TENDER DOCUMENT FOR HIRING SERVICES OF IIT HYDERABAD FOR STRUCTURAL AUDIT OF SAIFABAD MINT

Unit: India Government Mint, Hyderabad of Security Printing and Minting Corporation of India Limited

Firm's Reference	E-mail dated 29.04.2022 & 05.09.2022	**Date**	13.10.2022
Email	igm.hyderabad@spmcil.com	***NOMINATION***	Address: P.B. NO. 10, H.C.L. POST, I.D.A. PHASE II, CHERLAPALLY, HYDERABAD – 500 051. (TELANGANA)
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Indian Institute of Technology, Hyderabad (IITH)		**Enquiry No and Date**	6000017686 dated 13.10.2022
		Date of Tender Opening	04th November, 2022 at 03:00 p. m.
		The Tender would be opened at ***India Government Mint, Hyderabad***	

Please submit your quotation by post/hand before 2:45 pm on date of tender opening at India Government Mint, Hyderabad. You must submit your bid along with the necessary documents in a Sealed Cover dropped in the tender box located at India Government Mint, Hyderabad.

Yours Sincerely

13/10

Purchase Officer

Tender Schedule

Sr No:	Description and Specification of Material	Quantity	Unit	Delivery Required	In figure and in words Rs.		Taxes & Duties
					Rate per unit	Value	
1.	Structural Audit of Saifabad Mint	1	AU	3 months			

Enclosed Specifications/ Drawings/ Special Conditions of Contract:

Scope of work

DETAILED ASSESSMENT: The detailed assessment should be done by employing non-destructive tests and semi-destructive test methods as per the site requirement. The following are the test methods to be conducted.

METHOD OF TEST OF SUPERSTRUCTURE OF BUILDING:

1. **Rebound Hammer Test:** The Schmidt rebound hammer test is a rapid method for determining the homogeneity of concrete based on the rebound number's surface hardness. The in-situ compressive strength of concrete is connected with the measured surface hardness in terms of Rebound number. The rebound hammer test could be used to establish.

- Using appropriate co-relations between rebound index and compressive strength, determining the anticipated compressive strength of concrete.
- Checking the consistency of concrete.
- Assessing the concrete's quality in reference to industry standards.
- Evaluating the quality of one concrete element in comparison to another

2. Ultrasonic Pulse Velocity Test

Ultrasonic pulse velocity (UPV) testing is the most extensively used method for determining concrete homogeneity. By studying pulse activity in the transit, any cracks, cavities, or other faults in the concrete can be found. It basically aids in determining the concrete's soundness. The ultrasonic pulse velocity method could be used to determine the concrete's homogeneity.

- The presence of flaws such as cracks, voids, and other flaws.
- Changes in the concrete's structure may develop over time.
- The concrete's quality in comparison to the required norm.
- The value of the concrete's dynamic elastic modulus and the quality of one concrete constituent in relation to another.

3. Half Cell Potential Test

These tests are used to determine the prevalence of reinforcement corrosion. It is required to first reach the reinforcement, by locating the test spot and drilling a hole in the concrete. Contact the reinforcement with an electric current. Place the half cell at various points on the concrete surface and use the voltmeter to measure the voltage. Correlate the voltages acquired to the likelihood of corrosion using the ASTM standard.

The purpose of this test method is to estimate the electrical corrosion potential of uncoated reinforcing steel in field and laboratory concrete in order to assess the reinforcing steel's corrosion activity.

4. Carbonation Test

When the concrete is older than six months, the carbonation depth is tested, and the results are documented in the test report. To get to the reinforcement, drill a hole in the concrete. Inject the chemical and then insert the steel rod. The colour change indicates how deep carbonation has progressed. Concrete carbonation is one of the most common causes of reinforcement corrosion. CO_2 is converted to dilute carbonic acid in the presence of moisture, which destroys the reinforcement and lowers the alkalinity of concrete. As a result,

- To identify reduced alkalinity in concrete, it is important to measure the depth of carbonation.
- To monitor influence on the rebound number

5. Impact Echo Test

Impact-echo testing of concrete and masonry structures is based on the use of impact-generated stress (sound) waves that propagate through concrete and masonry and are reflected by internal flaws and external surfaces. Impact-echo can be used to determine the location and extent of flaws such as cracks, delaminations, voids, honeycombing, and debonding in plain concrete, reinforced concrete, and masonry structures.

This method can be used to determine thickness or to locate cracks, voids, and other defects in masonry structures where the brick or block units are bonded together with mortar.

6. Prisms Testing of Brick Masonry

The prisms test can be used to figure out how strong existing brick masonry is. The core-drilling of existing brick and lime mortar masonry walls can be done by dry (no water) procedure. Using a rotary cutting tool, prisms are frequently removed from existing brick masonry walls.

The purpose of this test is to:

➢ The goal is to look for internal cracking, porosity, Brick and mortar bonding, and Mortar quality among other things.

➢ To evaluate compressive strength and elastic parameters of existing masonry by testing the same in a UTM

7. Core Testing of Concrete

The Core Test can be used to determine the compressive strength of in-situ concrete. Cores are often removed from concrete using a rotary cutting tool with diamond bits in this test.

The purpose of this test is to:

Ø The goal is to look for internal cracking, porosity, pore distribution, compaction, aggregate dispersion, and the presence of steel reinforcement, among other things.

