



TECHNICAL SPECIFICATION  
NATURAL DRAFT COOLING TOWER  
2 X 660 MW CSPGCL HTPS KORBA WEST TPP

PE-TS-530-165-W001

Rev. No. 01

Date : 01.10.2025

## **PRE QUALIFICATION REQUIREMENT (TECHNICAL)**

	<b>PRE-QUALIFYING REQUIREMENTS (TECHNICAL)</b> <b>NATURAL DRAFT COOLING TOWER (NDCT)</b>	DOC NO: PE-TS-530-165-W001 REV NO: 00 DATE: 15.05.2025 SHEET: 1 of 1		
	ENQUIRY NO.:			
PROJECT: 2 X 660 MW CSPGCL KORBA WEST TPP				
<u>1.0 to 4.2 BLANK</u>				
<p><b>4.3 Natural Draught Cooling Tower</b></p> <p><b>4.3.1</b> Bidder should have designed, constructed and commissioned of at least one (1) number Natural Draught Cooling Tower in RCC Construction of capacity not less than 30,000 m3/hr which has been in successful operation for at least one (1) year as on 03.04.2025.</p> <p>In case the reference cooling tower has been designed by a party other than the Bidder, the Bidder shall employ a Design Agency, who has independently designed a Natural Draught Cooling Tower of capacity not less than 30,000 Cu.M/Hr in RCC construction and which has been in successful operation for at least one (1) year as on 03.04.2025. In such a case, Bidder shall be required to furnish a letter of support from the Design Agency for successful performance of Natural Draught Cooling Tower as per the format enclosed in the bidding document.</p> <p><b>OR</b></p> <p><b>4.3.2</b> Bidder who does not meet the requirements under clause 4.3.1, can also participate in collaboration/association with a firm who fully meets the requirements at clause 4.3.1, provided the Bidder has executed projects involving RCC works of tall structures of minimum height of 100m using slip/jump form shuttering as on 03.04.2025.</p> <p>In such a case, the Bidder shall be required to furnish a Deed of Joint Undertaking executed by the Bidder and its Collaborator/Associate for the successful performance of Cooling Tower, as per the format enclosed with the bidding documents. The Deed of Joint Undertaking (DJU) shall be submitted along with the bid/offer. In case of award, Bidder and Collaborator/Associate shall each be required to furnish an on-demand bank guarantee for INR 65 million (Sixty Five Million only) in addition to the contract performance security to be furnished by the bidder.</p> <p>General notes of the PQR are as under:</p> <ol style="list-style-type: none"> <li>1. Bidder to submit supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.</li> <li>2. Notwithstanding anything stated above, BHEL/Customer reserves the right to assess the capabilities and capacity of the bidder to perform the contract, should the circumstances warrant such assessment in overall interest of BHEL/Customer.</li> <li>3. Consideration of offer shall be subject to customer's approval of bidder.</li> <li>4. After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.</li> </ol>				

<b>PREPARED BY:</b>  <b>NAME:</b> <b>DESIGNATION / DEPT.:</b>	<b>REVIEWED BY:</b>  <b>NAME:</b> <b>DESIGNATION / DEPT.:</b>	<b>APPROVED BY:</b>  <b>NAME:</b> <b>DESIGNATION / DEPT.:</b>
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FORM OF DEED OF JOINT UNDERTAKING  
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE  
COLLABORATOR / ASSOCIATE ALONG WITH THE CONTRACTOR FOR  
NATURAL DRAUGHT COOLING TOWER FOR FORM OF JOINT DEED OF UNDERTAKING

(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE  
ASSOCIATE/COLLABORATOR ALONG WITH THE BIDDER AND SUBVENDOR  
FOR PERFORMANCE OF NATURAL DRAUGHT COOLING TOWER OF EPC PACKAGE FOR SUPER  
CRITICAL THERMAL POWER PROJECT,  
HTPS, KORBA WEST STPP STAGE-IV (2X660 MW)  
(AS PER CLAUSE 4.3 OF BDS)

