.bhel.com).

The responsibility for successful execution of the contract (including indigenous supplies/services) lies with the OEM/ foreign principal. All bank guarantees to this effect shall be in the scope of the OEM/Foreign principal.

### **Guidelines for Indian Agents of Foreign Suppliers**

- 1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.
- 1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/ salary/ retainership being paid by the principal to the agent before the placement of order by BHEL.
- 1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.
- 2.0 **Disclosure of particulars of agents/ representatives in India, if any.**
- 2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:
  - 2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India if any and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.
  - 2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.
  - 2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.
- 2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:
  - 2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.
  - 2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.
  - 2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.
- 2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.
- 2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.

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## Annexure-B

This format is applicable only to Indian Suppliers/ Agents supplying indigenous portion of Foreign Purchases.

\* In all other cases, extant guidelines of SEARP, 2010 are to be followed.

| SEARP<br>(SRF)<br>Clause No | Detail                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | <b>Name &amp; address of the firm</b>                                                                                                                                                                                                                                                                                    |
| <b>1.0</b>                  | <b>Products/ Systems / Services being considered for</b>                                                                                                                                                                                                                                                                 |
| <b>2.0</b>                  | <b>General Information</b>                                                                                                                                                                                                                                                                                               |
| 2.2                         | Name of Chief Executive                                                                                                                                                                                                                                                                                                  |
| 2.3                         | Details of authorized signatory                                                                                                                                                                                                                                                                                          |
| <b>3.0</b>                  | <b>Ownership Information</b>                                                                                                                                                                                                                                                                                             |
| 3.1                         | Type of firm                                                                                                                                                                                                                                                                                                             |
| 3.2                         | Nature of Business <ul style="list-style-type: none"> <li>• Attach <b>authorization letter</b> and <b>agency agreement</b> from Principal ( from whom capital equipment is procured)</li> <li>• Attach copy of declaration from Foreign Principal for <b>total guarantee/ warranty of indigenous supplies</b></li> </ul> |
| 3.3                         | Year of establishment                                                                                                                                                                                                                                                                                                    |
| 3.4                         | Year of commencement of business                                                                                                                                                                                                                                                                                         |
| <b>4.0</b>                  | <b>Registration particulars</b>                                                                                                                                                                                                                                                                                          |
| 4.1                         | Permanent Account No.                                                                                                                                                                                                                                                                                                    |
| 4.2 / 4.3                   | Sales Tax / TIN no                                                                                                                                                                                                                                                                                                       |
| 4.6                         | Service tax no. (in case of E&C)                                                                                                                                                                                                                                                                                         |
| <b>5.0</b>                  | <b>Organisational strength</b>                                                                                                                                                                                                                                                                                           |
| <b>6.0</b>                  | <b>Other particulars</b>                                                                                                                                                                                                                                                                                                 |
| 6.1                         | If the company is already registered with other units                                                                                                                                                                                                                                                                    |
| 6.2                         | Directors/ Partners, if related to any BHEL Employee                                                                                                                                                                                                                                                                     |
| 6.9                         | If any Ex BHEL Personnel employed by the Company                                                                                                                                                                                                                                                                         |
| 6.12                        | Details of pending legal issues with BHEL                                                                                                                                                                                                                                                                                |
| 6.13                        | Bank Account information                                                                                                                                                                                                                                                                                                 |
| <b>9.0</b>                  | <b>Financial information</b>                                                                                                                                                                                                                                                                                             |
| 9.6                         | Sales/ Turnover details of last 3 years (or from the date of incorporation whichever is less )                                                                                                                                                                                                                           |

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