INDIAN INSTITUTE OF TECHNOLOGY MADRAS
ENGINEERING UNIT
CHENNAI – 600 036

1. Notice Inviting Tenders

Tender No: 53/ 2013 – 14 / Civil

EXECUTIVE ENGINEER(CIVIL), Indian Institute of Technology Madras, Chennai - 600 036 invites sealed item rate tenders from the registered contractors of IITM Civil -(Class II III&IV) upto 3.00PM on 08 /04/2014.

1. **PARTICULARS OF WORK**

1.1 Name of Work: Construction of Students Facility Centre in front of Sharavathi hostel by dismantling old unused cycle shed

1.2. Estimated Cost (For reference only) : Rs 24.18 Lakhs

1.3. Earnest Money Deposit (EMD) : Rs 49,000/-

1.4. Cost of Tender Document :Rs 525/- including VAT(Nonrefundable)

1.5. Time Period for Completion : 5 months

1.6. Validity of the Tender : 90 days from the date of opening of the tender

1.7. Date of Pre-bid Meeting : No Prebid Meeting

1.8. Last Date and Time for submission of the Tender : 08 - 04 -2014 – 3.00pm

1.9. Date of Opening of the Financial bid : 08 - 04-2014 – 3.10pm

1.10. Place of submission of tenders: : Office of the Executive Engineer(Civil), Engineering unit, Administrative Building 3rd Floor IIT Madras, Chennai – 600 036.

Executive Engineer(Civil)

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1.11. Deadline for submission of tender

Tenders must be received by the Employer at the following address not later than 3.00 PM on the date of opening mentioned. In the event of the specified date for the submission of the Tender being declared a holiday by the Employer, the Tenders will be received up to the appointed time on the next working day

1.12. Address for Submission of Tender

The Executive Engineer (Civil)
Engineering Unit, Administrative Building, 3rd floor,
Indian Institute of Technology Madras
Chennai – 600036.

1.13. The Employer may extend the deadline for submission of Tenders by issuing an amendment in writing in which case all rights and obligations of the Employer and the Tenderer previously subject to the original deadline will be subject to new deadline.

1.14. LATE TENDER

Tenders received late will not be accepted.

2. T E N D E R

2.1. I/We have read and examined the notice inviting tender, schedules A & B, Specifications applicable, drawings, Conditions of contract and other documents and rules referred to in the conditions of contract and all other contents in the tender documents for the work.

2.2. I/We hereby tender for the execution of the work specified for the Indian Institute of Technology Madras, within the time specified in Schedule – 'F' and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in General Rules and Directions and in Clause 11 of Form 8 (General conditions of contract) and with such materials as are provided for, and in all respects in accordance with such conditions applicable.

2.3. I/We agree to keep the tender open for Ninety (90) days from the date of opening of tender and not to make any modifications in its terms and conditions

2.4. I/We agree that the EMD deposited by me/us be retained by IITM towards Security Deposit to ensure execution of all works referred to in the tender documents on the terms and conditions contained or referred to therein.

2.4. If I/We fail to furnish the prescribed performance guarantee as mentioned elsewhere within prescribed period, I/we agree that IITM shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely.

2.5. I/we agree that in case of forfeiture of earnest money as aforesaid, I/we shall be debarred from participating in the re-tendering process of the work.

2.6. If I/we fail to commence work as specified in clause 3A of the contract, I/we agree that IITM shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely,

2.7. I/We agree to carry out such deviations as may be ordered, up to a maximum percentage mentioned in Schedule ‘F’ and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the contract.

2.8. I/we hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as secret / confidential documents and shall not communicate the information derived therefrom to any person other than a person to whom I/we am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

2.9. I/We hereby certify that the tender document downloaded is the exact copy of the document published by the IITM and no alterations and additions have been made by me / us in the tender document.

Signature of the Contractor

Dated

Signature of the Tenderer

Postal Address

Witness

Signature

Name

Postal Address

Occupation

3. Acceptance

The above tender is accepted by me for an on behalf of the Board of Governors, IITM for a sum of Rs._____(Rupees_____
_____
_____)

The letters referred to below shall form part of this contract Agreement:

a)

b)

c)

For & on behalf of the Board of Governors, IITM.

Signature _____

Designation _____

Date_____

4. Conditions of contract

4.1. Definitions

In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:-

1. The expression 'works' or 'work' shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed, whether temporary or permanent, and whether original, altered, substituted or additional.

2. The 'Site' shall mean the land/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.

3. The 'contractor' shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.

4. The 'Engineer-in-charge' means the Engineer who shall supervise and be in-charge of the work and who shall sign the contract on behalf of IIT as mentioned in Schedule 'F' hereunder.

5. 'Accepting Authority' shall mean the authority mentioned in Schedule.

6. 'Excepted Risks' are riots (other than those on account of contractor's employees), war, acts of God such as earthquake, lightening and unprecedented floods, and other such causes over which the contractor has no control and accepted as such by the Accepting Authority.

7. 'Market Rate' shall be the rate as decided by the Engineer-in-charge on the basis of the cost of materials and labour at the site where the work is to be executed plus the percentage mentioned in Schedule 'F' to cover all overheads and profits.

8. 'Schedules(s)' referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard schedule of Rates of the CPWD mentioned in schedule 'F' hereunder, with the amendments thereto issued up to the date of receipt of the tender.

9. ‘Department’ means IITM which invites the tenders.

10. ‘District specification’ means the specifications followed by the state of Tamil Nadu in the area where the work is to be executed.

11. ‘Tendered value’ means the value of the entire work as stipulated in the letter of award.

12. ‘Employer means IITM

13. Where the context so requires, words imparting the singular also include the plural and vice versa. Any reference to masculine gender shall whenever required shall refer to feminine gender and vice versa.

14. Wherever the expression “Divisional Officer” appears in the Clauses, it should be substituted by the expression “Executive Engineer(Civil)”

15. “Engineer in Charge” means Executive Engineer(Civil), IITM, and the Engineer means the officer representing the Engineer-in-Charge of the Project.

4.2. Authority to sign the tender document

The tender must be signed by the person / persons competent to sign as indicated below. Same stipulations will also apply in the case of Receipt of payments for the work done.

1. If the Applicant is an individual, he should sign above his full typewritten name and current address.
2. If the Applicant is a proprietary firm, the Proprietor should sign above his full typewritten name and the full name of his firm with its current address.
3. If the Applicant is a firm in partnership, the Documents should be signed by all the Partners of the firm above their full typewritten names and current addresses. Alternatively the Documents should be signed by a Partner holding Power of Attorney for the firm and in this case a certified copy of the Power of Attorney should accompany the tender documents. In both cases a

certified copy of the Partnership Deed and current address of all the partners of the firms should be furnished.

4. If the Applicant is a limited Company, or a Corporation, the Documents shall be signed by a duly authorized person holding Power of Attorney for signing the Documents, accompanied by a copy of the Power of Attorney. The Applicant should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary

4.3 .**Instructions for filling the Bill of Quantities (Schedule A**)

1. Rate for each item shall be filled in words and figures and there shall be no discrepancy between the rate quoted in figures and words. However, if a discrepancy is found, the rate which corresponds with the amount worked out by the contractor shall unless otherwise proved, be taken as correct.

2. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words, then the rates quoted by the contractor in words shall be taken as correct.

3. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the rates quoted be the contractor, will, unless otherwise proved, be taken as correct and not the amount.

4. If no rate has been quoted for any item(s), leaving space both in figure(s), words(s) and amount, it will be presumed that the contractor has included the cost of this / these item(s) in other items and rate for such items(s) will be considered as zero and work will be required to be executed accordingly.

5. Amount must be quoted in full rupees only.

6. Special care should be taken to write the rates in figures as well as in words and the amount in figures in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word 'Rs' should be written before the figure of 'Rupees' and the word ' P ' after the decimal figures, eg.' Rs 2.15P' and in case of words the word, "Rupees" should precede and the work 'Paise' should be written at the end. Unless the rate is in whole rupees and followed by the word 'only', it should invariably be up to two decimal places.

While quoting each rate in schedule of tender, the word ‘only’ should be written closely following the rate and it should not be written in the next line.

7. In the case of item Rate Tenders, only rates quoted shall be considered. Any tender containing percentage below/above the rates quoted is liable to be rejected

8. Tenders containing proposal for any alteration in the work or in the time allowed for carrying out the work, or which contain any other condition including conditional rebates, will be summarily rejected.

9. The officer inviting tenders shall have the right to reject all or any of the tenders and will not be bound to accept the lowest or any other tender.

10. The tender for the work shall not be witnessed by a Contractor or Contractors who himself / themselves has/have tendered for the same work. Failure to observe this condition would render tenders of the Contractor tendering, as well as witnessing the tender, liable to summary rejection.

11. In the case of any tender where unit rate of any item/items appear unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation, such tender is liable to be rejected.

12. The tenderers shall sign a declaration under the Official Secret Act, 1923, for maintaining secrecy of the tender documents, drawings or other records connected with the work given to them.

4.4. Refund / forfeiture of EMD

1. In the event of a tender being accepted, a receipt for the Earnest Money forwarded therewith shall thereupon be given to that Contractor.
2. In the event of a tender being rejected, the Earnest Money forwarded with such unaccepted tender shall thereupon be returned to the Contractor remitting the same, without any interest.
3. Tender for the work shall remain open for acceptance for a period of 90 days from the date of opening of the Tender.
4. If any tenderer withdraws his tender before the said period or issue of acceptance, whichever is earlier or makes any modification in the terms and conditions of the tender which are not acceptable to the Institute, then IITM, shall without prejudice to any other right or remedy, be at liberty to forfeit 50 % of the said earnest money.