This DEED of UNDERTAKING executed this..... day of .....Two thousand ..... by M/s .....a Company incorporated under ..... having its Registered Office at ..... (hereinafter called the "Collaborator"/"Associate", which expression shall include its successors, administrators, executors and permitted assigns) and M/s..... a company registered under the ..... having its registered office at ..... (hereinafter called the Bidder's Subvendor, which expression shall include its successors, administrators, executors and permitted assigns) and M/s..... a company registered under the ..... having its registered office at ..... (hereinafter called the Bidder, which expression shall include its successors, administrators, executors and permitted assigns)

in favour of ....., having its Registered Office at NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110003 INDIA ("Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the EPC Package for **SUPER CRITICAL THERMAL POWER PROJECT, HTPS, KORBA WEST STPP STAGE-IV (2x660MW)** (hereinafter referred to as "Plant") vide its Bidding Document No. : **CS-03-05 / 2x660 MW / T-13 / 2023**

And whereas WHEREAS M/s ..... (Bidder) is submitting its proposal in response to the aforesaid Invitation for Bid by the Employer bearing proposal No..... dated ..... for EPC Package for **SUPER CRITICAL THERMAL POWER PROJECT, HTPS, KORBA WEST STPP STAGE-IV (2x660MW)** against the Employer's Bidding Documents No. **CS-03-05 / 2x660 MW / T-13 / 2023** including design, engineering, manufacture, supply, transportation to site, installation, testing and commissioning (including trial operation and Performance & Guarantee tests) of the Natural Draught Cooling Tower.

AND WHEREAS Clause 4.3.2 of Sub-Section-IA, Part-A, Section-VI of Bidding Document stipulates that bidding is open to a Bidder/Bidder's Sub-Vendor who do not meet the requirements stipulated in Clause

Signature of authorized signatory.....

4.3.1 of Sub-Section-IA, Part-A, Section-VI and collaborates/associates with a firm who in turn fully meets the stipulated requirements as per Clause 4.3.1 provided the bidder/its sub-vendor has executed projects involving RCC works of tall structures of minimum height of 100m using slip/jump form shattering

AND WHEREAS M/s..... (Bidder/Bidder's Subvendor) himself does not meet the requirements of clause no. 4.3.1 of Sub-Section-IA, Part-A, Section-VI of Bidding Documents but has executed projects involving RCC works of tall structures of minimum height of 100m using slip/jump form shattering and hence desires to Collaborate/Associate with M/s..... (hereinafter referred to as Collaborate/Associate) who have designed, constructed and commissioned of at least one(1) number Natural Draught Cooling Tower in RCC Construction of capacity not less than 30,000 m3/hr which has been in successful operation for at least one(1) year and as a pre-condition for submitting the bid, the Bidder/Bidder's sub-vendor and the Collaborate/Associate are required to jointly execute and furnish at the time of placement of order on approved sub vendor, an irrevocable Deed of Joint Undertaking that they shall be held jointly and severally responsible and bound unto the Employer for successful performance of the relevant system (i.e. **Natural Draught Cooling Tower**) to be designed, manufactured, supplied and installed under the EPC Package for **SUPER CRITICAL THERMAL POWER PROJECT, HTPS, KORBA WEST STPP STAGE-IV (2x660MW)** fully meeting the parameters guaranteed as per the Bidding Documents, in the event the Bid is accepted by the Employer resulting in a Contract (hereinafter called the "Contract").

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**NOW THEREFORE, THIS UNDERTAKING WITNESSETH AS UNDER :**

1. That in consideration of the Award of the Contract by the Employer to the Bidder, we, the aforesaid Collaborate/Associate, Bidder and Bidder's Subvendor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the **Natural Draught Cooling Tower** and perform all the contractual obligations including the technical guarantees for the **Natural Draught Cooling Tower**.
2. In case of any breach of the Contract committed by the Bidder/Bidder's Subvendor, we, the Collaborate/Associate, do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the **Natural Draught Cooling Tower** and undertake to carry out all the obligations and responsibilities under the contract in order to discharge the Bidder's/Subvendor/s obligations and responsibilities stipulated in the Contract. Further if the Employer sustains any loss or damage on account of any breach of the Contract, we, the Collaborate/Associate and Contractor, jointly and severally undertake to promptly indemnify, and pay such losses/damages caused to the Employer on its written demand without any demur, reservation, contest or protest in any manner whatsoever.

