

	<b>BHARAT HEAVY ELECTRICALS LTD.,</b> <b>CORPORATE R&amp;D DIVISION</b> <b>VIKAS NAGAR, HYDERABAD-500093 (INDIA)</b>		Enquiry No. :	
			Date :	
	<b><u>PURCHASE SECTION</u></b>		<b><u>TECHNICAL SECTION</u></b>	<b><u>SPEC.NO.</u></b>
	91 40 2377 8474	<b><u>PHONE</u></b>	91 40 2377 4494 Ext.7326	ST:ICH:08:001
	91 40 2377 6320	<b><u>FAX</u></b>	91 40 23776320	
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<b><u>TENDER DOCUMENT FOR SUPPLY OF EPOXY MIXING &amp; POURING PLANT</u></b>				
<b>IMPORTANT</b>				
1. The offer and all documents enclosed with offer should be in <b>English language only</b> .				
2. Vendor must submit complete information against <b>Clause No. 21 Pre-Qualification Criteria</b> . <b><u>The offer meeting this clause would only be processed for Technical evaluation.</u></b>				
3. The Pre qualification criteria are <b>mandatory</b> requirements and <b><u>the technical bids will be evaluated only when the Pre Qualification criteria are met.</u></b>				
4. BHEL reserves the right to verify the information submitted by the vendor. <b><u>The offer with false/ incorrect/incomplete information may be rejected.</u></b>				
5.Pre qualification will be carried out based on the details furnished by the vendor / feedback from their customers / inspection of the company / product if required <b><u>by BHEL and at its sole discretion.</u></b>				
6. The vendor is required to sign and stamp all sheets.				
7. Offers submitted shall be valid for a period of minimum 6(Six) months from date of commercial bid.				
8. Revised technical bid may be necessary should the specification need up gradation/ modification on first technical scrutiny.				

<b><u>VENDOR DETAILS</u></b>					
<b>ADDRESS OF THE VENDOR :</b>					
<b>TELEPHONE NOS.:</b>					
<b>FAX NOS.:</b>					
<b>CONTACT PERSON:</b>					
<b>E-MAIL ADDRESS :</b>					
<b>SCOPE:</b>		<b>Design, manufacturing, pre-dispatch testing, supply, training, installation at site, commissioning and demonstration of Epoxy Mixing &amp; Pouring Plant and related accessories at BHEL, complying with the specifications listed in the Spec.No.MR:ICH:09:001.</b>			
<b>Quantity:</b>		<b>ONE (1) Set</b>			
<b>Serial No.</b>	<b>DESCRIPTION OF REQUIREMENT</b>	<b>DESIRED TECH. SPECIFICATION ( TO BE CONFIRMED BY VENDOR)</b>	<b>OFFERED</b>	<b>DEVIATIONS (IF ANY, ELSE PRINT NONE)</b>	<b>REMARKS</b>
1.0	<b>EQUIPMENT:</b> Epoxy Mixing & Pouring Plant consisting of jacketed, thermally insulated, oil heated, vacuum tight mixing chamber with motorized anchor stirrer and thermally insulated, electrically heated, vacuum tight pouring chamber along with vacuum pump, hardener & particle trap and control panel, hereinafter referred to as Epoxy Mixing Plant , complying with the specifications listed in Clause 2.0 to 11.0.	BHEL requirement			
1.1	<b>Intended Use:</b> Casting / moulding of insulating components / samples with thermosetting epoxy-anhydride and other epoxy combinations with ceramic / non-ceramic micro / nano sized inorganic / organic filler materials along with suitable flexibilizers, plasticizers, accelerators, pigments and other ingredients.	Vendor to confirm suitability of offered equipment			