4.5 Documents to be submitted upon acceptance of the tender.

1. On acceptance of the tender, the name of the accredited representative(s) of the Contractor who would be responsible for taking instructions from the Engineer in Charge shall be communicated in writing to the Engineer in Charge.
2. The Contractor shall give a list of IITM employees related to him.

4.6 Signing of Agreement.

1. The successful contractor on acceptance of his tender shall within 14 days from the stipulated date of start of the work, sign the contract.

2. Documents constituting the contract

a. Non judicial stamp paper for value not less than Rs.100 containing the brief description of the contract duly signed by both parties to the contract.

b. The notice inviting tender, the financial bid and all other the documents including drawings, if any, forming the tender as issued at the time invitation of tender and acceptance thereof together with any correspondence leading thereto.

c. Decisions taken in the Pre-bid meeting if conducted.

d. Letter of acceptance

e. Letter of award (After submission of Performance Guarantee)

4.7 Special conditions

1. Child Labour is strictly prohibited.
2. Construction labour shall not be permitted (except staff for watch and ward) to stay inside the campus and no labour camp shall be allowed to be set up inside the campus.
3. The construction activities and storage of materials shall be restricted within the area earmarked around the proposed building, which shall be barricaded with materials approved by IITM.
4. The contractor shall abide by the restrictions imposed by the security wing of the Institute on the working and on movement of labour, materials etc. and nothing extra shall be payable on this account. The contractor shall arrange for necessary photo identity passes for the labour for entry into the campus. Advance action for obtaining such passes shall be taken by the contractor and no claim on this account shall be entrained.
5. Movement of labour should be restricted to the areas where work is carried out. Workers should be made to confine themselves to the work areas and should not wander into the near by areas / buildings/ forest.
6. The work should be executed during day time only. If the work is required to be carried out in the night, necessary permission of the Engineer-in-charge shall be obtained. Contractor will make his own arrangement for lighting the area and no extra amount for carrying out the work during

night is payable. To the extent possible engaging women labour in the night shift should be avoided

7. The work shall be carried out with least hindrance to the adjoining buildings and offices and the contractor will be responsible for any damage, caused to the existing fixtures, electric fittings, cables, roads, pipelines etc. in the course of execution and the contractor shall make good any such damages for which nothing extra is payable.
8. Water for construction shall be arranged by the contractor. The contractor will not be allowed to use any of the water resources available within the campus nor will be permitted to dig any bore well inside the campus.
9. No plot rent shall be charged for materials stocked in the institute land during the course of construction with the prior approval the Engineer. All such materials shall be removed at the time of completion of the work.
10. The contractor shall make his own arrangement for electricity required during the construction period.
11. Tenderers shall inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the site and shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not. Submission of a tender implies that the tenderer has read the complete contract documents and is aware of the conditions, specification of the work to be done and of the local conditions and other factors having a bearing on the execution of work. Any claim either for extra amount or for additional time for execution due to ignorance about the site and working condition is not payable.
12. All documents forming the contact shall be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scaled.
13. In the case of discrepancy between the schedule of Quantities, the specifications and/or the Drawings, the following order of precedence shall be observed.
    i. Description of item in the Schedule of Quantities.
    ii. Particular Specifications and special conditions, if any
    iii. Drawings.
    iv. C.P.W.D Specifications
    v. Specifications of B.I.S.
14. If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer-in-charge shall be the deciding authority with regard to the interpretation of the documents and his decision shall be final and binding on the contractor.

15. Any error in description, quantity or rate in schedule of Quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract. All such variations, errors additions, substitutions etc shall be decided as per the terms of the contract
16. The building work shall be carried out complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra will be paid on this account.
17. The work of water supply, internal sanitary installations and drainage work etc. shall be carried out as per the local body bye-laws and the contractor shall produce necessary completion certificate from such authorities after completion of the work, if required.
18. Where CPWD specifications are not available for fittings and fixtures, the same should conform to bye-laws and specification of the local Body. The contractor should engage licensed plumbers for the work.
19. The contractor shall comply with all legal orders and directions of the local or public authority or municipality and abide by them.
20. The contractor shall give a performance test of the installation(s) as per specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
21. Any cement slurry added over base surface (or) for continuation of concreting to obtain better bond between old and new concrete is deemed to have been included in the items and nothing extra shall be payable or extra cement considered in consumption on this account
22. The Rate for RCC works includes cost of concreting in sloped & curved roof, chajjas & beams and no extra rate shall be payable for concreting in such situations.
23. The rate for Centering & shuttering under concrete items will be the same for Centering & shuttering in curves & arches also unless specified otherwise in the BOQ.
24. The contractor should construct proper mortar bands of lean mix with adequate depth & size over the roof for flooding with water & proper curing. In case of Arches, wet gunny bags shall be used for a period of two weeks.
25. Holes and chase for water supply and drainage, etc, shall be provided as directed during progress of work without any claim for extra for finishing
26. The rate quoted for tiling on walls shall include providing the bevel edges for the corners or the PVC corner strips. No additional payment shall be payable on this account.
27. Sample of all materials, fixtures, flooring tiles, wall tiles, doors, windows, sanitary fittings, roofing sheets electrical fittings etc, shall be got approved in advance from the Engineer-in-Charge

before taking up the respective work. The contractor shall produce all the materials in advance so that there is sufficient time for testing and approving the materials and clearance of the same before their use in work.

28. The contractor shall be furnished, free of cost one certified copy of the contract documents except Standard Specifications, Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract
29. For any dispute arising out of this agreement, the legal jurisdiction will be at Chennai in Tamil Nadu only.
30. It is not binding on the competent authority to accept the lowest or any other tender and any or all the tenders received can be rejected without assigning any reason.
31. Canvassing whether directly or indirectly, in connection with tender is strictly prohibited and the tenders of the contractors who resort to canvassing will be liable to rejection.
32. The competent authority reserves the right to accept part of the tender and the tenderer shall be bound to perform the same at the rates quoted.
33. The contractor shall associate an Electrical contractor of the appropriate class to carry out the electrical works. But it is the principal contractor who is responsible for completion of the Electrical work also as per contract. No agreement is created between the Electrical contractor associated by the tenderer and IITM in this regard.
34. Other agencies related to this project will also simultaneously execute their part of works and the contractor shall cooperate and allow smooth working of all such agencies. The contractor shall leave such holes, openings etc, for laying / burying of pipes, cable, conduits, clamps, boxes and hooks for fans etc. as may be required for other agencies. Conduits for electrical wiring shall be laid in such a way that they leave enough space for concreting and do not adversely affect the structural members. The rates quoted for the items of work are deemed to include charges for coordinating with all such agencies and nothing extra is payable on this account.
35. The following events will take place in the Campus which may hinder the progress of work.

The duration of the events are

a. Shaastra and Saarang - 10 days (normally in January)
b. Convocation - 2 days (normally in July)

The completion time stipulated in the contract is deemed to have included the above, if they happen during the duration of the contract.

5. SCHEDULES

Schedule 'A' - The Bill of Quantities enclosed in this document.

Schedule 'B' - Schedule of materials proposed to be issued to the tenderer

NO MATERIAL SHALL BE ISSUED TO THE TENDERER BY IITM

Schedule 'C'- Schedule of tools and plants proposed to be hired to the tenderer

NO TOOLS AND PLANTS SHALL BE HIRED TO THE CONTRATOR BY IITM

Schedule 'D' - Extra schedules for specific requirements / documents for the work, if any.

Schedule 'E'- Price escalation Clause – Not applicable to this contract.

Schedule 'F'

Name of work: Construction of Students Facility Centre in front of Sharavathi hostel by dismantling old unused cycle shed

Estimated cost of work	: Rs 24.18 Lakhs
Earnest money	: Rs.49,000/-
Performance Guarantee	: 5% of the tendered value
Security Deposit	: 5% of the tendered value

General Rules and Directions:

Officer inviting tender	Executive Engineer(Civil), IITM
Maximum percentage for quantity of items work to be executed beyond which rates are to be determined in accordance with clause 12.2 and 12.3.	See below

Definition

Engineer-in-charge	Executive Engineer(Civil)
Accepting authority	Director, IIT Madras
Percentage on cost of material and labour to cover all overheads and profit	15%
Standard schedule of rates	CPWD DSR 2013
Department	IIT Madras
Standard CPWD contract form	CPWD form 8 with upto date Modification and correction

Clause 1

i.) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance in days. — 7 (seven) Days

(ii) Maximum allowable extension beyond the period provided above — 7(Seven) Days.

Clause 2

Authority for levying compensation under clause 2.: EXECUTIVE ENGINEER(CIVIL)

Clause 2a

Whether clause 2a shall be applicable : Yes applicable.

Clause 5

Number of days from the date of issue of
letter of acceptance for reckoning the date of start : 14 Days

Milestones to be achieved shall be as given below. NOT APPLICABLE

Time allowed for execution of work : 5 months

Authority to give fair and reasonable
Extension of time for completion of work : Executive Engineer(Civil), IITM

Clause 6, 6A **:** Clause 6A shall be applicable.

Clause 7

Gross work to be done with net
payment after adjustment of advances for material
collected, if any, since the last such payments : Rs. 5.00 Lakhs
for being eligible to interim payment.

Clause 10A - List of Testing equipments to be provided as listed in this document - NOT APPLICABLE

Whether Clause 10B (ii) shall be applicable: No

Clause 10 CA and 10C NOT applicable to this work

Materials covered under clause
1. Cement : Grey cement
2. Steel : Bars and Rods

Clause 10CC : Not applicable.