This is without prejudice to any rights of the Employer against the Bidder under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Contractor before proceeding against the Collaborator/Associate, nor any extension of time or any relaxation given by the Employer to the Contractor would prejudice to any rights of the Employer under this Deed of Joint Undertaking to proceed against the Associate/Collaborator. The liability of the contractor, his sub-vendor and the associate/collaborator shall be limited to and amount equal to 100% of the value of the contract\*\* between the contractor and the sub supplier for the equipments/systems.

3. Without prejudice to the generality of the undertaking in paragraph 1 above, the manner of achieving the objectives set forth in paragraph 1 above shall be as follows :

Signature of authorized signatory.....

(a) The Collaborator/Associate will be fully responsible for design, manufacture, supply, erection, putting into satisfactory operation, commissioning and carrying out the guarantee tests as well as meeting all stipulated technical requirements and guaranteed parameters for **Natural Draught Cooling Tower** to the satisfaction of the Employer.

Further, the Collaborator/Associate shall depute their technical experts from time to time to the Bidder's/Subvendor's works/Employer's project site as required by Employer and agreed to by the Contractor/Associate to facilitate the successful performance of the **Natural Draught Cooling Tower** as stipulated in the aforesaid Contract.

Further the Collaborator/Associate shall ensure proper design, manufacture, supply erection, testing and successful performance of the **Natural Draught Cooling Tower** in accordance with the specifications and stipulations of the Bidding Documents and if necessary the Collaborator/Associate shall advise the Bidder/Bidder's Sub-vendor suitable modifications of design and implement necessary corrective measures to discharge the obligations under the Contract.

(b) In the event the Collaborator/Associate and Bidder/ Bidder's Subvendor fail to demonstrate successful performance of the **Natural Draught Cooling Tower** as set forth in paragraph 1 above, the Collaborator/Associate and the Contractor shall promptly carry out all the measures at their own expense and shall promptly provide corrected designs to the Employer.

(c) Implementation of the corrected designs and all other necessary repairs, replacements, rectifications or modifications to the **Natural Draught Cooling Tower** and payments of financial liabilities, penalties and fulfillment of all other obligations as provided under the Contract shall be the joint and several responsibilities of the Contractor and Collaborator/Associate.

4. We, the Bidder/ Bidder's Subvendor and Collaborator/Associate do hereby undertake and confirm that the Undertaking shall be irrevocable and shall not be revoked till the expiry of defect liability period of the Plant under the Contract and further stipulate that the Undertaking herein contained shall terminate after 90 days of satisfactory completion of such defect liability period. In case of delay in completion of defect liability period, the validity of this Deed of Joint Undertaking shall be extended by such period of delay. We further agree that this undertaking shall be without any prejudice to the various liabilities of the Bidder, including the Contract Performance Security as well as other obligations of the Bidder in terms of the Contract.

5. The Bidder/Subvendor and Collaborator/Associate will be fully responsible for the quality of all equipment/main assemblies/components manufactured at their works or at their Vendor's works or fabricated/constructed at site, and their repairs or replacement, if necessary, for incorporation in the **Natural Draught Cooling Tower** and timely delivery thereof to meet the work schedule under the Contract.

