



Eol for Development of Vendors for supply of Magnetic Steel Sheet Varnish to BHEL FSIP Jagdishpur , Amethi

Ref. FSIP/EOI/STM/2023-24-001

Date: 06.04.2024

Expression of Interest

Subject: Development of Vendors for the supply of Magnetic Steel Sheet Varnish at BHEL

This has reference to the Expression of Interest (Eol) published on BHEL's website www.bhel.com for Vendor development for the supply of the Magnetic Steel Sheet Varnish as per the requirement placed by BHEL.

1) Introduction:

This Expression of Interest (Eol) seeks responses from prospective **Indian Vendors** who are Original Equipment Manufacturers (**OEMs**), fulfilling all the requirements of this Eol, and are willing to be associated with Bharat Heavy Electricals Limited (BHEL) for the supply of the Magnetic Steel Sheet Varnish Specification No. AA27541 rev01. The Vendor needs to supply the Magnetic Steel Sheet Varnish as per the requirements of the BHEL.

2) About Bharat Heavy Electrical Ltd (BHEL):

BHEL is a leading state-owned company, wherein the Government of India is holding 63.17% of its equity. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing organization in India, catering to the core infrastructure sectors of Indian economy viz. energy, transportation, and heavy engineering industry, and defense, renewable and non-conventional energy. The energy sector covers generation, transmission and distribution equipment for thermal, gas, and hydro, nuclear and solar photovoltaic. BHEL has been in this business for more than 50 years and has supplied equipment's accounting for more than 57% (approx. 180 GW) of the total thermal generating capacity in India. BHEL is also listed in Indian stock exchanges. BHEL has 16 manufacturing units, 4 power sector regions, 8 service centres and 15 regional offices besides host of project sites spread all over India and abroad. BHEL has its footprint in all the inhabited continents with references in 88 countries including Malaysia, Oman, Iraq, Syria Sudan, Libya, Cyprus, Malta, Afghanistan, Bangladesh, Bhutan, New Zealand etc. with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW. The annual turnover of BHEL for the year 2021-22 was around US\$ 2.78 Billion. BHEL's highly skilled and committed manpower of approx. 30000; state-of-the-art manufacturing, R&D facilities and latest technologies helped to deliver a consistent track record of performance since long. To position leading state-owned companies as Global Industrial giant and as a recognition for exemplary performance, Government of India categorized BHEL as "Maharatna Company" in 2013.

The high level of quality & reliability of BHEL products is due to adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world, together with technologies developed in its own R&D centers. For more details about BHEL, please visit our website <http://www.bhel.com>.

3) About Fabrication Stamping & Insulator Plant (FSIP) unit of BHEL

BHEL FSIP, Jagdishpur is spread in about 150 Acre area, located in Amethi District of Uttar Pradesh, 80 Kms away from Lucknow on Lucknow-Varanasi National high-way and is well connected by railroad and air as well.

FSIP unit involve in the manufacturing of Power plant Structures, Stamping for traction motors & generators and High tension Porcelain Insulators, Ceramic wear resistant lined components & liners.

FSIP has well-established manufacturing systems and procedures and has the requisite skilled and experienced manpower. The Units are certified for the Quality Management System against ISO9001:2015 and Health,



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Safety & Environmental Management (HSE) System for ISO-14001:2015 & ISO45001:2018. The products of FSIP are tested and certified with respect to relevant National & Inter National standards at reputed laboratories. The operations of FSIP are supported by BHEL Corporate R&D.

4) Present Expression of Interest:

BHEL is looking for **Indian OEM vendors** who can supply **Magnetic Steel Sheet Varnish Specification No. AA27541 REV 01** to FSIP as per the requirements. Based on this Eol process the selected vendor will supply the **Magnetic Steel Sheet Varnish** to the BHEL as per the requirements.

BHEL shall receive applications pursuant to this Eol in accordance with the terms set forth herein, as modified, altered, amended, and clarified from time to time by BHEL, and all Applications shall be prepared and submitted in accordance with such terms. This is an Open Ended EOI unless until superseded and interested OEMs may approach BHEL FSIP Jagdishpur at any working day.