Clause 11

Specification to be followed for execution of work

CPWD Specifications 2009 Volume I to II and revised CPWD Specifications up to date, general specifications for electrical works part – I 2004, general specifications for electrical works part-IV Sub Station 2007.

Clause 12

Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building work (Excluding foundation)	30%
Deviation limit beyond which clauses 12.2 & 12.3 shall apply for foundation work.	100%

Clause 16

Competent Authority for deciding reduced rates for items which are not as per specification	Executive Engineer (Civil) IITM

Clause 36(i) Technical Personnel to be employed at site.

Designation	Minimum qualification and experience required	Discipline	Rate of recovery per month for non-employment
Principal Technical Representative	Graduate with 5 years experience – 1no	Civil Engineering	Rs. 15000

6. ADDITIONAL SPECIFICATIONS

The additional specification given below is not substitute to CPWD specifications or IS specifications. These shall be read along with CPWD specifications or IS specifications.

6.1. GENERAL

1. The work shall be carried out using metric dimensions only and shall be measured and paid in metric dimensions. F.P.S. units, if any, mentioned in drawings etc are for guidance only.
2. Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract the same shall be inclusive of all amendments issued thereto or revision thereof if any, up to the date of receipt of tenders.
3. Unless otherwise specified in the schedule of quantities the rates for the various items are for execution at all heights, levels and locations.
4. Unless otherwise specified in the schedule of quantities the rate for the items of the work shall be considered as inclusive of pumping out or bailing out water during execution, if required, for which no extra payments will be made. This will include water encountered from any source, such as rains, floods, sub-soil water table being high or due to any other cause whatsoever.

6.2. FLY ASH CONCRETE BLOCK

1. GENERAL

a. Terminology Connected with this work shall be same as those applicable for Brick Work

b. The contractor whose tender is accepted shall furnish the name(s) of the manufacturer from whom he proposes to procure the blocks and get the same approved from the Engineer in Charge before procuring the material. The Engineer in Charge may inspect / get inspected the factory from where the contractor proposes to procure the blocks before accord of approval. The contractor shall arrange for the inspections.

c. The contractor shall furnish the following and obtain prior approval of the Engineer before procuring the blocks

   i. The size and grading of stone aggregate to be used
   ii. The grading of fine aggregate
   iii. Details of fines obtained from stone crushing proposed to be used in the manufacture of the blocks
   iv. The type of cement proposed to be used
   v. The type of fly ash proposed to be used and % proposed
   vi. Details of additives etc if any to be used.

d. The proportion of the ingredients may be decided by the contractor / manufacturer to obtain the required strength and other required qualities and got approved in advance.

e. Concrete Blocks shall be manufactured in a factory equipped with weigh batching arrangements for weighing the various ingredients and the blocks shall be manufactured using machinery equipped with vibratory / mechanical compaction arrangements.

f. The blocks shall have smooth rectangular faces with sharp corners and shall be uniform in colour and shall emit a ringing sound when struck

g. Necessary quality control and testing facilities should be available in the factory for conducting routine tests on each batch of the blocks and necessary records should be available.

2. Dimension of the Blocks

The blocks shall be of size 225 x 115 x 70 MM

The blocks shall be tested as per procedure detailed in IS 2185 (Part I) – 2005

The tolerances shall be as given below

Length = +or - 5MM

Width / Thickness = + or – 3 MM

3. Strength of the Blocks

The class designation of the blocks shall be M10. The average compressive strength shall not be less than 10 N per sqmm and strength of individual units shall not be less than 8 N per sqmm. The blocks shall be tested as per procedure detailed in IS 2185 (Part – I) - 2005

4. Water absorption

The blocks shall be tested as per procedure detailed in IS 2185 (Part – I) – 2005 for water absorption and the absorption shall not exceed 10 %.

5. Drying Shrinkage

The blocks shall be tested as per procedure detailed in IS 2185 (Part – I) – 2005. The drying shrinkage shall not exceed 0.06 %

6. Moisture Movement

The blocks shall be tested as per procedure detailed in IS 2185 (Part – I) – 2005. The moisture movement shall not exceed 0.09 %

7. Masonry Work

The method of construction, the bonds, width of joints, curing, measurements, tolerances in masonry work, etc shall be as per CPWD specifications detailed for “Brick work”

6.3. WATER PROOFING TREATMENT

1. General:

All the water proofing treatment shall be got executed through one of the approved special agencies. The contractor shall furnish the following particulars immediately after the issue of acceptance of the tender by the department

a. The name of specialized firm
b. The trade names of the product, which would be used.
c. List of works where the treatment had been used
d. Quantity of chlorides and sulphides used in the product.

GUARANTEE FOR WATER PROOFING TREATMENT

a. Ten years guarantee in prescribed proforma attached shall be given by the contractor for the water proofing treatment.

b. 10 %(ten percent) of the cost of the items pertaining to water proofing shall be retained as guarantee to watch the performance of work executed.

c. However, half of this amount (withheld) would be released after 2 years from the date of completion of the work, if the performance of the water proofing works is satisfactory.

d. The remaining withheld amount shall be released after completion of 10 years from the date of completion of work, if the performance of the water proofing works is satisfactory.

e. If any defect is noticed during the guarantee period, it should be rectified by the contractor within 7days of issuing of notice by Engineer-in-charge.

f. If not attended to, the same shall be got done through other agency at the risk and cost of the contractor and recovery shall be effected from the amount retained towards guarantee.

g. In any case the contractor and the specialist agency during the guarantee period shall inspect and examine the treatment once in every year and make good any defect observed and confirm the same in writing.

h. The security deposit can be released in full, if bank guarantee of equivalent amount, valid for the duration of guarantee period, is produced and deposited with the Institute.

6.4. Electrical Conduits Laying

For fixing electrical conduits in walls the required chase should be cut using only electrically operated circular saw. Using of hammer and chisel is completely prohibited

6.5 Stainless steel handrail: -

Stainless steel, tubes, bars, etc., bright polished including matching stainless items such as plates, screws, etc, welding and forming units with best workmanship, set in position using special

hardware, expansion fasteners of approved make, etc., in all floors and all levels, and without painting, all complete with SS 304 Stainless Steel and as per architectural drawings.

6.6. CONDITIONS FOR CEMENT AND STEEL BROUGHT BY THE TENDERER FOR USE IN THE WORK.

CEMENT

The contractor shall procure OPC grade 53 / PPC super grade from reputed manufactures of cement having a production capacity of one million tonnes per annum or more, such as ACC, Ultratech (L & T), Ramco, Chettinad, Zuari, Birla, Cement Corporation of India, etc or any manufacturer approved by the Ministry of Industry, Government of India and holding license to use ISI Certification mark for their product whose name shall be got approved from the Engineer-in-Charge. The contractor may submit a list of cement manufactures whose product they propose to use. The Engineer-in-charge has right to accept or reject the names of the manufactures which the contractor propose to use in the work. No change in tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufactures given by the contractor, fully or partly.

Supply of cement shall be in 50 kg bags bearing manufacture's name and ISI marking.

Samples of cement arranged by the contractor shall be got tested in accordance with provisions of relevant BIS codes.

In case test results indicate that the cement arranged by the contractor does not confirm to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order form the Engineer-in-charge to do so.

7. The cement shall be brought to site in bulk supply of approximately 100 tonnes or as decided by the Engineer- in- charge
8. The cement go-down of the capacity to store a maximum of 4000 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be done.
9. Double lock provision shall be made in the door of the cement go-down, the keys of one lock shall remain with the engineer-in-charge or his authorized representative and the key of the other lock shall remain with the contractor.
10. The contractor shall be responsible for the watch and ward and safety of the cement go-down.
11. The contractor shall facilitate the inspection of the cement go-down by the Engineer-in-Charge or his authorized representative at any time
12. The contractor shall supply free of charge the cement required for testing.
13. The frequency and the details of the test shall be decided by the Engineer-in-Charge depending on the quantum of supply in each batch. The cost of tests shall be borne by the contractor /Institute in the manner indicated below

13.1 by the contractor, if the results show that the cement does not conform to the relevant BIS Code

13.2 by the Institute, if the results show that the cement conforms to relevant BIS Codes

14. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract.

15. The theoretical consumption of cement shall be worked out as per procedure prescribed in the contract and shall be governed by conditions laid there in.

16. Items for which standard coefficients of cement consumption are not available in DSR 2012, the same shall be decided by the Engineer-in-charge.

17. If the cement consumed is less than the theoretical quantity (after allowing for wastage and variation) the cost of the cement consumed less at market rate plus 10% and cartage charges to site of work shall be recovered from contractor provided the work carried out is acceptable to the Institute.

18. Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

19. The cement bags shall be stacked on proper floors consisting of two layers of dry bricks laid on well consolidated earth at a level of at least one foot above ground level. The stacks shall be in rows of two and 10 bags high with a minimum of 0.6 m clear space all round. The bags should be placed horizontally continuous in each line actual size / shape of go-down shall be as per site requirements and nothing shall be paid on this account.

20. The decision of Engineer-in-charge regarding the capacity of the godown shall be final.

21. Cement register for the cement shall be maintained at site. The account of daily receipt and issue of cement shall be maintained in register in the proforma prescribed and signed daily by the contractor or his authorized agent.

6.7. STEEL

6.7.1. The contractor shall procure steel/TMT reinforcement bars of grade Fe 500D conforming to relevant BIS codes from main producers (viz) SAIL, TISCO or RINL

6.7.2. The contractors shall have to obtain and furnish test certificate to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

6.7.3 Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes.