6. In case of Award, in addition to the Contract Performance Security furnished by the Bidder, the Bidder's Sub-vendor and Collaborator/Associate shall each furnish "as Security" an on demand Performance Bank Guarantee in favour of the Employer in a form acceptable to Employer as per provisions of the Bidding Documents. The value of such Bank Guarantee shall be equal to INR 65 million (Rupees Sixty million only) and it shall be guarantee towards the faithful performance/compliance of this Deed of Joint Undertaking in accordance with the terms and conditions specified herein. The Bank Guarantee shall be unconditional, irrevocable and valid for entire period of Contract, i.e. till ninety (90) days beyond the end of the Defect Liability period of

Signature of authorized signatory.....

the EPC Package Contract. In case of delay in completion of the defect liability period, the validity of this Bank Guarantee shall be extended by the period of such delay. The Bank Guarantee amount shall be promptly paid to the Employer on demand without any demur, reservation, protest or contest.

7. Any dispute that may arise in connection with this Deed of Joint Undertaking shall be settled as per arbitration procedure/rules mentioned in the Contract Document. This Deed of Undertaking shall be construed and interpreted in accordance with the Laws of India and the Courts of Delhi shall have exclusive jurisdiction.
8. We, the Collaborator/Associate, Bidder and Bidder's Subvendor agree that this Undertaking shall be irrevocable and shall form an integral part of the Contracts. We further agree that this Undertaking shall continue to be enforceable till the successful completion of Contract and till the Employer discharge it.
9. That this Deed shall be operative from the effective date of the Contract.

IN WITNESS WHEREOF, the Collaborator/Associate, Bidder and Bidder's Subvendor, through their authorised representatives, have executed these present and affixed common seals of their respective companies on the Day, Month and Year first mentioned above.

**FOR M/S .....**

**(COLLABORATOR/ASSOCIATE)**

**WITNESS :**

1. ....

(SIGNATURES)

(SIGNATURE OF THE AUTHORISED

REPRESENTATIVE)

.....

NAME : .....

(NAME & OFFICIAL ADDRESS)

DESIGNATION : .....

**COMMON SEAL OF THE COMPANY**

.....

**FOR M/S.....**

**(SUBVENDOR)**

**WITNESS :**

1. ....

Signature of authorized signatory.....

(SIGNATURES)

(SIGNATURE OF THE AUTHORISED

REPRESENTATIVE)

..... NAME : .....

(NAME & OFFICIAL ADDRESS)

DESIGNATION :.....

COMMON SEAL OF THE COMPANY

FOR M/S.....

(BIDDER)

1. ....

(SIGNATURES)

(SIGNATURE OF THE AUTHORISED

REPRESENTATIVE)

..... NAME : .....

(NAME & OFFICIAL ADDRESS)

DESIGNATION :.....

COMMON SEAL OF THE COMPANY

Note : \* Bidder/Bidder's Subvendor and his Collaborator/Associate to strike out whichever is not applicable.

\*\* Copy of priced purchase order for the equipment shall be furnished by Bidder.

**Signature of authorized signatory.....**

**PROVENNESS OF NATURAL DRAFT COOLING TOWER**

**I. (D) Details of RCC Natural draught Cooling Towers (as per clause 4.3 of Sub-Section-IA, Part-A, Section-VI of Bidding Documents**

In support of Sub-Qualifying Requirements of Clause 4.3 of Sub-Section-IA, Part-A, Section-VI of Bidding Document, we confirm that We/our Sub-vendor have designed, constructed and commissioned at least one(1) number Natural draught cooling tower in RCC Construction of capacity not less than 30,000 m<sup>3</sup>/hr which has been in successful operation for at least one(1) year..

**We/our Sub-vendor furnish a letter of technical support from the Design Agency for successful performance of natural draft Cooling Tower.The details of the reference cooling tower is furnished below:**

Sl.	Description/Details	Plant
No.		
1.	Description of Work and Name of Client	.....
2.	Location/Address of the Plant/works	.....
3.	Address of the Client (including Contact Person Name, TelephoneNo, e-mail etc.)	.....
4.	No. of Cooling Towers/Chimney	.....
5.	Capacity of each Cooling Tower (Cu.M/hr.)/ height of chimney	.....
6.	Type of Fill (splash/modular/trickle type)	.....
7.	Type of Construction	.....
8.	Whether scope of works included (a) Construction of Cooling Towers/chimney By Bidder/its Sub-vendor	YES*/NO*
	Name of the construction agency	.....
	(b) Construction of cooling towers/ Chimney by Bidder/its Sub-vendor	YES*/NO*
	(c) Commissioning of cooling towers/ chimney	YES*/NO*
9.	Date of Commissioning of the Cooling tower/Chimney	
10.	Certificate from client to	

Signature of authorized signatory.....

