Tender document for

**Specimen preparation and testing for IIT Madras related to the Chennai Metro civil works**

Scope of work: Preparation of concrete specimens at the CMRL construction sites, testing of (coarse and fine) aggregates, chemical testing of cement and steel, and physical testing of cement and concrete.

Duration of work: 12 (twelve) months

Details: It is proposed to have laboratories prepare concrete specimens at CMRL sites in and around Chennai, and to perform compression tests on concrete cubes, tests on (coarse and fine) aggregates, and physical tests of cement. Suitable laboratories will be qualified based on the technical details submitted in Cover 1 according to Schedule A. The laboratories may be inspected by a committee of experts to check the details provided by them. The financial bids, as per Schedule B, contained in the Covers 2 of the qualified bidders will be opened and a ceiling rate will be fixed for each item based on the lowest quoted rate. Work will be distributed among the approved laboratories that accept the ceiling rate, as per the resources available and response. The total value of work will be less than Rs. 25 lakhs.

Documents to be submitted:

Cover 1: Details of the laboratory as per Schedule A, address, and details of facilities available in Chennai, qualified personnel available in Chennai, previous experience over the past two years on testing of concrete and related materials, copies of calibration certificates that are relevant, contact details for possible inspection, if needed.

Cover 2: Rates for the items specified in Schedule B should be filled in rupees (including all taxes) in the form given in Annex 1.

Both covers should be sealed and placed in another cover which should also be sealed. The sealed bid should be delivered to Prof. Ravindra Gettu, Dept. of Civil Engineering, BSB 217, IIT Madras, Chennai 600036, on or before 3 pm on 27th August 2012

For clarifications, please contact Prof. Ravindra Gettu, e-mail: gettu@iitm.ac.in, Mobile: +919840600871.

**Schedule A. Technical details of the laboratory**

Name of Laboratory:

Laboratory Address:

Phone number(s):

FAX number:

E-mail:

Contact person(s):

Facilities available in Chennai:

Qualified personnel available in Chennai:

Previous experience over the past two years on testing of concrete and related materials:

Certifications/Accreditations obtained by the laboratory:

Attach copies of calibration certificates that are relevant, and any other pertinent information. Additional sheets can be used if needed.

Schedule B. Rates for specimen preparation and testing for IIT Madras related to Chennai Metro civil works for the period of one year from the acceptance of the ceiling rates

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| --- | --- | --- | --- |
| No. | Item specification | Unit | Unit rate in Rs. |
| 1 | Casting of 30 concrete cubes and 15 prisms for standard testing, by one qualified technician and helper during a shift of 8 hours at the CMRL site. Transportation, moulds and all accessories needed should be provided. Demoulding and collection of specimens on the next day and delivery to IIT Madras included. | 1 shift of 8 hours |  |
| 2 | Testing of one (1) set of 3 concrete cubes for compressive strength and reporting of result | 1 set of 3 cubes |  |
| 3 | Testing of one (1) set of 3 concrete prisms for flexural strength and reporting of results | 1 set of 3 prisms |  |
| 4 | Coarse aggregate testing of one sample as per IS 2386, including tests for Gradation (Sieve analysis; Flakiness index; Elongation index; Clay lumps; Clay, Fine silt and Fine dust; Soft particles); Specific gravity & Water absorption; Bulk density and voids; and Physical properties (Aggregate crushing value, Aggregate impact value, Aggregate abrasion value, Crushing strength) | 1 sample |  |
| 5 | Fine aggregate testing of one sample as per IS 2386, including tests for Gradation (Sieve analysis; material finer than 75 microns; Clay lumps; Clay, Fine silt and Fine dust; Soft particles); Specific gravity & Water absorption; Bulk density and voids | 1 sample |  |
| 6  | Chemical testing of cement as per IS 4032 | 1 sample |  |
| 7 | Physical testing of cement for fineness, soundness, setting time and strength as per IS 4031 | 1 sample |  |
| 8 | Chemical testing of steel as per IS 228 for carbon, sulphur, manganese and silicon content | 1 sample |  |

Notes: (a) If not interested in carrying out or unable to carry out the work in a particular item, indicate N.I. for "not interested".

 (b) The laboratories should allow IIT Madras to witness all the tests.

 (c) Calibration certificates of all equipment used, as relevant, should be provided