6.7.4 In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work by the

contractor at his cost with in a week's time from written orders from the Engineer-in-charge to do so.

6.7.5 The Steel reinforcement shall be brought to the site in bulk supply of 10 tonnes or more as decided by the Engineer-in-charge

6.7.6. The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different size and length shall be stored separately to facilitate easy counting and shifting.

6.7.7. For checking nominal mass, tensile strength, bend test, re-bend test. Etc specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than specified below.

Size of Bar	For Consignment below 100 tonnes	For Consignment over 100 tonnes
Under 10 mm dia	One sample for each 25 tonnes or part there of	One sample for each 40 tonnes or part there of
10mm to 16 mm	One sample for each 35 tonnes or part there of	One sample for each 45 tonnes or part there of
Over 16 mm dia	One sample for each 45 tonnes or part there of	One sample for each 50 tonnes or part there of

6.7.8. The contractor shall supply free of charge the steel required for the testing. The cost of test shall be borne by the contractor / Institute in the manner indicated below

i. By the contractor, if the results show that the steel does not conform to relevant BIS codes

ii. By the Institute if the results, show that the steel conforms to relevant BIS codes.

6.7.9. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in the contract and shall be governed by conditions laid therein.

6.7.10. Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

6.7.11. The standard section weights referred to as standard tables of CPWD Specifications shall be considered for conversions of length of various sizes of MS bars and cold Twisted bars/high yield strength deformed bars/thermo-mechanically treated bars into weight are as under

Size (dia in mm)	Weight in kg/m
6	0.222
8	0.395
10	0.617
12	0.888
16	1.579
18	1.999
20	2.467
22	2.985
25	3.855
28	4.836

32	6.316
36	7.994
40	9.869
45	12.490
50	15.424

6.7.12. For steel, measurement will be regulated on sectional weight basis, weight being calculated with help of above tables. The weight shall also be taken as per actual basis. If actual weight is found lower than the standard weight but within tolerance limits as per relevant IS codes, nothing extra shall be paid for over weight of steel section than given in the table.

6.7.13. The mild steel to be used shall conform to IS 432 - Cold twisted bars/High yield strength deformed bars and thermo-mechanically treated bars shall conform to IS 1786.

6.7.14. The contractor shall submit challan / bill / gate pass /cash memo in support of material purchased from manufactures/their authorized dealers/authorized producer.

6.7.15. Over the theoretical quantity of materials so computed, a variation shall be allowed as specified in schedule F.

6.7.16. If the quantities of materials actually used are less than the theoretical Quantities including authorized variations, the cost at market rates plus 10% including cartage to the site of such quantities of materials as determined by Engineer-in-charge, which shall be final and binding, shall be recovered from the contractor without prejudice to department rights/remedies available under the contractor, for action against substandard work.

7. STATUTORY REQUIREMENTS / APPROVAL FROM STATUTORY AUTHORITIES

Work for electrical installation shall be carried out in accordance with this specification and complying with the relevant statutory requirements and national standards. It shall be the responsibility of the contractor to obtain approvals of competent Central or State Government authorities and satisfy them regarding the compliance with relevant regulations for this scope of work.

The work should be carried out only under the supervision of licensed supervisors. The licenses possessed by the Contractor's supervisor shall be made available to the Client for scrutiny before commencement.

Test certificate for installation shall be prepared in the form required by the Electrical Inspectorate Govt. of Tamilnadu and Tamilnadu Electricity Board. Any rework on account of remarks by Electrical Inspector shall have to be carried out by the Electrical contractor at no extra cost.

8. Forms

8.1 Guarantee bond

Form of performance security (guarantee) Bank guarantee bond

In consideration of the Indian Institute of Technology Madras (hereinafter called "The Institute") Having offered to accept the terms and conditions of the proposed agreement between ……and…… (Hereinafter called "the said contractor (s))for the work…….... (Hereinafter called "the said agreement") having agreed to production of a irrevocable bank Guarantee for Rs…….(Rupees…….only) as security / guarantee from the contractor (s) for compliance of his obligations in accordance with the terms and condition in the said agreement.

1) We……(hereinafter referred to as "the Bank") hereby (Indicate the name of the Bank) Undertake to pay to the Institute an amount not exceeding Rs……(Rupees……..only) on demand by the Institute.

2) We……do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the Institute stating that the amount claimed is required to that recoveries due or likely to be due from the contractor (s). Any such demand on the Bank shall be conclusive as regard the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs…….(Rupees…….only)

3) We, the said bank further undertake to pay to IITM any money so demanded notwithstanding any dispute or disputes raised by the contractor (s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present guarantee being absolute and unequivocal.
The payment so made by us under this bond shall be a valid discharge of our liability payment therein under and the contractor (s) shall have no claim against us for making such payment.

4) We……..further agree that the guarantee herein (indicate the name of the bank) Contained shall remain in full force and effect during the period that would be taken for the said performance of the said agreement and that it shall continue to be enforceable till all the dues of the Institute under or by virtue of the said agreement have been fully paid and claims satisfied or discharged or till Engineer-in-charge on behalf of the Institute certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor (s) and accordingly discharges this guarantee.

5) We……further agree with the Institute that (Indicate the name of the Bank) the Institute shall have the fullest liberty without our consent without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Institute against the said contractor (s) and to forebear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor (s) or for any forbearance, act of omission on the part of the Institute on any indulgence by the Institute to the said contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6) This guarantee will not be discharged due to the change in the constitution of the bank or the contractor (s).

7) We……lastly undertake not to revoke this (Indicate the name of the Bank) Guarantee except with the previous consent of the Institute in writing.

8) This guarantee shall be valid up to……unless extended on demand by Institute. Notwithstanding anything mentioned above, our liabilities under this guarantee is restricted to Rs …….… (Rupees ……) and unless a claim of writing is lodged with us within six month of the date of expiry or extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharge.

Dated the……..day of…….for……..(Indicate the name of the Bank)

8.2. Form of guarantee bond for EMD

In consideration of the Indian Institute of Technology Madras (hereinafter called "The Institute") Having offered to accept the terms and conditions of the proposed tender for the work of ……..……..……having agreed to production of an irrevocable bank Guarantee for Rs……(Rupees…….only) as security from the contractor (s) for compliance of his obligations in accordance with the terms and condition in the tender.

1) We…… (Hereinafter referred to as "the Bank") hereby (Indicate the name of the Bank) Undertake to pay to the Institute an amount not exceeding Rs…… (Rupees……..only) on demand by the Institute.

2) We……do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the Institute stating that the amount claimed is required to that recoveries due or likely to be due from the contractor (s). Any such demand on the Bank shall be conclusive as regard the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs…….. (Rupees…….only)

3) We, the said bank further undertake to pay to IITM any money so demanded notwithstanding any dispute or disputes raised by the contractor (s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present guarantee being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability payment therein under and the contractor (s) shall have no claim against us for making such payment.

4) We……..further agree that the guarantee herein (indicate the name of the bank) Contained shall remain in full force during the **SIX months period.**

5) We……further agree with the Institute that (Indicate the name of the Bank) the Institute shall have the fullest liberty without our consent without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor (s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Institute against the said contractor (s) and to forebear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor (s) or for any forbearance, act of omission on the part of the Institute on any indulgence by

the Institute to the said contractor (s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6) This guarantee will not be discharged due to the change in the constitution of the bank or the contractor (s).

7) We……lastly undertake not to revoke this (Indicate the name of the Bank) Guarantee except with the previous consent of the Institute in writing.

8) This guarantee shall be valid up to **SIX months** unless extended on demand by Institute. Notwithstanding anything mentioned above, our liabilities under this guarantee is restricted to Rs…… (Rupees ……) and unless a claim of writing is lodged with us within six month of the date of expiry or extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharge.

Dated the……..day of……for……..(Indicate the name of the Bank)

8.3 GUARANTEE TO BE EXECUTED BY TENDERERS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

The Agreement made this…….. day of …….. Two thousand and ……between ……. Son of …… hereinafter called the guarantor of the one part and the Indian Institute of Technology (hereinafter called Institute) of the other part dated ……and made between the GUARANTOR OF THE ONE part and the Institute of the other part, whereby the contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak-proof.

AND WHEREAS GUARANTOR agreed to give a guarantee to effect that the said structures will remain water and leak-proof for ten years from the date of giving of water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak-proof and the minimum life of such water proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract.

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

(a) Misuse of roof shall mean any operation which will damage proofing treatment, like chopping of firewood and things of the same nature which might cause damaged to the roof.
(b) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof where by water proofing treatment is removed in parts.
(c) The decision of the Engineer-in-charge with regard to cause of leakage shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the building waterproof at his cost to the satisfaction of the Engineer-in-charge and shall commence the work for such rectification with in 7 days from the date of issue of the notice by the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Institute by some other contractor at the GUARANTOR'S cost and risk, and the decision of Engineer-in-charge as to the cost, payable by the guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing or commits breach there under then the guarantor will indemnify the Institute against all loss, damage, cost, expense or otherwise which may be incurred by it by reason of any default on the part the GUARANTOR in formance and observance of this supplementary agreement. As to the amount of loss and or charge and / or cost incurred by the Institute the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHEREOF those present have been executed by the ……and by……and for and on behalf of the Indian Institute of Technology Madras on the day, month and year first above written.

SIGNED SEALED and delivered by OBLIGOR in the presence of-

1.

2.

SIGNED For and on behalf of the Indian Institute of Technology Madras by……..in the presence of-

1.