**ATTACHMENT - 3K  
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YES\*/NO

\*substantiate Bidder's QR data is  
enclosed at Annexure .....  
to this Attachment-3K

11. Whether the reference cooling tower/Chimney

YES\*/NO

\*at sl. No. 1 is constructed by the bidder/ sub vendor

12. Whether the reference cooling tower/Chimney

YES\*/NO

\*at sl. No. 1 is constructed by  
Sub-vendor's own engineers

13. Whether Documentary evidence/

Yes\* /

No\*certificate(s) from client enclosed  
for the above data

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● \* Strike off whichever is not applicable.

Date : (Signature).....

Place : (Printed Name).....

(Designation).....

(Common Seal).....

(Designation).....

(Common Seal).....

(Bidder / Sub vendor / Designer / Construction Agency )

**Signature of authorized signatory.....**

**Sub :Provenness Criteria for Civil Works**

**FORMAT FOR FILLING THE DETAILS OF PROVENNESS  
LETTER OF SUPPORT FOR SATISFACTORY PERFORMANCE OF  
(EQUIPMENT/SYSTEM NAME) FOR  
SUPER CRITICAL THERMAL POWER PROJECT  
HTPS, KORBA WEST (2X660 MW) , EPC PACKAGE**

TO

[EMPLOYER'S NAME & ADDRESS]

**Sub:** Letter of Technical Support submitted From ..... (name of the Design Agency\*/Associate\*/Collaborator\*/ Technology provider\* / Licensor\* / Holding Company\*) undertaking the responsibility for satisfactory performance of .....(Name of the equipment/system\*).

Dear Sirs,

1. In accordance with the Award of the Contract by ..... (Name of the Contractor) to M/s. ..... (Name of the sub-vendor), we, the aforesaid Design Agency\*/Associate\*/Collaborator\*/Technology provider\*/Licensor\*/Holding Company, (M/s ..... ) shall be fully responsible for the satisfactory performance of the .....( Name of the equipment/system\*).
2. Further, the manner of achieving the objective set forth in point 1 above shall be as follows  
For ..... (Name of the equipment/system\*):
  - (a) We shall be fully responsible for design, engineering & commissioning and extending all necessary support for putting in to satisfactory operation and carrying out the Guarantee Tests for .....( Name of the equipment/system\*) to the satisfaction of the Employer.
  - (b) We shall depute technical experts to Bidder's/sub-vendor's works for supervision during manufacturing, assembly, inspection, as and when required by Employer. We shall participate in site erection, commissioning and final testing (as and when necessary) of the.....( Name of the equipment/system\*).
  - (c) We shall participate in Technical Co-ordination meetings (TCMs) from time to time, as and when required by Employer.
  - (d) We shall promptly carry out all the corrective measures and shall promptly provide corrected design and shall undertake replacements, rectifications or modifications to the equipment/system\* as and when required by Employer in case the equipment/system\* fails to demonstrate successful performance as per contract at site.
3. We, the Design Agency\*/Associate\*/Collaborator\*/Technology provider\*/Licensor\*/Holding company\* do hereby undertake and confirm that this Letter of Technical Support shall be valid for a

**Signature of authorized signatory.....**

**ATTACHMENT - 3K  
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period of seven (7) years or up to the end of defect liability period of the contract, whichever is later.

Signature of the Authorised Representative:.....

For M/s .....

(Design Agency\*/Associate\*/Collaborator\*/Technology provider\*/Licensor\*/Holding company)

Name .....

Designation .....

Date:.....

