



**LIFE INSURANCE CORPORATION OF INDIA
ENGINEERING DEPARTMENT
NORTH CENTRAL ZONAL OFFICE,
“JEEVAN VIKAS”,
16/275, CIVIL LINES
KANPUR-208001**

e-mail: ncz_engg@licindia.com

**NAME OF WORK : PROPOSED CONSTRUCTION OF
SALES TRAINING CENTRE (STC) & HOSTEL
BUILDING ON PLOT NO 5&6 PANDEY PUR
VARANASI. (Main Building work including Civil, Plumbing &
Sanitary, Electrical, Lift, Fire Fighting System, Air Conditioning
System, Solar Water Heating System, Interior work, H.T. work &
other Ancillary works)**

PART-II (TENDER DOCUMENT)

PART-II

SUB: TENDER FOR BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEY PUR VARANASI.

CONTENTS

Sl No	CONTENTS	PAGE NO	
		FROM	TO
1	TENDER NOTICE	2	7
2	INSTRUCTIONS IN REGARD TO SUBMISSION OF TENDERS	8	12
3	PROCEDURE FOR EVALUATION OF TENDER	13	13
4	LETTER TO CONTRACTOR FROM CHIEF ENGINEER	14	
5	LETTER FROM CONTRACTOR TO THE CHIEF ENGINEER	15	17
6	APPENDIX TO "CONDITIONS OF CONTRACT"	18	20
7	NO CLAIM CERTIFICATE	21	
8	APPENDIX TO "GENERAL INSTRUCTIONS TO CONTRACTOR"	22	
9	AMENDMENT TO "CONDITIONS OF CONTRACT"	23	
10	SPECIAL CONDITIONS	24	27
11	GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES	28	42
12	ADDENDUM TO GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES	43	46
13	ANNEXURE - "M", "P", "R", "U" AND ANTI-TERMITE TREATMENT	47	53
14	LIST OF APPROVED MAKES FOR CIVIL, ELECTRICAL, FIRE ALARMS, STRUCTURAL CABLING AND FIRE FIGHTING ETC	54	68
15	TRADE PREAMBLES TO SCHEDULE OF QUANTITIES	69	97
16	TECHNICAL SPECIFICATIONS OF FACTORY MADE MODULAR FURNITURE	98	102
17	SPECIAL CONDITIONS REGARDING INSPECTION OF WORK	103	--
18	GENERAL CONDITIONS FOR SITC OF AIR CONDITIONING SYSTEMS	104	105
19	GENERAL CONDITIONS FOR MAINTENANCE OF FIRE FIGHTING SYSTEMS, AC UNITS, LIFTS, SOLAR WATER HEATING SYSTEMS & SOLAR STREET LIGHTS DURING DEFECT LIABILITY PERIOD	106	110
20	TIME & PROGRESS CHART	111	113
21	LIST OF DRAWINGS	114	
22	SCHEDULE OF QUANTITIES FOR BUILDER'S WORK, ELECTRICAL WORK, FIRE FIGHTING, AIR CONDITIONING, LIFTS, SOLAR WATER HEATING SYSTEM, SUB-STATION, INTERIOR FURNISHING WORK ETC	SOQ 1	SOQ95
23	GENERAL SUMMARY OF ESTIMATED COST	SOQ96	

 भारतीय जीवन बीमा निगम LIFE INSURANCE CORPORATION OF INDIA	Engineering Department , North Central Zonal Office, “Jeevan Vikas”, 16/275, Civil Lines, Kanpur-208001, Telephone Nos. 0512-2372685/2312634/2302184, E-mail- ncz_engg@licindia.com
No. :NCZ/ENGG/15-16/04	Date : 07.02.2016
TENDER NOTICE	
Life Insurance Corporation of India intends to invite percentage rate tender in Three Bid System for Proposed Construction of Sales Training Centre with Hostel at Pandeypur, Varanasi (U.P.) as per detailed specifications and drawings attached. The Estimated cost is ` 847.92 Lacs and Completion Period is 18 Months. The intending Bidders are requested to log on www.licindia.co.in/tender_notice.htm to download the Enrollment form, tender documents and drawings. The Bids will be received till 01.03.2016 up to 15:00 Hrs at above mentioned address only. Corrigendums, amendments, if any will be posted on LIC's website only.	
Dy. Chief Engineer (I/C)	