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1.2	The equipment shall be a fully integrated plant, along with all necessary items / components / systems to obtain void free, blister free, smooth finished moulded product.	Vendor to confirm & substantiate suitability of offered equipment			
1.3	The vendor should suggest a complete arrangement and proposed plant layout with all appropriate dimensions to house the plant in a suitable location. Pre-installation requirements, other than the layout of location, such as grouting, the minimum required utilities like power, water, drainage etc., also should be clearly provided by the vendor. Material handling device/s and other utility devices specific to the plant and necessary for the smooth operation of the plant should be clearly spelt out, and if the same do not form the package quoted, the items should be quoted separately as <b>Optional item</b> .	Vender to specify			
1.4	Space requirement (Length, Breadth, Height), including the requirements for material handling device/s and other utility devices specific to the plant, taking into the account of maintenance requirements as well, and necessary for the smooth operation of the plant	Vender to specify			
1.5	Power requirement	Vender to specify			
1.6	Water requirement	Vender to specify			
1.7	Drainage requirement	Vender to specify			
<b>2.0</b>	<b>Specification for Epoxy Mixing &amp; Pouring Plant</b>				
2.1	<b>Design:</b> Jacketed, thermally insulated, oil heated, vacuum tight mixing chamber with motorized anchor stirrer and thermally insulated, electrically heated, vacuum tight pouring chamber along with vacuum pump, hardener & particle trap and control panel	Vender to specify			

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<b>3.0</b>	<b>CAPACITY</b>				
3.1	<b>Capacity of the Mixing Chamber:</b> About 10kg	Vender to specify			
<b>4.0</b>	<b>MIXING CHAMBER</b>				
4.1	<b>Design:</b> Jacketed, thermally insulated, oil heated, vacuum tight mixing chamber with motorized anchor stirrer	Vender to specify			
4.2	<b>Material of construction:</b> MS Sheet with suitable welded construction of adequate strength to withstand the specified vacuum under specified temperature	Vender to specify			
4.3	<b>Mixing Chamber Top:</b> Machined flange matching with the mixing chamber cover	Vender to specify			
4.4	<b>Mixing Chamber Bottom:</b> Conical shaped bottom at an approximate angle of 45 <sup>0</sup> C	Vender to specify			
4.5	<b>Pouring Arrangement:</b> Suitable pouring arrangement made of PTFE located at the conical end of the mixing chamber with facility for guided pouring into the Pouring chamber	Vender to specify			
4.6	<b>Mixing Chamber Cover:</b> Made of MS, matching machined flange with the mixing chamber top. The cover should have suitable dovetail groove for the nitrile rubber 'O' ring. Suitable valves for vacuum and air venting should be mounted on the cover	Vender to specify			
4.7	<b>Rubber 'O' Ring:</b> Nitrile rubber 'O' ring capable of withstanding 100 to 120 <sup>0</sup> C under vacuum.	Vender to specify			
4.8	<b>Mixing Chamber Cover Lifting:</b> Suitable lifting mechanism, preferably hydraulic, to be provided for completely lifting the Mixing Chamber cover for cleaning operations.	Vender to specify			

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4.9	<b>Process inspection :</b> 2 sight glasses with adequate illumination mounted on the Mixing Chamber cover for easy viewing of the contents	Vender to specify			
4.10	<b>Material filling:</b> Vacuum tight Addition port located on the mixing chamber cover to facilitate addition of resin, hardener and other ingredients	Vender to specify			
4.11	<b>Material Mixing:</b> Anchor type motorized stirrer with baffles. Stirrer, mounted on the mixing chamber cover to pass through a suitable housing having oil seal and adequate ball bearings for smooth rotation under vacuum	Vender to specify			
4.12	<b>Mixing Chamber Heating:</b> Mixing Chamber heating through jacketed oil heating. Preferably, the oil maybe heated electrically.	Vender to specify			
4.13	<b>Mixing Chamber Temperature:</b> Thermostatically controlled, temperature from RT to 100 <sup>0</sup> C	Vender to specify			
4.14	<b>Mixing Chamber Vacuum:</b> Up to 10 <sup>-3</sup> Hg, attained through the appropriately connected vacuum pump described in 7.0	Vender to specify			
<b>5.0</b>	<b>POURING CHAMBER</b>				
5.1	<b>Design :</b> Jacketed, thermally insulated, electrically heated, vacuum tight Pouring chamber with rotating, wheeled bottom disc, hinged front door	Vender to specify			
5.2	<b>Size:</b> Approximate dimensions of 750-1000mm Breadth x 750-1000mm depth x 1000mm Height	Vender to specify			
5.3	<b>Material of Construction :</b> MS Sheet with suitable welded construction of adequate strength to withstand the specified vacuum under specified temperature	Vender to specify			