5) Scope of Supply:

BHEL seeks a prospective Vendor for supply **Magnetic Steel Sheet Varnish Specification No. AA27541 REV 01** to FSIP as per the requirements. Average Annual requirement of Magnetic Steel Sheet Varnish is about 24 MT at FSIP, Jagdishpur and it may change depending upon requirement of BHEL and market scenario.

6) Obligations of Prospective Vendor(s):

The obligations of the selected vendor (s), inter alia, shall be as below:

- A) Any kind of CAPEX deployment to meet the BHEL requirements will be done by Vendor only. BHEL will not be responsible for any kind of capital expense.
- B) The Prospective Vendor is required to confirm that in case of getting shortlisted as a result of this Eol process, the following support shall necessarily be provided to BHEL.
 - i The vendor needs to qualify the Magnetic Steel Sheet Varnish at FSIP, Jagdishpur or the labs specified by BHEL.
 - ii Magnetic Steel Sheet Varnish required for qualification shall be provided free of cost to FSIP, Jagdishpur FOR basis. Samples once submitted shall be used for testing & qualification and shall not returned.
 - iii Vendor may submit fresh samples with necessary improvements for further evaluations.
 - iv After Sample qualification, vendors whose samples are qualified, need to participate in tender for placement of PO. Vendors need to supply the Magnetic Steel Sheet Varnish as per specification within the specified time as per the PO requirements
 - v Any other statutory requirement felt necessary as per the various notifications issued by the Central Govt or State Govt agencies.

Above mentioned requirements are only indicative in nature, however, any other document/information/input required by BHEL shall have to be provided by the prospective vendor.



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7) Selection of Prospective Vendor(s):

Based on the information provided under this EoI, the prospective vendor(s) shall be shortlisted on the basis of the Details/Information specified in **Annexure-1**. The techno-commercial negotiations might be held if required with the shortlisted prospective vendor(s). **BHEL may place developmental order as deemed fit by BHEL to prospective vendor based on their company background, technical capabilities /features/ product catalog, commitment made for development of indigenous manufacturing capacity. However BHEL is not bound to release developmental order to any or all participants of this EOI.**

8) Brief Description of the EOI Process:

The interested prospective vendor(s) shall ensure that their response(s), along with details requested as per the Annexures of this EoI. The response(s) shall necessarily be accompanied by details on the company background, technical features/ product catalog, reference list, annual audited financial reports for the last 3 (three) years including auditor's report and other enclosures as required under the present EoI. The responding prospective vendors(s), on submission of their response(s), can be called for further discussions at a short notice.

The vendor registration will be done as a result of the EOI.

Date of commencement of the EOI: 06.04.2024

Date of End of the EOI: open ended

The respondent shall submit their responses with all Annexures duly signed. In case any further information is needed, kindly feel free to contact us. In case any amendment/ corrigendum is issued to this EoI, it shall be notified only at www.bhel.com.

9) Contact details:

The respondent shall submit/send their offer with all annexures duly signed at the following addresses:

Pankaj Kumar Mishra
Dy. Manager-Material Management
Fabrication Stamping & Insulator Plant
Bharat Heavy Electricals Limited I.A.
Jagdishpur, Amethi-227817, U.P. Mob: +91
7351561122
Email: pankajkumar.mishra@bhel.in

OR

Pravin Kumar
Dy. Manager-Stamping
Fabrication Stamping & Insulator Plant
Bharat Heavy Electricals Limited I.A.
Jagdishpur, Amethi-227817, U.P.
Mob: +91 8874791048
Email: Pravin.gupta@bhel.in

10) Miscellaneous:

A. Right to accept or reject any or all Applications:

- 1) Notwithstanding anything contained in this EoI, BHEL reserves the right to accept or reject any Application and to annul the EoI Process and reject all Applications, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that BHEL rejects or annuls all the Applications, it may, at its discretion, invite all eligible OEMs/Suppliers to submit fresh applications.
- 2) BHEL reserves the right to disqualify any Applicant during or after completion of EoI process, if it is found there was a material misrepresentation by any such Applicant or the Applicant fails to provide, within the specified time, supplemental information sought by BHEL.
- 3) BHEL reserves the right to verify all statements, information and documents submitted by the Applicant in response to the EoI. Any such verification or lack of such verification by BHEL shall not relieve the Applicant of his obligations or liabilities here under nor will it affect any rights of BHEL.
- 4) The qualification of any vendor doesn't obligates BHEL for placing a P.O or any other type of the financial obligations.