Engineering Dept., North Central Zonal Office, "Jeevan Vikas", 16/275,
Civil Lines, Kanpur- 208001
Tel Nos: 0512-2372685 / 2312634/2302184,

e-mail: ncz_engg@licindia.com

DIRECT TENDER NOTICE

Life Insurance corporation of India intends to invite Percentage Rate Tender in **THREE BID Systems** for proposed of Construction of **STC & Hostel Building on plot no 5 & 6 Pandeypur Yojana, Varanasi (U.P) as per detailed specifications and drawings attached.** The proposed work includes Main Building work including Civil, Plumbing, Sanitary, Electrical, Lift, Fire Fighting System, Air Conditioning System, Solar Water Heating System, H.T. work, & Interior & Ancillary works. The proposed construction shall be of R.C.C framed structure with modern Architectural finishes of high order having Stilt plus Four upper floors with a Total Built-Up Area of 27,123 Sq.ft (approx).

The tender documents and enrollment form shall be downloaded from www.licindia.in (Tenders).

The details of work and the Eligibility Criteria for pre-qualification for opening of Price Bid are as detailed below:-

Estimated cost of the work put to tender. (Rs. in lac)	Completion period for the proposed work (in months)	Minimum bank solvency* (Rs. in Lakhs).	Average annual Turn-over during last 4 financial years.(in Lakhs)	Qualifying value of similar work completed during last 7 (seven) years.	bidding capacity# (Rs. in lakhs)
A	B	C	D	E	F
847.92	18 (eighteen) months	254.37	423.96	1. Three similar** completed works costing not less than the amount equal to Rs. 339.17 Lac OR Two similar completed works costing not less than the amount equal to Rs. 508.75 Lac OR One similar completed work costing not less than the amount equal to Rs. 678.33 Lac AND 2. One completed work of any nature (either part of above or a separate one) costing not less than the amount equal to Rs. 339.17 Lac with some Central Govt. Deptt./State Govt. Deptt./ Central Autonomous Body/State Autonomous Body/ Central Public Sector Undertaking/ State Public Sector Undertaking/ City Development Authority/ Municipal Corporation of City Formed under any act by Central/State Govt. and published in Central/State Gazette.	Equal to or more than 847.92

Pre-qualification Criteria for working Contractors in LIC of India (LIC): Working contractors of LIC of India means the Contractors who have executed similar nature of work in LIC during the last seven years prior to date of publication of this Tender Notice and fulfilling all the eligibility criteria

Estimated cost of the work put to tender. (Rs. in lakhs)	Completion period for the proposed work in month.	Minimum bank solvency* (Rs. in Lakhs).	Average annual Turn-over during last 4 financial years.(in lakhs)	Qualifying value of similar work completed during 7 (seven) years.	bidding capacity# (Rs. in lakhs)
A	B	C	D	E	F
847.92	18 (eighteen) months	216.21	360.37	1. Three similar** completed works costing not less than the amount equal to Rs. 288.29 Lac OR Two similar completed works costing not less than the amount equal to Rs. 432.43 Lac OR One similar completed work costing not less than the amount equal to Rs. 576.58 Lac AND 2. One completed work of any nature (either part of above or a separate one) costing not less than the amount equal to Rs. 288.29 Lac with some Central Govt. Deptt./State Govt. Deptt./ Central Autonomous Body/ State Autonomous Body/ Central Public Sector Undertaking/ State Public Sector Undertaking/ City Development Authority/ Municipal Corporation of City Formed under any act by Central/State Govt. and published in Central/State Gazette.	Equal to or more than 847.92

***Solvency Certificate** should not be more than 3 months old prior to date of publication of this Notice.

** **Similar Nature of work:** (i.e. Office, Residential Buildings, Shopping Complex, Commercial Building but not Industrial Buildings like Ware House, Factories, and Plant.)

The bidding capacity shall be worked out by the following formula:

Bidding Capacity= [A x N x 2] - B, Where,

A= Maximum value of construction works of civil nature job in any one year during the last four years prior to the date of publication of this Tender Notice, taking into account the completed as well as the works in progress.(A certificate from the Chartered Accountant must be provided in this regards.)

N= Number of years prescribed for completion of work for which LIC have invited tender i.e. 1.5 Years

B= Value of existing commitments and ongoing works to be completed during the period of completion of work for which Bids have been invited i.e. within 21 months from last date of submission of Tender for this work. (An affidavit duly notarized in support of this statement must be provided.)

All the tenderers have to have to sign with seal the Pre Bid / Pre-Contract Integrity Pact in the given Performa and submit alongwith Technical Bid.