2.

8.4 GUARANTEE BOND FOR ANTITERMITE TREATMENT WORKS - – NOT APPLICABLE TO THIS TENDER

GURANTEE TO BE EXECUTED BY TENDERERS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF ANTITERMITE TREATMENT WORKS.

(On stamp paper of specified value)

THIS AGREEMENT is made on……day of …….. between Indian Institute of Technology Madras representing through Director hereinafter called the employer (which expression shall, wherever the context so demands or requires, includes their successor in office and assigns) of the one part, and M/s…… herein after called the contractor (which expression shall, wherever the context so demands or requires, includes his/her successor and assigns) of the other part.

WHEREAS this agreement is supplementary to the Contract Agreement (hereinafter called "the contractor") no…….dated…… made between the Employer on the one part and the contractor of the other part, whereby the contractor, inter-alia, undertook to render the building and structure in the said contract rendered completely water and leak proof.

AND WHEREAS THE contractor agreed to give a guarantee to the effect that the said structure will remain without any termite for 10 years.

NOW THE contractor hereby guarantee that termite proof treatment given by him will render the structure completely termite proof and the minimum life of such termite proofing treatment shall be ten years to be reckoned from the date after the maintenance period prescribed in the contract is over.

The decision of the Employer with regard to cause of termite attack shall be final.

During this period of guarantee the guarantor shall make good all defects and in case of any defect being found, render the building termite proof to the satisfaction of the Engineer-in-charge at his cost and shall commence the work for such rectification within 7 days from the date of issue of the notice by the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Institute by some other contractor at the GUARANTOR'S cost and risk, and the decision of Engineer-in-charge as to the cost, payable by the guarantor shall be final and binding.

That if the guarantor fails to execute the termite proofing or commits breach there under then the guarantor will indemnify the Institute and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part the GUARANTOR in

formance and observance of this supplementary agreement. As to the amount of loss and or charge and / or cost incurred by the Institute the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHEREOF those present have been executed by the ……and by……and for and on behalf of the Indian Institute of Technology Madras on the day, month and year first above written.

SIGNED SEALED and delivered by OBLIGOR in the presence of-

1.

2.

SIGNED For and on behalf of the Indian Institute of Technology Madras by……..in the presence of-

1.

2.

9. Special conditions

9.1. Protection of Environment

1. The debris / construction waste and other waste generated from the work spot should not be thrown inside the campus. All waste material should be taken out of the campus or should be dumped at a place earmarked by the Engineer in charge. All construction material should be stored only at places earmarked by the engineer in charge.
2. Material like cement, aggregate, steel etc should not be stored in buildings that are in use. If any material stored in unauthorized location the same shall got removed at the cost of contractor and necessary rent shall be levied for the area used for storage.
3. For Inter-carting of various materials use of animal drawn vehicles are strictly prohibited.
4. Preparation of concrete, mortars in the roads, pavements, bare floors under the building is strictly prohibited.
5. While transporting the materials along the road, spillage of material should be avoided. If any spillage occurs, the same should be got cleaned immediately.
6. No vegetation inside the campus should be damaged.
7. Smoking is strictly prohibited at workplace.

10.0 Safety at the Site

1. The contractor must appoint a qualified person (full time) for taking care of implementation of Safety systems

2. The Contractor shall submit the **Project Safety Plan** stating the methodology of implementation of systems to ensure the safe and environment friendly work place. The Safety Plan must include the following.

    a. Organization Chart

    b. Reporting relationship of the safety enforcement personal in a flow chart

    c. Safety Committee Structure – Chairman, secretary and committee members

10.1 Roles & Responsibilities of the Safety committee

Enforcement of

1. applicable Statutory requirements, standards and codes related to safety and its adherence,
2. General safety rules and regulations concerning use of personal protective equipment and safety devices relevant to site activities, Awareness and Training Programs, Motivational schemes, programs for safe Access, Egress and workstation safety
3. Safe use of construction power supply and upkeep / maintenance of installations
4. Work permit systems
5. Use, maintenance and inspection of Plant & machinery
6. Scaffold & formwork norms
7. Use, maintenance and inspection of Lifting Tools
8. Fire Protection and prevention
9. Emergency preparedness

10.2 Status of Safety implementation at site will be discussed in the Weekly Review meeting. Contractor must submit the safety statistics every month in the enclosed format. Merit Certificate will

be issued for the achievement of safety mile stones like 0.5 million safe man hours, one million safe man hours,1.5 million safe man hours and so on.

10.3 The General Guidelines governing the safety implementation shall include the following Rules., while preparing the safety plan.

1. All the workmen shall undergo Safety Induction, screening before engaging them on the job. Physical fitness of the person to certain critical jobs like working at height or other dangerous locations to be ensured before engaging the person on work.

2. Sub-contractors shall ensure adequate supervision at workplace. They shall ensure that all persons working under them shall not create any hazard to self or to co-workers.

3. Nobody is allowed to work without wearing safety helmet. Chinstrap of safety helmet shall be always on. Drivers, helpers and operators are no exception.

4. All labour should be dressed properly attending to work wearing dhotis, lungies should be avoided to the extent possible.

5. The workmen shall wear suitable protection devices like mask, gloves, shoes etc,

6. No one is allowed to work at or more than three meters height without wearing safety belt and anchoring the lanyard of safety belt to firm support preferably at shoulder level.

7. No one is allowed to enter into workplace and work at site without adequate foot protection.

8. Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.
9. All PPE like Safety shoes, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.

10. All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.

11. Adequate illumination at workplace shall be ensured before starting the job at night.

12. All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.

13. Erection zone and dismantling zone shall be barricaded and nobody will be allowed to stand under suspended loads.

14. Contractors should spray water using Water browser periodically in the site to reduce the dust rising due to wind.

15. Horseplay is completely prohibited at workplace. Running at the site is completely prohibited, except in the case of emergency.

16. Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the tre-passers from entering the area.

17. Other than electricians with red helmet no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.

18. All electrical connections shall be made using 3 or 4 core cables, having a earth wire.

19. Proper Earthling pits at site to be constructed. And the sensitivity must be maintained less than 1 ohm

20. Main panel boards should have MCB’s and RCCB / ELCB’s (30 mA sensitivity).

21. Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.

22. All major, minor accidents and near misses to be recorded and reported to the IITM and the management must take necessary steps to avoid the recurrence.

23. Scaffoldings used should be of proper construction. No Casuarina pole / bamboo scaffolding is permitted. It should be inspected by competent person(s) before use

24. All tools and tackles shall be inspected before use. Defects to be rectified immediately. No lifting tackle to be used unless it is certified by the competent authority.

25. All tools and tackles shall be tested and have a Identification no., SWL and date of next test marked on them.

26. A tools and tackles inspection register must be maintained and updated regularly.

27. Good housekeeping to be maintained. Passages shall not be blocked with materials. Materials like bricks shall not be stacked to the dangerous height at workplace.

28. Must have a reverse horn on all the Earth moving vehicles and Equipment used at site.

29. Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.

30. Adequate firefighting equipment shall be made available at workplace and persons are to be trained in firefighting techniques with the co-ordination of site safety co-ordinator.

31. All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.

32. No children shall be allowed to enter the workplace.

33. Other than the Driver / operator, no one shall travel in a tractor / tough rider etc.

34. All the lifting tools and tackles shall be stored properly when not in use.

35. Clamps shall be used on Return cables to ensure proper earthling for welding works.

36. Return cables shall be used for earthling.

37. All the pressure gauges used in gas cutting apparatus shall be in good working condition.

38. Proper eye washing facilities shall be made in areas where chemicals are handled.

39. Connectors and hose clamps are used for making welding hose connections.

40. Proper warning boards and caution notices to be displayed at required areas inside the site.
41. All cranes must have a trained signal man for signaling.
42. All underground cables for supplying construction power shall be routed using conduit pipes.
43. Spill trays shall be used to contain the oil spills while transferring / storing them.

44. Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.

10.4 Any violation of above will attract levy of penalty by the engineer in charge on the contractor.

11. INSURANCE

1. Insurance of Works

The Contractor shall effect Contractor's all risk insurance policy (CAR policy) in the joint names of the Employer and the Contractor, the name of the former being placed first in the policy, covering the following:

(a) The Works at the contract price together with the materials for incorporation in the works at their replacement value.

(b) All plants and equipment and other things brought to the site by the Contractor at their replacement value.

The insurance shall be against all losses or damages from whatever causes, other than excepted risks, as defined in Clause 2 of Conditions of Contract, for which the Contractor is responsible under the Contract. The insurance cover shall be for the period of contract and also for the period of maintenance, for loss or damage arising from a cause prior to commencement of the period of maintenance, and for any loss or damage, occasioned by the Contractor in the course of any operations carried out for the purpose complying with his course of any operations carried out for the purpose of complying with his obligations during maintenance period under Clause 17 of Clauses of Contract. Such insurance shall be affected with an insurer and with terms approved by the Employer. The Contractor shall, whenever required, produce the policy or policies and the receipts for payment of the current premiums.

2. Third Party Insurance

Before commencing the execution of the Works, the contractor shall insure against the liability for any material or physical damage, loss or injury which may occur to any property or life including that of the Employer or to any person, including any employee of the Employer, by or arising out of the execution of the works or in the carrying out of the Contract. The sum insured will be for Rs.5 lakhs. Such insurance shall be affected with an insurer and in terms approved by the Employer. The Contractor shall, whenever required, produce before the Engineer-in-charge the policy or policies of insurance and the receipts of payment of the current premiums.