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5.4	<b>Pouring Chamber Cover :</b> Matching machined hinged cover matching with the Pouring chamber. The cover should have suitable dovetail groove for the nitrile rubber 'O' ring. Cover to be tightened with the Pouring chamber with the help of adequate number of clamps. The cover to be fitted with an adequately sized sight glass with proper illumination.	Vender to specify			
5.5	<b>Rubber 'O' Ring:</b> Nitrile rubber 'O' ring capable of withstanding 150 to 160°C under vacuum.	Vender to specify			
5.6	<b>Pouring Chamber Heating :</b> Pouring Chamber heating through electrical heating ensuring uniform heating of the chamber	Vender to specify			
5.7	<b>Pouring Chamber Temperature :</b> Thermostatically controlled, temperature from RT to 150 - 160°C	Vender to specify			
5.8	<b>Pouring Chamber Vacuum :</b> Up to 10 <sup>-3</sup> Hg, attained through the appropriately connected vacuum pump described in 7.0	Vender to specify			
<b>6.0</b>	<b>HARDENER &amp; PARTICLE TRAP</b>				
6.1	<b>Design:</b> Water jacketed trap, made of MS, mounted on the Mixing chamber for capturing the hardener particles and other particles.	Vender to specify			
<b>7.0</b>	<b>VACUUM PUMP</b>				
7.1	<b>Design:</b> Root / rotary vacuum pump of about 600-700 Liters/min displacement	Vender to specify			
7.2	<b>Vacuum :</b> Up to 10 <sup>-3</sup> Hg, displayed through suitable vacuum gauges mounted on the Mixing & Pouring chambers	Vender to specify			
<b>8.0</b>	<b>MOUNTING LADDER</b>				
8.1	<b>Design:</b> Suitable ladder of MS to be provided for convenient reach to the top of the Mixing chamber for transfer of resin, hardener and other ingredients	Vender to specify			
<b>9.0</b>	<b>CONTROL PANEL</b>				
9.1	<b>Design:</b> 3 phase 415V, 50 Hz AC powered centralized control panel mounted with starters, contactors, protective fuses, indicating lamps and other fixtures.	Vender to specify, confirm & substantiate			

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<b>10.0</b>	<b>PAINTING</b>				
10.1	All the items to be painted rust proof, thermally stable Light Grey	Vender to specify			
<b>11.0</b>	<b>MOUNTING</b>				
11.1	All the items to be mounted on a fabricated base of approximately 500mm height from the floor.shall be provided for the operator prior to commencement of ejection process.	Vender to specify			
<b>12.0</b>	<b>SPARES AND SERVICE</b>				
12.1	Essential Spares like heat transfer oil, grease and other items for trouble free operation for one replacement to be supplied along with main equipment. List of back up spares if any for the smooth, trouble free operation of the plant shall be provided.	Vender to specify			
<b>13.0</b>	<b>PRE-DESPATCH INSPECTION (PDI)</b>				
13.1	A list of proposed tests along with the schedule for the same shall be furnished by the vendor along with the technical offer. All tests shall be performed, at vendor's cost, at vendor's works on the system in presence of BHEL representatives, deputed at BHEL cost, before dispatch.	Vendor to confirm			
<b>14.0</b>	<b>OPTIONAL ACCESSORIES</b>				
14.1	The vendor shall submit list of optional accessories, if any, along with complete specification with the technical offer.	Vender to specify			
<b>15.0</b>	<b>DOCUMENTATION</b>				
15.1	Two sets of documents (Hard Copies) in English, as enumerated in Clause 15.2 to 15.6, should be supplied along with the machine.	Vendor to confirm			
15.2	Operating manuals in English for the Plant, systems, sub-systems and related Accessories.	Vendor to confirm			