B. Governing Laws & Jurisdiction

The EoI process shall be governed by, and construed in accordance with, the laws of India, and the Courts at Amethi (UP) shall have exclusive jurisdiction over all disputes arising under, pursuant, to and/ or in connection with the EoI process.

Annexure-1

Details/Information required from prospective Vendor

Experience & Qualification

S No.	Item	Requirement	Confirmation
1	Experience	The prospective vendor should preferably be manufacturer of the Magnetic Steel Sheet Varnish / insulating electrical varnishes / related materials.	Yes/No
2	Manufacturing Capacity	Vendor to submit manufacturing capacity details for products / key machinery details / any other manufacturing details relevant for Varnishes	Yes/No
3	Financials	Annual audited financial reports for the last 3 (three) years	Yes/No

**Relevant documentary evidence to substantiate the fulfilment of the above requirements is to be furnished along with the response.*



Disclaimer:

The information contained in this Expression of Interest document (the “Eol”) or subsequently provided to Applicant(s), whether verbally or in documentary or any other form, by or on behalf of BHEL or any of its employees or advisors, is provided to Applicant(s) on the terms and conditions set out in this Eol and such other terms and conditions subject to which such information is provided.

This Eol is not an agreement .The purpose of this Eol is to provide interested prospective Vendors with information that may be useful to them in the formulation of their application for qualification pursuant to this Eol.

BHEL also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Applicant upon the statements contained in this Eol.

The issue of this Eol does not imply that BHEL is bound to select and shortlist Applicants for the next stage or to enter into any technology tie-up agreements with shortlisted Applicants for the project.



CORPORATE PURCHASING SPECIFICATION

AA 275 41

Rev. No. 01

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MAGNETIC STEEL SHEET VARNISH**1.0 GENERAL:**

This specification covers the technical requirements of pigmented, water-thinnable and hot curing synthetic resin varnish.

2.0 APPLICATION:

The varnish is used for insulation of cold and hot rolled magnetic steel sheets. The cured varnish is suitable for temperature endurance stability at 180⁰ C and for short periods at 220⁰ C

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian standard covering this material. The standard is based on BHEL experience.

4.0 QUALITY CONTROL TESTS :**4.1 Physical Conditions :**

The varnish shall be homogenous after stirring and freely soluble in water. The varnish shall be free from gelled particles and foreign impurities.

4.2 Density :

1.70 to 1.90 Kg / dm³

4.3 Viscosity :

130 ± 20 seconds at 20 ± 2°C by DIN cup of 4 mm orifice to DIN 53211.

Alternatively

180 ± 30 seconds at 27 ± 2°C by IS flow cup to IS 3944.

Revisions :

32nd MOM of MRC-E

APPROVED :

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE-MRC (E)

Rev. No. 01

Amd.No.

Reaffirmed

Prepared

Issued
Corp. R&D


Dt. of 1 st Issue
APRIL 2002

Dt:01.11.2002

Dt :

Year :

HARDWAR

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4.4 Composition of the varnish (in weight %) :

Solid content : 75 ± 5

4.5 pH value : 8.5 ± 1

5.0 INFORMATION FOR REFERENCE :

5.1 Materials :

5.1.1 Type of binder : Phenolic resin, Melamine resin

5.1.2 Organic solvents : Butylglycol, Butyldiglycol, Butanol, dimethylethanolamine

5.1.3 Fillers : Barium sulphate, Zinc sulphide

5.1.4 Solid content by volume : 51 ± 5% (The volatile portion consists of organic solvents and water in the weight ratio of 7 ± 1 to 20 ± 3).