3. Workmen's Insurance

The Employer's shall not be liable for any payment in respect of any damages or compensation payable according to law in respect or in consequence of any accident or injury or loss of life to any workman or other person in the employment of the Contractor or any sub-contractor, except an accident or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall

insure against such liability with an insurer approved by the Employer for sum of the established norms during the entire period till completion of Period of Maintenance.

4. Recovery from the Contractor

Without prejudice for the other rights of the Employer against the Contractor in respect of default, the Employer shall be entitled to deduct from any sums payable to the Contractor the amount of any damages, compensation costs, charges and other expenses paid by the Employer and which are payable by the Contractor under this clause.

5. **Extension of time**

The Contractor, in case of rebuilding or reinstatement, shall be entitled to such extension of time for completion as the Engineer-in-charge may deem fit, but shall, however not be entitled to reimbursement by the Employer of any shortfall or deficiency in the amount finally paid by the insurer in settlement of any claim arising as set out herein.

6. Insurance by Sub-Contractors

Without prejudice to his liability under this clause the Contractor shall also cause all Sub-Contractors to effect, for their respective portions of the works, similar policies of insurance in accordance with the provisions of this clause and shall produce or cause to produce to the Employer such policies. The Contractor shall not permit a Sub-Contractor to commence work at the site unless the said insurance policies are submitted. In the event of failure of the Sub-Contractor to take out such a policy of insurance before commencing the works at the site, the Contractor shall be responsible for any claim or damage attributable to the said Sub-Contractor.

7. Period of Policies

All the insurance covers mentioned above shall be kept alive during the complete period of the contract. If the Contractor shall fail to effect and keep in force the insurance referred to above, or any other insurance which he may be required to effect under the terms of the Contract, then and in any such case the Employer on advice of the Engineer-in-Charge may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer as aforesaid from any moneys due or which may become due to the Contractor, or recover the same as debt due from the Contractor.

8. Damage to Persons and Property – Employer to be Indemnified

The Contractor shall indemnify the Employer against all losses and claims in respect of injuries or damages to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution and maintenance of the works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto, except any compensation or damages for or with respect to:

(a) The permanent use or occupation of land by the works or any part thereof.

(b) The right of the Employer to execute the works or any part thereof on, over, under, in or through any land.

(c) Injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, not being employed by the Contractor or for or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the contractor, his servants or agents, such part of the compensations as may be just and equitable having regard to the extent of the responsibility of the Employer, his servant or agent or other Contractors, for the damage or injury.

Signature of Contractor **Executive Engineer (Civil)**

12. Progress Reports

The contractor shall submit monthly progress report of the work in a computerized form. The progress report shall contain the following.

1. Construction schedule of the various components of the work through bar chart for the next 3 quarters, showing the milestones, targeted tasks and up to date progress.
2. Progress chart of the various components of the work that are planned and achieved for the month as well as cumulative up to the month with reasons for deviations, if any, in a tabular 12.format.
3. Plant and machinery statement, indicating those deployed in the work, and their working status.
4. Man power statement, indicating the labour and staff employed in the work and the details of work carried out.
5. Financial statement, indicating the broad details of all the running account payments received up to date, such as gross value of work done. Advances taken, recoveries effected, amounts withheld, net payments, details of payments received, etc.
6. A statement showing the extra and substituted items submitted by the contractor and the payments received against them, items pending for sanctions / decisions by the Institute , broad details of the bank guarantees, indicating their validity period, board details of the insurance policies taken by the contractor, if any, advances received and adjusted from the department etc.
7. Progress photographs in colour of the various items / components of the work done up to date to indicate visually the actual progress of the work.
8. Quality assurance and quality control tts conducted during the month with results thereof.
9. Safety report.
10. Other details asked for by the engineer-in-charge.

Proforma for Reports

Physical Progress

Name of Item	Quantity as per Agreement	Quantity executed during the month	Total up to date quantity executed	Anticipated balance quantity

Financial Progress

Amount of work done during the month	Total amount of work done up to date	Anticipated amount of balance work

TOTAL MANHOURS WORKED DURING THE MONTH

S. N	Description	Number	Man-hours worked	OT Performed	Total
1	Company Staff				
2	Subcontractor's Workmen (including security personnel				
	GRAND TOTAL OF MANHOURS WORKED DURING THE MONTH				

Total Man-hours worked since inception :

Safe man hours from last reported :

Lost time due to injury :

Details of Reportable Lost Time Injury

S N	Name of Injured	Date of Accident	Resumed duty on	Man days lost			Claim Status
				Up to last month (1)	This month (2)	Total (1+2)	
	Man days Lost during the month (Cumulative of 2)						

Number of Dangerous Occurrences : _____

No of Near Miss Cases : _____

Routed through

Site In charge

Signature:_____

Date: _____

Site Safety Co-ordinator /Time Keeper

Signature: _____

Date: _____

The contractor has to submit the progress report to the Engineer-in-Charge in triplicate by 10th day of every month as per the above proforma along with photographs of the work done during that month. The contractor shall be charged @ Rs.5000 (Rupees five thousand only) in the event of non-receipt of monthly progress report on due date (i.e. on 10th of every month) in the manner prescribed above. In case 10th day happens to be a closed holiday then the progress report will be submitted on the next working day.

A videography of the work should be undertaken at various stages of construction right from the day of start of work to date of completion / occupation covering all major events inspections etc. The videography shall be reviewed time to time by the Engineer in charge.

16.0 LIST OF APPROVED MAKE / BRAND

16.1 IITM reserves the right to select any of the make/brand shown below and only those makes/brands will be allowed to be used in the work. Nothing extra is payable even if there is cost difference between one make/brand and another.

16.2 Civil Works

Sl. no	MATERIAL	BRAND / MANUFACTURER NAME
BUILDING MATERIALS		
1	Cement OPC 53 grade / PPC super grade	ACC / Ramco / Ultra Tech / Chettinad
2	Steel Fe 500 grade	TATA / SAIL / TISCO / RINL
3	Fly ash concrete block	Confirming to IS 2185
4	Wood	First class red padak / Kongu/ Second class teak
JOINERY		
1	Paneled single door shutters	Century ply board, Bajaj, Archid Ply, Green ply - eco tech products
2	Particle board exterior grade	Novapan, Ecoboard, Bhutan board Archidply, Green ply
3	Stainless steel butt hinges	Godrej, ISI Approved brand
4	MS Piano hinges	ISI marked, IS 3818
5	Stainless steel Tower bolts	Godrej, ISI Approved brand
6	Brass mortice lock and other brass fittings	Godrej, ISI Approved brand
7	Satin nickel door lock	Godrej LKUDWICN ultra twin bolt / ISI Appd brand

8	Stainless steel cylindrical keyed door lock with knob	Godrej, ISI Appd brand
9	Multipurpose round lock	Godrej, ISI Appd brand
10	Brass hanging type floor door stopper / Casement stays and other brass fittings	Godrej / Imax
11	Aluminium fittings	Jal /crown / classic
12	Aluminium extrusions	Indal / Jindal
13	Glass	Saint gobain / Modi float/ Pilkington
14	Door closer	Everite / Hardwyn / Dorma
15	Floor stopper	Godrej / Everite/Dorma
16	Rubber wood	RUBCO / ISI Approved brand
17	PVC Rigid foam sheet	M/s Rajshri / ISI approved Brand
PAINTS		
1	Water proofing cement paint	Snowcem plus / Durocem, White Cement - Birla white / J.K.White/ Asian white
2	Interior emulsion paint	Berger - Bison, ICI - Supercote, Shalimar, Nippon & Jenson & Nicholson.
3	Weather seal matt finish paint (Exterior)	Berger - Weather coat all guard, ICI - Weather shield, Shalimar, Nippon & Jenson & Nicholson.
4	Synthetic enamel paint	Dulux ICI, Berger, Shalimar, Nippon & Jenson & Nicholson
5	Acrylic putty	Altek / Asian / ICI / Berger
6	French polish	Sheenlac / Asian/ Berger
FLOORING MATERIALS		
1	Rectified ceramic floor tile	Nitco-avana std & Bianco beige std /Jhonson / Kajaria/ Nitco/ Somany
2	Ceramic glazed floor tile	Nitco-country café std / Jhonson / Kajaria/ Nitco/ Somany
3	Ceramic glazed wall tile	Johnson , Kajaria - Emilia Crema Std, Burma Walnut, Nitco) & 450 X 300MM (Johnson ,

		Kajaria - Dona Beige Std, Nitco)
4	Granite for urinal partition	Jet black/ Black galaxy/ Tiger brown/ Ruby red
5	Granite for computer table top	Jet black/ Black galaxy/ Tiger brown/ Ruby red
WATERPROOFING		
1	Water proofing material	Impermo – Snowcem / Roff / Fosroc /BASF/ CICO
STEEL MATERIALS		
1	Stainless steel pipe	IS 304 Grade Salem Stainless steel/ Vizag
2	G.I Pipe	TATA / APPOLO
3	C.I/D.I Pipes	Lanco or equivalent
4	Pipe Fitting	R brand / Unique
5	Valves & Fixtures	Kirloskar / Audco / Leader

NOTE

The Successful tenderer shall submit test reports for all the materials / equipment. If any make is not in accordance with the tender specification it will not be accepted even if the make is indicated in the above List.

17. BILL OF QUANTITIES

Name of the work: Construction of Students Facility Centre in front of Sharavathi hostel by dismantling old unused cycle shed.

Tender No : 53/ 2013 - 14 / Civil.

