

**Mandatory Pre-Qualification Requirements-Technical for Carbon Brush (W98414300340)**

**Material Description & Grade:**

Carbon Brush with flexible end connection, used in Static Exciter. Requirement is as per below details:-  
Carbon Brush grade HM100 of M/s Assam Carbon or grade 634 of M/s Morgan or grade LFC554 of M/s Carbon Lorraine (Mersen) or other equivalent grades suitable for peripheral speed of minimum 55 meter/sec and current density of minimum 10 A/cm<sup>2</sup>.

**Mandatory Pre-Qualification Requirements:**

1. Vendor should have experience of manufacturing & supplying at least 20 nos. of Carbon Brushes in last 7 years (on the date of enquiry) as per the grades/parameters mentioned above in material description & grade. Vendor shall furnish technical datasheets of their supplied Carbon Brushes.
  - a) In support of the above Vendor shall furnish their experience list as per the following format:

Sl. No.	Name & Address of customer	Purchase Order no.	Size/Dimensions (mm)	Qty.	Date of Supply	Application

- b) Vendor must furnish copy of unpriced PO from above list and corresponding test certificates for at least one PO from the above list. The test certificates must be accepted by customer or certified by third party inspection agency. The above certificates should contain information like item dimensions, grade etc.

2. **MANUFACTURING FACILITIES:** Vendor shall confirm that they have manufacturing facilities suitable to produce Carbon Brushes used for current transfer in rotating electrical machine and furnish details of the manufacturing facilities available at their works.

3. **TESTING FACILITIES:**

Details of in-house testing facilities as per the requirement of enquiry specification to be submitted with offer. In case of outsourcing of tests, vendor to agree for testing at Government/International agency's accredited labs only.

4. Vendor to confirm that material shall be supplied as per BHEL's enquiry specifications and drawing.

**Notes:**

1. The vendor must furnish all the documents in English language only. If the documents are not in English, then they must be accompanied by duly certified English translations of the same.

## Pre-Qualification Requirements (Technical) for Double/Two Layer Carbon-Brush

**Material Description & Grade** Double Layer (Silver / Graphite) Carbon Brush with flexible end connections as per below detail

Silver layer grade ASG1 / Carbon layer grade HM100 of M/s Assam Carbon  
or S13 / F19 grade of M/s Schunk  
or AG20 / LFC554 of M/s Carbon Lorraine (M/s Mersen)  
or other equivalent grades for referred application.

**Application** Grounding stray charges, Rotor Earth Fault monitoring, etc. in shaft train of rotating electrical machines

### Mandatory Pre-Qualification Requirements

1. Vendor should have experience of manufacturing & supplying at least 20 nos. of Double Layer Carbon Brushes in last 7 years (on the date of enquiry) used for grounding stray charges, Rotor earth fault monitoring, etc. in shaft-train of rotating electrical machines.
  - a. In support of above, vendor shall furnish their experience list as per the following format to BHEL.

Sl. No	Name & Address of Customer	PO No.	PO Date	Size / Dimensions (mm)	Grade	Quantity

- b. Vendor must furnish copy of at least one unpriced PO and corresponding test certificates from the above list. The test certificates must be accepted by end-user or certified by third party inspection agency. The above certificate should contain information like item details, dimensions, grade and properties.
2. Vendor to confirm that they have manufacturing facilities for Double Layer Carbon Brushes. Details of manufacturing facilities to be furnished.
3. Vendor to confirm that they have facilities for carrying out the tests as mentioned in the respective drawings and provide details of test equipment available at their works. If the vendor plans to outsource any testing; particulars of the laboratory to be furnished. The testing facilities should be duly calibrated against national or international standards.
4. Vendor to confirm to meet the technical requirements of specifications and drawings, as per tender-enquiry.

### Notes

- i. All the documents should be submitted in consolidated manner and in English language

MANUFACTURER'S NAME AND ADDRESS			QUALITY PLAN				TO BE FILLED BY BHEL		TO BE FILLED BY BHEL			
BHEL	VENDOR'S NAME	ITEM			QP NO.							
					REV							
		DRG. NO.	AS PER PO									
		SPEC.	AS PER PO									
		REV										
		Page 1 of 1										
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY			REMARKS
									M	B	N	
1	2	3	4	5	6	7	8	9	D	10		11


**Note 1:** BHEL approved NDT procedure should be obtained by vendors before performing NDT , if the same is not already available with the vendor for the job.

**Note 2:** All page of inspection documents shall be numbered in chronology with the QAP clause , dully mentioning the corresponding QAP clause nos. at the top of each page. One index page containing the documents descriptions, their page no & QAP clause shall be attached upfront the inspection documents.

MANUFACTURER/SUBCONTRACTOR		LEGEND:	FOR CUSTOMER USE	
		! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.		APPROVED BY
		M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		