5.1.5 Composition of solid content (in weight %) :

Total binder content : 29⁺⁵₋₈ (This includes a maximum of 12% emulsifier part)

Filler content : 71⁺⁸₋₅

5.1.6 Flash point : Not less than 55°C

5.2 Properties of cured varnish :


5.2.1 Colour : Grey


5.2.2 Lead Pencil Hardness : 7H, min

5.2.3 Interlaminar insulation resistance :

90% of results : Minimum 1 Megaohm-cm² / sheet

10% of results : Minimum 1 Kilo-ohm-cm² / sheet

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<div>5.2.4 Cross cut test : Gt OB as per DIN 53151</div> <div>5.2.5 Method of usage : The varnish shall be satisfactorily stirrable and processable by means of rubber rollers. (Rubber of shore hardness 40°–60°). The coating, after curing shall have minimum roughness.</div> <div>5.2.6 Test for curing of the varnish on the stamping : A soft cloth moistened with spirit (denatured Ethyl alcohol) is rubbed to and fro with hand pressure 10 times on the varnished surface of the sheet and observed. No varnish material removed from the sheet shall be seen on the moistened cloth. Also, there shall be no softening or dissolving of the insulation layer.</div> <div>6.0 SHELF LIFE : When stored in the original sealed container at normal temperature (max. 30°C), the varnish shall have a shelf life of minimum 12 months after delivery and shall satisfy all the requirements of this specification.</div> <div>7.0 SAMPLING : A sample shall be taken for testing from each supply after thorough stirring. If the results of these tests do not conform to this specification, two more samples from different containers are taken for repeat testing of those parameters, which were found deviating. If the results of the repeat tests also do not conform to this specification, then the entire supply is considered as not conforming to this specification.</div> <div>8.0 TEST METHODS : 8.1 Tests for Varnish in as-received condition : 8.1.1 Test for Density : This shall be determined by accurately weighing exact volume (minimum 25 ml) of the varnish at the specified temperature and calculating the ratio of weigh to volume. 8.1.2 Test for viscosity : This shall be determined by finding the time required for the varnish to flow while using either the DIN or IS flow cup, as the case may be, at the specified temperature.</div>		

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8.1.3 Test for Solid content : This shall be determined by finding the weight loss in a sample of not less than 0.1 g of the varnish when subjected to a temperature of $80 \pm 5^{\circ}\text{C}$ for 16 hours.

Alternatively, solid content can be determined on 1-2 g sample by finding weight loss at 120°C for 4 hours.

8.1.4 Test for pH value : This shall be determined by using a suitable electro-chemical pH meter.

9.0 TEST CERTIFICATE AND COMPLIANCE CERTIFICATE :

Unless otherwise specified, three copies of test certificates incorporating the properties as per clause 4 and compliance certificate with respect to other clauses shall be supplied with each consignment, indicating the following information :

- AA 275 41 (Rev 01): Magnetic Steel Sheet Varnish
- BHEL Order No.
- Batch / Lot No.
- Date of manufacture
- Size and No. of drums

10.0 PACKING & MARKING :

The varnish shall be suitably packed in 250 Kg drums or as stated in BHEL order to provide adequate protections to prevent any damage during transit and storage. The drum shall have a fully openable and sealable cover.

Each drum shall bear the following information :

- * Magnetic Steel Sheet Varnish
- * Specification No.,
- Batch / Lot No.
- Date of manufacture
- Date of expiry / Shelf life
- Net weight
- Supplier's name / grade



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11.0 ACCEPTANCE CRITERIA :

The material supplies shall be accepted on the basis of the following :

- i) Compliance certificate to AA27541, Rev 01 furnished by the supplier.
- ii) Test certificate furnished by the supplier and / or testing carried out at BHEL end.

12.0 ENVIRONMENTAL REQUIREMENTS :

The supplier shall furnish Material Safety Data Sheet (MSDS) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

13.0 REJECTION :

BHEL reserves the right to reject the entire lot of the material, if found not to comply with these requirements. Parts of the lot which are found to be defective or not complying with these requirements can also be rejected at a later stage.

14.0 REFERRED STANDARDS (Latest Publications Including Amendments) :

- 1) DIN 53211
- 2) DIN53151
- 3) IS : 3944