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount (in Rs.)
1	1.00	Dismantling the existing cycle sheds / structures including foundation to facilitate construction of SFC. The contractor should quote the rate for disposing of all debris, dismantled material obtained from above dismantling. The debris should be disposed outside the campus	LS		
2	120.00	Hire charges for providing temporary barricading using GI corrugated sheet to a height of 3m. The GI corrugated sheets of 0.4mm thick shall be fixed to the framework made out MS pipe frame work as per the direction of Engineer-in-charge.	sqm		
3	106.00	Earthwork in Excavation by mechanical / manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed within a lead of 50m.	cum		
4	9.00	Supplying and filling in plinth with sand under floors including watering, ramming, consolidating and dressing complete	cum		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount (in Rs.)
5	15.00	Providing and laying in position ready mixed plain cement concrete, using fly ash and cement content as per approved design mix and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for plain cement concrete work, including pumping of R.M.C. from transit mixer to site of laying and curing, excluding the cost of centering, shuttering and finishing, including cost of curing, admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in – charges and : 8 graded stone aggregate 40mm nominal size). Note: (1) Excess/less cement used than specified in this item is payable/ recoverable separately. (2) Fly ash conforming to grade I of IS 3812 (Part-1) only be used as part replacement of OPC as per IS: 456. Uniform blending with cement is to be ensured in accordance with clauses 5.2 and 5.2.1 of IS: 456 -2000 in the items of BMC and RMC. 4.19.1.2 M-10 grade plain cement concrete (cement content considered @ 220 kg/cum) (All works up to plinth level)	cum		
6	25.00	Brick work with Fly ash solid concrete block of M10 grade in foundation and plinth in: Cement mortar 1:6 (1 Cement: 6 coarse sand). The blocks shall be tested as per procedure detailed in IS 2185 (Part I) – 2005.	cum		
6a	25	Extra for superstructure work	cum		
7	24.00	Half brick work with fly ash cement concrete block with cm 1:4 for super structure	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
8		Providing and laying in position machine batched and machine mixed design mix M-35 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note: - Cement content considered in this item is @ 380 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).			
8.1	30	All work up to plinth level	cum		
8.2	27	All work above plinth level and up to floor V	cum		
8.3	27	Extra for concrete work in superstructure above floor V level for each four floors or part thereof.	cum		
9	53.00	Supply and filling in foundations and plinth with approved good quality quarry dust in layers of not exceeding 200 mm thick including breaking clods, storing, transportation, double handling, watering, compacting each layer with VIBRO MAX to obtain the desired density, all leads and lifts, bailing/ pumping out of water to keep site dry while backfilling; cost shall include conveyance of all materials, labour, machinery etc. complete as directed. The rate to includes loading, unloading, hire and fuel charges for tools and plants, all royalties, taking statutory approvals as necessary to carry out the works and other incidental charges etc., complete.	cum		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
10	551	Centering and shuttering for getting neat exposed concrete finish (no external plastering will be allowed for RCC work) for all RCC/PCC works with film coated plywood shuttering board or using steel wall form work including strutting, propping etc., and removing for all RCC works. The contractor shall obtain approval from Engineer-in-Charge for the form work design & methodology proposed to be adopted in the work. For all works.	sqm		
11	5321	Reinforcement for R.C.C works including straightening, cutting, bending, placing in position and binding all complete Thermo-Mechanically treated bars with MS binding wire 18 gauge etc complete at all levels. (SAIL/ TATA) (Fe415/Fe500)	kg		
12	7	Brick work with wire cut bricks (Alfa or equivalent) using cement mortar 1:4(1 cement : 4 river sand) The rate inclusive of pointing the joints with cement mortar.	cum		
13	195	Plastering with cement mortar of thickeness 12mm or more using cement mortar 1:4	sqm		
13a	110	Plastering with cement mortar of thickeness 15mm or more using cement mortar 1:4	sqm		

S.No	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
14	90.00	Providing and fixing aluminum work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminum sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminum snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) : For fixed portion- Powder coated aluminum (minimum thickness of powder coating 50 micron)	kg		
15	103.00	For shutters of Doors, windows & Ventilators including providing and fixing hinges / Pivots and making provision for fixing of fittings wherever required including the cost of PVC / Neoprene gasket required (Fittings shall be paid for separately) (Rate for applicable for fixed and shutters). Powder coated aluminum (minimum thickness of powder coating 50 micron)	kg		
16	11	Providing and fixing Glazing in aluminum doors, windows, ventilator shutters and partitions etc of "SAINT GOBAIN / MODIFLOAT" make or equivalent with PVC / Neoprene gaskets etc complete as per architectural drawings and directions of Engineer-in-charge in all levels including scaffolding charges etc . (cost of aluminum snap beading shall be paid in basic item) With Float glass panes of 4.0mm thickness	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
17	1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately). Second class teak wood.	cum		
18	2	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	sqm		
19	1.00	Providing and fixing Pre-laminated flat pressed 3 layer (medium density) particle board or graded wood particle board IS : 3087 marked, with one side decorative and other side balancing lamination Grade I, Type II exterior grade IS : 12823 marked, in shelves with screws and fittings wherever required, edges to be painted with polyurethane primer (fittings to be paid separately). 18 mm thick	sqm		
20	10.00	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles of approved quality with necessary screws etc. complete.	Each		
21	10.00	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	each		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
22	10.00	Providing and fixing aluminum tower bolts, ISI marked, anodized (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 300x10 mm	each		
23	10.00	Providing and fixing aluminum pull bolt lock, ISI marked, anodized (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws bolts, nut and washers etc. complete.	each		
24	10.00	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	kg		
25	42.00	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 80x0.90 mm M.S. laths with 0.90 mm thick top cover. The rate inclusive of supplying and fixing ball bearing for rolling shutters.	Sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
26	1.50	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding with perforation, with open grooves for linear as well as curvilinear portions of the building , for all heights and all levels etc. including:a) Structural analysis & design and preparation of shop drawings for pressure equalization or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF / Lumiflon based fluoro polymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanized with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
		The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium items The Contractor shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places			
27	53	Providing and laying first quality industrial grade floor tile of 12mm thickness with spacer bars of 3mm size. The tile manufactured by Johnson / kajaria / somany of size 300x300mm or higher size and minimum thickness of approved shade and pattern in flooring over a bed mortar CM 1:4 (1 cement : 4 coarse sand) with approved water proofing compound (CICO / ROFF) including pointing the joints with epoxy grout of matching colour etc. complete.	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
28	12.00	Providing and laying floor first quality antiskid ceramic tiles (Johnson/Kajaria/NITCO) with spacer bars of size 3mm for floors of size 300x300x10mm or higher size and minimum thickness of approved shade and pattern in flooring for toilet on bed plaster CM 1:4 (1 cement: 4 coarse sand), 20mm thick with sieved sand mixed with approved water proofing compound (CICO / ROFF). The joints shall be sealed with epoxy grout of approved brand.	sqm		
29	52.00	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing with epoxy grout matching shade complete .	sqm		
30	4.00	Providing and fixing 18 mm thick gang saw cut, mirror polished, pre-moulded and pre-polished, machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels. Granite of any colour and shade: Area of slab over 0.50 sqm	sqm		
31	6.00	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. Granite work.	rm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
32	4.00	Providing and fixing natural stone wall tiles cladding in all colours, shades of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing with epoxy grout matching shade complete .	sqm		
33	90.00	Supplying and fixing SS hand rail of grade 306 as per the approved design for hand rails. The rate inclusive of labour, material, tools and plants required for fixing SS hand rail for floors. The rate also inclusive of buffing, grinding, welding etc complete.	Kg		
34	87.00	Providing and applying cement based putty M/s Birla or equivalent of upto2 mm thickness over plastered surface to prepare the surface even and smooth etc complete	Sqm		
35	195.00	Interior painting (without primer) :-Applying super premium quality 100 % interior acrylic emulsion paint (Paint of colour approved by IITM) tractor emulsion of asian paints (coverage not less than 100 sq.ft for 1 litre for two coats of paint) or super code interior emulsion of ICI / Bison acrylic emulsion of berger / Easy coat of nippon, two or more coats over dry surface after removal of all loose or defective paint or powdery residue by through brushing before application of acrylic emulsion paint. The contractor should ensure complete covering of floors using tarpaulin / plastic sheet while carrying out the work. The contractor should use tarpaulin / plastic sheets to cover doors, windows, electrical, plumbing fittings and floors at the time of painting to ensure no spillage of paint on these surfaces.	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
36	4.05	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade : Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	sqm		
37	168.00	Exterior painting: (with primer coat) Applying super premium quality 100% exterior acrylic emulsion paint of colour approved by IITM using apex ultima of asian paints / weather shield ultra clean of ICI / weather coat allguard of berger / weather bond of nippon in two or more coats (coverage not less than 50 sq.ft per litre for two coats) over dry surface after removal of all loose or defective paint or powdery residue and sealing the surface with a coat of exterior primer asian paint professional exterior primer (coverage not less than 100 sq.ft per 1 litre for one coat) or equivalent product of ICI / Berger / Nippon before application of the exterior emulsion paint. The contractor should ensure complete covering of floors using tarpaulin / plastic sheet while taking up the work. The contractor should give warranty for the finishes for a period not less than 7 years as specified in tender conditions from the date of completion of the work. Two or more coats. Applying birla putty over the existing wall	sqm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
38	87.00	The terrace waterproofing shall be done with Liquid, cold-applied elastomeric waterproofing membrane system SONOSHIELD HLM 5000 of BASF make. The system shall also include 300GSM Geotextile as a protection layer over the waterproofing layer. a) SURFACE PREPARATION: The roof slab lay in slope / gutter slab shall be thoroughly cleaned by removing the debris and dust, to receive the water proofing treatment. The cleaning and preparation of the substrate to which the asphalt-modified polyurethane waterproofing membrane is applied must be carried out thoroughly to leave a sound base for the application. Any laitance present on the surface must be removed mechanically. Release oil and other contaminants which may impair adhesion must be removed prior to the application of the primer. b) Waterproofing Membrane: Providing and applying liquid, cold-applied elastomeric waterproofing membrane system a single component moisture curing, asphalt-modified polyurethane based coating that cures by reaction with atmospheric moisture to form a tough but flexible waterproofing membrane. It is elastomeric, seamless waterproof membrane applied in 1 or 2 coats to a total DFT of 1.20 mm thick, having an elongation capacity of over 600%(ASTM D 412) and with solid content more than 85% applied on the RCC surface including priming (if required), crack filling, grouting, tie rod filling, coving, ponding etc complete. It shall resist bacterial attack and many acids, alkalis and salts. It shall have a yield of 0.61-0.74 m2/L at 1.1 – 1.4mm dry thickness	sqm		