Only those tenderer who have executed similar nature of work of required amount anywhere in India (Similar nature of work means Office, Residential Buildings, Shopping Complex, Commercial Building but not Industrial Building like Ware House, Factories and Plant.), and fulfilling the above criteria shall submit the Bid Document to The DY Chief Engineer (I/C), Engineering Department, North Central Zonal Office, Jeevan Vikas Building (1st floor), 16/275 Civil Lines, Kanpur - 208001, **in the manner prescribed herewith:**

ENVELOPE NO-1:

Non refundable Enrolment processing Fee of **Rs. 2000.00 (Rupees Two Thousand only)**, payable in the form of Demand Draft/Pay Order in favour of “ **Life Insurance Corporation of India**” payable at **Kanpur.**, AND,

The Earnest Money Deposit either in the form of Bank Guarantee plus DD / Demand Draft / Pay Order in favour of “ **Life Insurance Corporation of India**” payable at Kanpur shall also be put in this envelope.

The Enrolment processing fee shall be accepted only in form the of Demand Draft/Pay Order

The Envelope shall be sealed and superscribed as “**ENVELOPE NO-1: EMD & ENROLMENT PROCESSING FEES**” for the proposed work of **STC at Varanasi**”

ENVELOPE NO-2:

Technical Bid containing duly filled-in Enrolment Form with supporting documents, credentials duly attested by authorized person of the firm as detailed in the Enrolment form shall be submitted in a sealed envelope duly superscribed as “ENVELOPE NO-2 : Technical (Pre-qualification)Bid. The Integrity pact shall be signed and submitted along with Technical Bid

ENVELOPE NO-3 :

The Financial Bid containing the filled-in Pre-Priced Schedule of Quantities including Part-II of the Tender Documents and tender drawings shall be submitted in a sealed envelope duly superscribed as “ENVELOPE NO-3 ; Price Bid of proposed work of STC at Varanasi”

All these three envelopes shall be sealed in a bigger envelope duly superscribed with the name of the work and last date of submission of the tender. The name & address of the tenderer should be clearly mentioned on all the Envelopes

Note: It is not necessary to submit the PART-I of Tender Document. The PART-I of tender document shall be subsequently submitted only by the lowest tenderer on receipt of intimation from LIC but prior to acceptance of their tender. **Part-I** of Tender Document shall also be the part of contract.

The filled in Tender documents (Technical bid, Financial bid and Enrolment processing fee along with EMD in the form of Bank Guarantee/Demand Draft/ Pay Order drawn in favour of **Life Insurance Corporation of India** payable at **Kanpur**) shall be submitted to **The Dy Chief Engineer (I/C), Life Insurance Corporation of India, Engineering Department, North Central Zonal Office, Jeevan Vikas Building (1st floor), 16/275, Civil Lines. M.G. Road, Kanpur 208001** on **or before 01.03.2016 till 15:00 hrs.**

The Pre-Bid meeting with prospective tenderers shall be held on **22.02.2016** at 11.00 AM at office of the Life Insurance Corporation of India, Engineering Department, North Central Zonal Office, Jeevan Vikas Building (1st floor), 16/275, Civil Lines. M.G. Road, Kanpur 20800. The interested Tenderers are requested to attend the same.

Note (1): The contractors will be selected only after satisfactory verification of the genuineness of the Bank Guarantee toward EMD, Bank Solvency and Credentials of the submitted documents by collecting Confidential report of executed works from their clients &/ or Site inspection report of executed work/ work in progress etc. The credentials of works executed under Joint-Ventures system and applications from Joint Venture agencies shall not be accepted.

Any agency applied and fulfilling the above criteria may not be considered for pre-qualification for opening of Price Bid, if unsatisfactory performance report/s is/are received for the Completed projects from their previous Employer or if their executed work/s is/are found unsatisfactory during the inspection of LIC officials.

Note (2): The name of independent monitor(s) of Integrity pact shall be intimated separately for the information of all parties concerned as the same is not available with us at present.

The Dy Chief Engineer (I/C) reserves the right to not to open the Price Bid & reject the Tender submitted by any or all tenderer/s at his sole discretion without assigning any reason whatsoever.

Date: 07.02.2016

Dy Chief Engineer (I/C)

INFORMATION ABOUT SEQUENCE OF OPENING OF TENDERS

Envelope – 1 and Envelope-2 of the Bid Document shall be opened first on the last date for submission of tender. **i.e. on 01.03.2016 at 15.30 Hrs.**

The Envelope No-1 : Containing EMD & Enrolment Processing Fee shall be opened first. Subsequently the Envelope No-2 : Containing Pre-qualification document shall be opened of the tenderers who have submitted the requisite EMD & Enrolment processing Fees.

