

Technical Specifications of “Isothermal Calorimeter”

1.0 Bidder Eligibility Criteria:

| I | Bidder Eligibility Criteria-I (Public Procurement – Preference to Make in India) | Class I / Class II | Local Content value | Reference, Page No. |
|------------|--|------------------------------|----------------------------|----------------------------|
| I | Only 'Class-I local suppliers' and 'Class-II local suppliers', as defined under DIPP, MoCI Order No. P-45021/2/2017-PP (BE II) dated 16 th September 2020 and other subsequent orders issued therein. | | | |
| 2.0 | Bidder Eligibility Criteria-II | Complied/Not Complied | Reference Page No. | Remarks, If any |
| 1 | The supplier/vendor must be an original equipment manufacturer or an authorized agent/dealer/seller of the item. The vendor should have supplied at least 5 similar units at other IITs or NITs, or national laboratories and research centres (DRDO/CSIR/BARC/IGCAR), or R&D centres of reputed multinational companies, or globally recognized universities, in the last 5 years. PO copy, or performance certificate, along with contact details (for these organizations) needs to be submitted. | | | |

3.0 Technical Compliance:

| Sl. No | Specification | Complied/Not Complied | Ref. Page no. |
|--|---|-----------------------|---------------|
| Equipment Features: | | | |
| 1. | The calorimeter should be capable to measuring heat released during cement hydration including the effect of adding mineral and chemical admixtures. | | |
| 2. | The calorimeter should be capable of carrying out measurements in isothermal condition (constant temperature). | | |
| 3. | The temperature of the calorimeter must be computer-controlled from the software. | | |
| 4. | Operating temperature range must be 5°C to 70 °C or higher. | | |
| 5. | The calorimeter should be capable of measuring heat of cement hydration using eight sample cells. | | |
| 6. | The calorimeter should be able to measure the rate of heat evolution continuously, at least up to 7 days. | | |
| Specific Technical Requirements | | | |
| 1. | The instrument should have circulating air thermostat with a temperature stability of $\pm 0.02^{\circ}\text{C}$ or better. | | |
| 2. | The baseline drift over 72 hours must be less than $0.1 \mu\text{W/g/h}$ and the baseline deviation over 72 hours must be less than $2 \mu\text{W/g}$. | | |
| 3. | Each channel in calorimeter should be able to accommodate sample sizes of up to 125 ml. | | |
| 4. | The instrument should be compact, weighing less than 60 kg. | | |

| Data Analysis Requirements | | | |
|-----------------------------------|---|--|--|
| 5. | Software should have following capabilities: | | |
| 6. | Multiple data plotting routines | | |
| 7. | Rate of heat evolution plot | | |
| 8. | Total heat release plot | | |
| 9. | Warranty: 3 years | | |
| 10. | Optional Quote-1: Additional 2 years warranty may be quoted separately. | | |
| 11. | Optional Quote-2: AMC beyond 3 Years Warranty period | | |

| Other Terms and Conditions | | | |
|-----------------------------------|---|--|--|
| 1. | The system should be delivered within 14-16 weeks from the opening of the letter of credit or issue of the purchase order, whichever is later. | | |
| 2. | Costs and related information should be given only in the financial bid. | | |
| 3. | The cost should include all delivery costs up to IIT Madras. | | |
| 4. | The warranty shall commence only from the date of equipment installation at IITM. | | |
| 5. | IIT Madras reserves the right to exclude some items from the purchase. | | |
| 6. | As part of tender technical evaluation, IIT Madras will approach the past end users for feedback and in case of any adverse feedback the bidder will be technically disqualified. | | |
| 7. | The system should be installed and commissioned with no additional cost. | | |
| 8. | Training at IIT Madras should be provided with no additional cost. | | |
| 9. | System manual should be provided in CD or pen drive form. | | |
| 10. | Services and spares should be necessarily available within India. | | |

| S.No | Technical Bid should comprise of the following | | |
|-------------|---|--|--|
| 1. | Detailed Technical brochure. | | |
| 2. | Detailed technical write up explaining how each of the Technical Specifications are complied with, indicating the location in the brochure. | | |
| 3. | The vendor should guarantee round the clock technical support not only during the warranty period but even beyond through an annual maintenance contract. Demonstration of having provided such satisfactory technical support to customers shall be enclosed with the technical bid. | | |
| 4. | The manufacturer must have a well-qualified technical support team. | | |

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)