		The material shall have below mention properties:- Performance property : Standard / test method : Value Tensile strength : ASTM D412 : ≥ 2.6 MPa Elongation at break : ASTM D412 : ≥700% Recovery from 100% elongation : ASTM D412 : ≥85% Tear resistance : GB/T 19250-2003 : >20N/mm Bond strength to wet substrate : GB T 12950 : 0.5N/mm2 Water impermeability : GB T 12950 at 0.3MPa, 30 min : Passes Low temp bending without cracks : GB T 12950 : -40˚C Elongation at break (before and after ageing) : GB T 12950 : ≥600% Retention of tensile strength after heat ageing : GB T 12950 :≥90% Retention of tensile strength after chemical ageing : GB T 12950 : ≥80% Puncture resistance to root penetration : Yes Crack Bridging : ASTM C836 Cycled 10 times per 24 hrs : passed 1.5mm Vapour permeability : ASTM E96 : 0.1perm Rate shall be for supply and application including preparation of surface by mechanical upgrading to remove all loose mortar and laitance, oil, grease etc. and washing the surface with water to get neat surface, finishing, curing, scaffolding, waterproofing chemicals, wastage, conveyance, tools and plants, mixing device and gauge, Shuttering etc.as complete with all respects complying with relevant manufacturer's specification as directed by the department officer/Architect.			

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
39	87.00	Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 9.5 mm) from abc or equivalent with SRI (solar refractive index) > 78, solar reflection >0.70 and emittance >0.75 on 30 mm thick cool mortar as per manufacturer specification on sloped surface of terrace, laid on water resistant cement slurry prepared in the ratio of 1:3 (1 cement and 3 abc plus powder and add 3% Nano Acryl by volume) and grouting the joints (>3mm) with abc Grout and PPF (Poly Propylene Fiber) in the ratio of 2 to 3 gm PPF per kg of abc Grout including wetting (by using a piece of sponge) the grouted surface by abc Nano Clear in the ratio of 100 ml in two liter water. , including providing skirting upto 300 mm height along the parapet wall in the same manner. The quoted rate shall inclusive of all the above treatment including necessary tools, tackles and labour etc. The finished surface area shall be measured in Sqm and paid	sqm		
40	2.00	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid.	Each		
41	6.00	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	each		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
42		Providing and fixing on wall face un-plasticized Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes fixed with PVC clip at 1.0m interval..			
a	10.00	75mm dia pipe	Rm		
b	10.00	110mm dia pipe	Rm		
c	10.00	50mm dia pipe	Rm		
43		Providing and fixing on wall face un-plasticized - PVC moulded fittings/ accessories for un-plasticized Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.			
a	2.00	110 mm plain Bend 87.5° bend	each		
b	2.00	110 mm Bend 87.5° (with door)	each		
c	2.00	110 mm equal Tee (with door)	each		
d	2.00	110 mm shoe / vent cowl	each		
e	2.00	75 mm plain Bend 87.5° bend	each		
f	2.00	75 mm Bend 87.5° (with door)	each		
g	2.00	75mm equal Tee (with door)	each		
h	2.00	75 mm shoe / vent cowl	each		
44	10.00	Supplying, fixing and testing of PVC floor trap with CP grating 150mm nominal size square 100mm diameter of the inner hinged round grating various inlet from 40 dia to 110 dia and various outlet from 75 dia to 100 dia with the extension boss tee connections, fixed in sunken floors etc., complete	Each		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
45	10.00	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require : White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	Each		
46	10.00	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS : 13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required : Kitchen sink without drain board: 610x510 mm bowl depth 200 mm	Each		
47		Providing and fixing chlorinated Polyvinyl chloride (CPVC) pipes having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fitting including fixing the pipe with clamps at 1.00m spacing. this includes jointing of pipes &fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in charge.			
a	20.00	15 mm nominal outer dia pipes	Rm		
b	10.00	20 mm nominal outer dia pipes	Rm		
c	30.00	25 mm nominal outer dia pipes	Rm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
48		Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes of Ashirvad / Astra make or equivalent make, SDR-11, having thermal stability for jot & cold water supply including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00m spacing. This includes jointing of pipes & fittings with one step approved solvent cement, testing the pipelines, joints all complete as per the direction of the Engineer-in-charge Concealed work including cutting chases and making good the walls etc			
a	20.00	15 mm nominal outer dia pipes	Rm		
b	10.00	20 mm nominal outer dia pipes	Rm		
c	30.00	25 mm nominal outer dia pipes	Rm		
49		Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes of Ashirvad Astra make or equivalent , SDR-11, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00m spacing. This includes jointing of pipes & fittings with one step approved solvent cement, testing the pipelines, joints all complete as per the direction of the Engineer-in-charge External work			
a	20.00	25 mm nominal outer dia pipes	Rm		
b	10.00	32 mm nominal outer dia pipes	Rm		
c	30.00	40 mm nominal outer dia pipes	Rm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
50		Providing and fixing "R brand / Unique" make or equivalent GI Union including cutting and threading the pipe and making long screws etc complete			
a	2.00	25 mm nominal bore	each		
b	2.00	32 mm nominal bore	each		
c	2.00	40 mm nominal bore	each		
d	2.00	50 mm nominal bore	each		
51		Providing and fixing brass gun metal gate valve "Leader / Audco / Harrison" or equivalent make with brass wheel of approved quality (screwed end) etc			
a	2.00	25 mm nominal bore	each		
b	2.00	32 mm nominal bore	each		
c	2.00	40 mm nominal bore	each		
d	2.00	50 mm nominal bore	each		
52	6.00	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 : 15 mm nominal bore	each		
53	6.00	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 a) 15 mm nominal bore.	each		
54	2.00	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms. 15 mm nominal bore	each		
55	2.00	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931. 15 mm nominal bore	each		
56	2.00	Providing and fixing C.P. brass shower arm with shower rose with 15 or 20 mm inlet : 100 mm diameter	each		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
57	2.00	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements, weighing not less than 106 gms.	each		
58	2.00	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. 450 mm long towel rail with total length of 495 mm, 78 mm wide and effective height of 88 mm, weighing not less than 170 gms.	each		
59	1000.00	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	litre		
60	10.00	Providing, laying and jointing glazed stoneware pipes grade 'A' "TACEL or equivalent make with stiff mixture of cement mortar in the proportion of 1:1 (1 cement: 1 fine sand) including testing of joints etc. complete 150 mm diameter	Rm		
61	10.00	Providing and laying cement concrete 1:5:10 (1 cement: 5 coarse sand: 10 graded stone aggregate 40 mm nominal size) alround stoneware pipes including bed concrete as per standard design: 150 mm diameter stoneware pipe	Rm		
62	10.00	Providing and laying cement concrete 1:5:10 (1 cement: 5 coarse sand: 10 graded stone aggregate 40 mm nominal size) upto haunches of stoneware pipes including bed concrete as per standard design : 150 mm diameter stoneware pipe	Rm		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
63	2.00	Providing and fixing square-mouth stoneware gully trap grade'A' complete with CI grating brick masonry chamber with water tight SFRC cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:150 x 100 mm size P type With Fly ash concrete blocks class designation 100	each		
64	2.00	Constructing masonry chamber 60 x 60 x 75cm, inside with Fly ash concrete blocks of class designation 100 in cement mortar 1:4 (1 cement: 4 coarse sand) for sluice valve, with C. I. surface box 100mm top diameter 160mm bottom diameter and 180mm deep (inside) with chained lid with RCC top slab cement concrete 1: 2:4 mix (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement: 5 fine sand: 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick finished with a floating coat of neat cement complete as per standard design. With Flyash concrete blocks of class designation 100	each		

S.No.	Qty	Description of items	Unit	Rate in Rs (figures and words)	Amount(in Rs.)
65	1.00	Constructing manhole in cement mortar 1:4 (1 cement: 4 coarse sand) RCC top slab with 1: 2:4 mix (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size), foundation concrete 1:4:8 mix (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design: Inside size 90 x 80cm and 45cm deep including C.I. cover with frame (light duty) 455x610mm internal dimensions total weight of cover and frame to be not less than 38kg (weight of cover 23kg and weight of frame 15 kg) With Fly ash concrete blocks class designation 100	each		
66	2.00	Making connection of drain or sewer line with existing manhole breaking into and making good the walls, floors with cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making necessary channels for drains etc complete for 100 to 230mm diameter	Each		
67	200.00	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	kg		
				Total Rs	

Total Amount (Rs. in words):

Signature of the Contractor **Executive Engineer (Civil)**