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15.3	Detailed Maintenance manual with all drawings, circuit diagrams in English. All Assembly / Sub Assembly Drawings shall also be supplied including part list.	Vendor to confirm			
15.4	Test and Guarantee certificates in English	Vendor to confirm			
15.5	Catalogues of all bought out items including drawings where ever applicable, in English.	Vendor to confirm			
15.6	Complete Master List of parts in English used in the machine shall be supplied by the vendor.	Vendor to confirm			
<b>16.0</b>	<b>TRAINING</b>				
16.1	BHEL staff to be trained for acquaintance on operation and maintenance of supplied equipment <b>at premises of the VENDOR / BHEL</b> . Not less than TWO numbers of Persons deputed by BHEL shall be trained for mutually agreed period in area of use of all features, moulding technique, operating instructions, warnings and precautions. While the incidental expenditure towards travel, boarding & lodging of BHEL representatives shall be born by BHEL, the vendor should indicate the cost of training, if any, separately if the same do not form the package quoted.	Vendor to confirm			
<b>17.0</b>	<b>COMMISSIONING/ DEMONSTRATION :</b>				
17.1	All necessary tools, fixtures and other items required for the commissioning of equipment within stipulated time shall be brought by vendor on returnable basis.	Vendor to confirm			
17.2	Charges, if any, towards the service charges / commission to the authorized dealer(s) / representative(s) for sales & service, should be furnished in detail separately by the vendor along with the offer.	Vendor to confirm			
17.3	Charges and terms, if any, towards the commissioning and demonstration should be furnished in detail separately by the vendor along with the offer.	Vendor to confirm			



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17.4	The offers shall be evaluated by appropriately loading the service charges / commission ( <b>Clause 17.2</b> ) & commissioning charges and other incidentals ( <b>Clause 17.3</b> ) on "Cost to the Company" basis, while evaluating the bid.	Vendor to confirm			
17.5	The vendor shall Demonstrate all features of the machine, control system and the accessories, including trial runs to the satisfaction of BHEL during the Commissioning / Demonstration.	Vendor to confirm			
18.0	<b>SAFETY ASPECTS:</b> The vendor must take care of all safety aspects regarding the equipment and operating personnel.	Vendor to confirm			
19.0	<b>PERFORMANCE GUARANTEE:</b> 12 months from the date of commissioning and acceptance of equipment.	Vendor to confirm			
20.0	<b>GENERAL :</b> The vendor must supply the following information about the proposed equipment along with the offer :				
20.1	Machine Model No.	Vendor to specify			
20.2	Floor Area Required (Length, width, height, weight) for complete machine and accessories.	Vendor to specify			
20.3	All essential accessories for the satisfactory operation are to be included and listed. Any additional accessories are to be mentioned separately.	Vendor to specify			
20.5	Detailed catalogue, sketch / photographs of the machine and accessories / attachments should be submitted with the offer	Vendor to confirm			
20.6	Load bearing capacity and the floor requirement, including grouting	Vendor to specify			
21.0	<b>PRE-QUALIFICATION CRITERIA</b>				
21.1	The vendor offering the product should have ISO 9001:2000 Accreditation. Proof to this effect should accompany the offers.	Vendor to comply			

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21.2	The vendor should be capable of offering prompt after sales / service support within the shortest time of posting such requirement, preferably through a Local Service Support Facility / Arrangement at Hyderabad. An undertaking to this effect should accompany the offers	Vendor to comply			
21.3	The vendor should have supplied similar product to leading Central / State Govt. departments / undertakings / companies including other ISO 9001:2000 Accredited companies / test houses, and a list of such installations along with contact addresses for the last minimum three consecutive years should be attached along with the offers.	Vendor to comply			
21.4	Offer shall be for new equipment and not for any refurbished / used equipment. All the parts used in the machine shall also be new and not used / refurbished ones. A declaration to the above effect to be furnished.	Vendor to comply			
21.5	In addition to the normal offer containing all the relevant details the vendor may submit, the vendor is required to make appropriate entries in the respective columns of this NIT, sign and stamp all sheets. Incomplete NIT form is likely to be rejected at the sole discretion of BHEL	Vendor to comply			
21.6	The vendor shall be in a position to undertake AMC or provide service support for the equipment supplied, after the expiry of the warranty/ guarantee period.	Vendor to confirm			
21.7	The vendor shall furnish a comprehensive warranty for at least 12 months from the date of commissioning or 18 months from the date of delivery, whichever is early.	Vendor to confirm			
21.8	The vendor shall guarantee the performance of the equipment for at least 12 months from the date of commissioning.	Vendor to confirm			