Ø To check the compressive strength of the concrete by testing the same in a UTM

8. CAPO Test

The CAPO-Test allows pull-out tests to be performed on an existing structural element without the need for pre-installed inserts. CAPO-Test uses a pullout mechanism similar to the LOK-TEST technology to offer reliable compressive strength estimates on-site.

The purpose of this test is to:

- Determine the residual strength of concrete in existing constructions.
- To determine the structural integrity
- Determine the concrete's compressive strength

9. Rebar Mapping / Scanning

When designs are absent or reinforcing data needs to be confirmed, rebar mapping is a method of obtaining information about reinforcement in existing concrete structures.

The purpose of this test is

- To determine the size and number of reinforcing bars in concrete members.
- Determine the concrete cover that will be used to protect the reinforcement.
- Prepare structural drawings for RCC structures in the absence of original designs.

10. Chemical Testing

Chemicals such as chlorides, sulphates, and ammonia, among others, play an important part in the corrosion of reinforcement bars. The presence of these compounds in the structure can reveal important details about the level of corrosion and the member's structural life.

The goal is to determine how corrosion affects the reinforcing bar in the presence of these substances.

METHODS OF TESTING OF SUBSTRUCTURE OF THE BUILDING:

1. Standard penetration test:

The standard penetration test (SPT) is extensively used to determine a soil's carrying capability at a specific depth.

The goal of standard penetration is to assess the bearing capacity of soil at a specific depth by recording the n value (measured blows per unit penetration).

Note: After the assessment, IITH should submit its detailed assessment report by stating all recommendations for all required repairs/restorations/demolitions/alterations if any required for the structures.

Item/ Tender Specific Conditions of this tender:

1.
2.

I/ We engage to supply the material(s) to your office and comply the following:

1. Tender Schedule and Technical Specification indicated
2. Item/ Tender specific conditions for this tender.
3. Terms and Conditions printed overleaf
4. General conditions of Contract signed by me at the time of Vendor Registration (for registered vendors)
5. I/ we confirm that set off for the GST etc. paid on the inputs have been taken into consideration in the above quoted Price and further agree to pass on such additional duties as sets offs as may become available in future under GST etc.
6. This offer is valid for 90 days from the date of opening of tender.

Signature & seal Place & Date:		Name of Authorized Signatory:	
Address:		Tel. No/ Fax. No / Mobile No Email ID:	

TERMS AND CONDITIONS FOR NOMINATION BASIS TENDER

1. The quotation must be in the form furnished by procuring entity and should be in ink free from corrections / erasures. In case there is any unavoidable correction it should be properly attested, otherwise the quotation will not be considered.
2. Tenderer may also download the tender documents from the web site http://igmhyderabad.spmcil.com the bidder must not make any changes to the contents of the documents.
3. Tenderers shall ensure that their tenders, duly sealed and signed, complete in all respects as per instructions contained in the Tender Documents, are dropped in the tender box located at the address given below on or before the closing date and time indicated in the Para 1 above, failing which the tenders will be treated as late and rejected.
4. The Purchaser reserves the right to accept the offer by individual items and reject any or all tenders without assigning any reason thereof and does not bind itself to accept lowest quotations.
5. In the event of any of the above-mentioned dates being declared as a holiday/ closed day for the purchase organization, the tenders will be sold/ received/ opened on the next working day at the appointed time.
6. Participation in this tender is by invitation only. Unsolicited offers are liable to be ignored. However, vendors who desire to participate in such tenders in future may bring it to the notice of Procuring Entity and apply for registration as per procedure. Note: To get registered as approved supplier with procuring entity, please download supplier approval form from SPMCIL website and submit.
7. The Purchaser reserves the right to modify the quantity specified in this enquiry.
8. The prices quoted should be firm till the completion of services. Please quote the rates in words and figures. Rates quoted should be free delivery at destination including all charges otherwise the quotation is likely to be rejected. Price quoted for free delivery at destination will be given preference. If there is no indication regarding the FOR, in the quotation, then it will be considered as F.O.R. Destinations. Price quoted should be net and valid for a minimum period of three months from the date of opening of the quotation.
9. Payment of GST is primarily the responsibility of the seller and will not be paid unless the percentage value is clearly mentioned in the quotations. If no indication regarding GST is recorded in the quotation, the GST will be considered as included.
10. Delivery Period required for supplying the material should be invariably specified in the quotation.
11. Required Terms of Delivery: F.O.R India Government Mint, Hyderabad. (F.O.R: Free on Road).
12. In case your quotation is accepted, and order is placed on you, the supply/services against the order should be made within the period stipulated in the order. Purchaser reserves the right to recover any Loss sustained due to delayed delivery by way of penalty. Failure to supply the material within the stipulated period shall entitle the Purchaser for imposition of Penalty without assigning any reasons @ 1/ 2% of the total value of the item covered in order as Penalty per day subject to a maximum of 5% unless extension is obtained in writing from the office on valid ground before expiry of delivery period.
13. If the deliveries are not maintained and due to that account the Purchaser is forced to buy the material/services at your Risk and Cost from elsewhere, the loss or damage that may be sustained there by will be recovered from the defaulting supplier.
14. Dispute Clause: Any dispute relating to the enquiry shall be subject to the jurisdiction of the court at Hyderabad only.
15. Payment Terms: 60 % advance payment shall be paid to IIT, Hyderabad and rest 40% of the payment shall be made within 30 days after successful completion of services and acceptance by Mint authorities.