Common Seal of the Company

**\*: Strike off whichever is not applicable.**

**Signature of authorized signatory.....**



**CORPORATE QUALITY ASSURANCE**  
**SUB-VENDOR QUESTIONNAIRE**

<b>i.</b>	<i>Item/Scope of Sub-contracting</i>			
<b>ii.</b>	<i>Address of the registered office</i>		<i>Details of Contact Person (Name, Designation, Mobile, Email)</i>	
<b>iii.</b>	<i>Name and Address of the proposed Sub-vendor's works where item is being manufactured</i>		<i>Details of Contact Person: (Name, Designation, Mobile, Email)</i>	
<b>iv.</b>	<i>Annual Production Capacity for proposed item/scope of sub-contracting</i>			
<b>v.</b>	<i>Annual production for last 3 years for proposed item/scope of sub-contracting</i>			
<b>vi.</b>	<b>Details of proposed works</b>			
1.	<i>Year of establishment of present works</i>			
2.	<i>Year of commencement of manufacturing at above works</i>			
3.	<i>Details of change in Works address in past (if any)</i>			
4.	<i>Total Area</i>			
	<i>Covered Area</i>			
5.	<i>Factory Registration Certificate</i>		<i>Details attached at Annexure – F2.1</i>	
6.	<i>Design/ Research &amp; development set-up (No. of manpower, their qualification, machines &amp; tools employed etc.)</i>		<i>Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design) Details attached at Annexure – F2.2 (if applicable)</i>	
7.	<i>Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc)</i>		<i>Details attached at Annexure – F2.3</i>	
8.	<i>After sales service set up in India, in case of foreign sub- vendor (Location, Contact Person, Contact details etc.)</i>		<i>Applicable / Not applicable Details attached at Annexure – F2.4</i>	
9.	<i>Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any</i>		<i>Details attached at Annexure – F2.5</i>	
10.	<i>Sources of Raw Material/Major Bought Out Item</i>		<i>Details attached at Annexure – F2.6</i>	
11.	<i>Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing</i>		<i>Details attached at Annexure – F2.7</i>	



**CORPORATE QUALITY ASSURANCE**  
**SUB-VENDOR QUESTIONNAIRE**

12.	<b>Manufacturing facilities</b> (List of machines, special process facilities, material handling etc.)			<i>Details attached at Annexure – F2.8</i>		
13.	<b>Testing facilities</b> (List of testing equipment)			<i>Details attached at Annexure – F2.9</i>		
14.	<i>If manufacturing process involves fabrication then-</i>			<i>Applicable / Not applicable</i>		
	<i>List of qualified Welders</i>			<i>Details attached at Annexure – F2.10</i>		
	<i>List of qualified NDT personnel with area of specialization</i>			<i>(if applicable)</i>		
15.	<i>List of out-sourced manufacturing processes with Sub-Vendors' names &amp; addresses</i>			<i>Applicable / Not applicable</i>  <i>Details attached at Annexure. –F2.11</i> <i>(if applicable)</i>		
16.	<i>Supply reference list including recent supplies</i>			<i>Details attached at Annexure – F2.12</i> <i>(as per format given below)</i>		
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)	PO ref no/date	Supplied Quantity	Date of Supply	
17.	<i>Product satisfactory performance feedback letter/certificates/End User Feedback</i>			<i>Attached at annexure - F2.13</i>		
18.	<i>Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating)</i> <i>Note:- Reports need not to be submitted</i>			<i>Applicable / Not applicable</i>  <i>Details attached at Annexure – F2.14</i> <i>(if applicable)</i>		
19.	<i>Statutory / mandatory certification for the proposed product</i>			<i>Applicable / Not applicable</i>  <i>Details attached at Annexure – F2.15</i> <i>(if applicable)</i>		
20.	<i>Copy of ISO 9001 certificate (if available)</i>			<i>Attached at Annexure – F2.16</i>		
21.	<i>Product technical catalogues for proposed item (if available)</i>			<i>Details attached at Annexure – F2.17</i>		
<hr/>						
<i>Name:</i>		<i>Desig:</i>	<i>Sign:</i>	<i>Date:</i>		

*Company's Seal/Stamp:-*