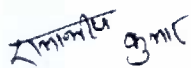




CENTRAL FOUNDRY FORGE PLANT
BHARAT HEAVY ELECTRICALS LIMITED

SPECIFICATION FOR HOLDING FURNACE WITH TILTING ARRANGEMENT
SPECIFICATION NO. FT/SP/74 REV 01

Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
Vendor must confirm/specify details as demanded against each clause of this specification. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance. In case of response is "NO" against any clause the justification of that may be provided separately mentioning the clause number with its detail however non acceptance generally will be considered as noncompliance and hence offer may be rejected.			
1.0	<u>OBJECTIVE:</u>		
1.1	The electrically operated equipment shall be used for holding of liquid aluminium alloy and suitable manual tilting arrangement with provision for degassing of the melt using a degassing machine. The degassing machine is not in scope of supply.	Vendor to confirm	
2.0	<u>PRE-QUALIFICATION CRITERIA:</u>		
2.1	The vendor should have supplied equipment as specified in Clause 1.1. Proof of supply of at least 3 numbers of equipment in last 5 years (year ending tender opening date) to be submitted along with offer.	To be submitted: Purchase orders copies of supplies, preferably with performance certificate	
3.0	<u>SCOPE OF SUPPLY:</u> Scope of supply includes design, manufacturing, supply and commissioning of the Holding furnace at CFFP/BHEL Haridwar. The technical and general requirements of the Holding furnace are given below.		
3.1	Capacity 300 kg	Vendor to take note and confirm	
3.2	Temperature to be maintained in melt: 850 °C maximum	Vendor to take note and confirm	

Prepared by			Checked & Approved by
			
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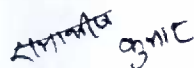


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3.3	Suitable arrangement for manual tilting of furnace to be provided.	Vendor to take note and confirm	
3.4	The furnace should be amenable for carrying out degassing operation.	Vendor to take note and confirm	
3.5	Manually operated top cover is to be provided to conserve the heat in the furnace.	Vendor to take note and confirm	
3.6	Furnace should be equipped with temperature sensor. Temperature indicator and controller mounted inside a control panel will control the furnace in On/Off mode.	Vendor to take note and confirm	
3.7	2 Nos. of suitable crucible (Morganite SiC) alongwith its stand should be provided alongwith the holding furnace.	Vendor to take note and confirm	
3.8	Control panel should house necessary MCBs (L&T/Siemens make), contactors (L&T/Siemens make), ammeters (Kappa/AE make), voltmeter with VSS, Energy Meter, indicating lamps (L&T/Siemens make), switches (L&T/Siemens make), etc.	Vendor to take note and confirm	
3.9	One set of immersion pyrometer alongwith digital temperature indicator to measure the temperature of liquid bath is to be provided alongwith the equipment	Vendor to take note and confirm	
4.0	<u>MATERIAL OF CONSTRUCTION:</u>		

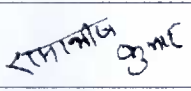
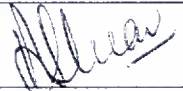
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4.1	Furnace should be of cylindrical shape with mild steel shell suitably reinforced. It should have appropriate lining of ceramic fibre blanket. The construction should be rigid and suitable to the general foundry environment.	Vendor to take note and confirm	
4.2	Heating element coils are to be supported on ceramic bobbins, supported on SS-310 grade studs. Material of heating elements should be Kanthal APM wire or diameter as per requirement.	Vendor to take note and confirm.	
5.0	<u>GENERAL REQUIREMENTS:</u>		
5.1	Equipment should be safe electrically or otherwise and must have visible and audible warning as applicable on occurrence of any fault and/or approaching threshold limit of critical parameters	Vendor to take note and confirm	
5.2	The equipment should work with sound level below 80 decibel	Vendor to take note and confirm	
5.3	On placement of order and before start of manufacturing, Vendor to submit detailed drawing showing dimensions & Material of Construction etc. Vendor to get approval from CFFP/BHEL for drawings and materials to be used before manufacturing of equipment.	Vendor to take note and confirm	
5.4	Vendor shall carry out the erection and commissioning of the equipment at CFFP. Service requirement like power, air, water shall be provided by BHEL.		
5.5	Vendor should demonstrate all features of the equipment and its control systems to BHEL personnel during commissioning.		

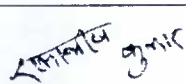
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5.6	For commissioning, in presence of vendor, a melt of 150-300 kg shall be kept in the furnace and held and desired temperature before pouring. The furnace shall be run continuously for 3 hours. If any breakdown occurs during this test, the test will be repeated for further 3 hours. The equipment shall be considered as commissioned after 3 such successful tests.		
5.7	Vendor must provide guarantee of 18 months from date of commissioning for troublefree service of the equipment. Any breakdown during the period must be attended by the vendor within 3 days of placement of call.		
6.0	<u>PACKING</u>		
6.1	The equipment should be supplied in suitable packing to avoid any damage during handling, transit and storage.	Vendor to take note and confirm	
7.0	<u>DETAILS TO BE SUBMITTED ALONG WITH OFFER :</u> Following details to be submitted along with offer.		
7.1	GA drawing showing overall dimension, material and layout of equipment.	Vendor to take note and submit	
7.2	Price for one additional set of heating element and crucible is to be quoted separately	Vendor to take note and submit.	
7.3	List of spares apart from those mentioned in 7.2, if any, required for trouble-free operations for 2 years to be submitted alongwith their price.	Vendor to take note and submit	

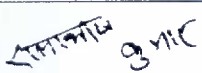
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
7.4	Power requirement to be specified	Vendor to submit	
7.5	Civil work, if any, required to be done by BHEL is to be clearly specified by vendor alongwith their offer	Vendor to take note and submit	
8.0	<u>DOCUMENTS TO BE SUPPLIED ALONGWITH EQUIPMENT :</u> Five sets of following documents shall be supplied alongwith equipment:		
8.1	Operation and maintenance manual.	Vendor to take note and confirm	
8.2	Assembly drawings	Vendor to take note and confirm	
8.3	Details of all bought out items with their specification, addresses of Vendors.	Vendor to take note and confirm	
8.4	Test certificate and guarantee certificate for the equipment as a whole and test certificate of individual bought out components.	Vendor to take note and confirm	
9.0	<u>INSPECTION</u>		
9.1	BHEL reserves the right to inspect equipment at site before dispatch. The supplier shall be given prior intimation in such case. 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 equipment is being furnished in accordance with this specification.	Vendor to take note and confirm	
9.2	The equipment shall be tested at CFFP, BHEL and will be binding on	Vendor to take	

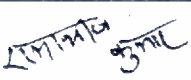
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Sl. No.	Details	Requirement from Vendor	Vendor's Response Yes (OK) /No
	supplier. If the equipment received at CFFP is not found in accordance with the requirements, it shall be rejected.	note and confirm	

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