Eligibility related documents of Tenderers who have submitted valid Earnest Money Deposit shall be evaluated and the Pre-qualification shall be decided by LIC of India based on the pre-qualification criteria given in the Detailed Tender Notice and the documents submitted by the tenderers.

Financial Bid (Price Bid) will be opened only of pre-qualified Tenderers. The date, time & place of opening of Financial Bid shall be intimated to all the qualified Tenderers and the Financial Bid (Envelope -3) shall be opened in presence of qualified tenderers or their authorized representatives, who attend.

INSTRUCTIONS IN REGARD TO SUBMISSION OF TENDERS

NOTE: Tenderers should note that non-compliance of the following instructions will render the tender liable for rejection.

1. Address to which the tender is to be submitted:
The Dy Chief Engineer (I/C), LIC of India, North Central Zonal Office, Engineering Department, Jeevan Vikas Building (1st floor), 16/275 The Mall, Kanpur 208001.

Tenderers are required to submit the tender in the following manner:

PRINTOUT & BINDING OF TENDER DOCUMENTS

The Tenderers are requested to take Printout of all the downloaded Tender Documents (Part-I & Part-II of Tender Document), Tender Drawings, Enrolment Form, Integrity Pact etc , arrange the pages serially and the documents should be binded properly. Part-II of Tender Drawings, Schedule of Quantities and Tender Drawings shall be binded together as per serial number of pages. (The Printout of Part-I & part-II Tender document except Schedule of quantities may be done on back to back of pages to minimize the volume of the tender documents)

ENVELOPE NO-1:

Non refundable Enrolment processing Fee of **Rs. 2000.00 (Rupees Two Thousand only)**, payable in the form of Demand Draft/Pay Order in favour of “ **Life Insurance Corporation of India**” payable at **Kanpur.**, **AND**,

The Earnest Money Deposit amounting to Rs. **Rs. 16,95,900/-** either in the form of Bank Guarantee plus DD / Demand Draft / Pay Order in favour of “ Life Insurance Corporation of India” payable at Kanpur shall also be put in this envelope.

The Enrolment processing fee shall be accepted only in form the of Demand Draft/Pay Order

The Envelope shall be sealed and superscribed as “**ENVELOPE NO-1: EMD & ENROLMENT PROCESSING FEES**” for the proposed work of **STC at Varanasi**”

ENVELOPE NO-2:

Technical (Pre-qualification) Bid containing duly filled-in **Enrolment Form** with supporting documents, credentials duly attested by authorized person of the firm as detailed in the Enrolment form shall be submitted in a sealed envelope duly superscribed as “**ENVELOPE NO-2 : Technical (Pre-qualification)Bid. The Integrity pact shall be signed and submitted along with Technical Bid**”

ENVELOPE NO-3: FINANCIAL BID

The Financial Bid consists of Part-I & Part-II of Tender Document & Tender Drawings. However, the Tender should submit Part-II of Tender Document including Pre-Priced Schedule of Quantities and tender drawings, duly filled and signed and sealed on all pages

in a sealed envelope duly superscribed as **“ENVELOPE NO-3: Price Bid of proposed work of STC at Varanasi”**

Note: It is not necessary to submit the PART-I of Tender Document. The PART-I of tender document shall be subsequently submitted only by the **lowest tenderer** on receipt of intimation from LIC but prior to acceptance of their tender. Part-II of Tender Document shall also be the part of contract. However the tenderer should carefully read the Part-I of tender Document before submission of Bid.

All these three envelopes shall be sealed in a bigger envelope duly superscribed with the name of the work and last date of submission of the tender. The name & address of the tenderer should be clearly mentioned on all the Envelopes

The submitted Tender Document shall be opened in the following manner:

Envelope – 1 and Envelope-2 of the Bid Document shall be opened first on the last date for submission of tender. The Envelope No-1 : Containing EMD & Enrolment Processing Fee shall be opened first. Subsequently the Envelope No-2 : Containing Pre-qualification document shall be opened of the tenderers who have submitted the required EMD & Enrolment processing Fees.

Eligibility related documents of Tenderers who have submitted valid Earnest Money Deposit shall be evaluated and the Pre-qualification shall be decided by LIC of India based on the pre-qualification criteria given in the Detailed Tender Notice and the documents submitted by the tenderers.

Financial Bid (Price Bid) will be opened only of pre-qualified Tenderers. The probable date of opening of Financial Bid will be 22.04.2016. However, the date, time & place of opening of Financial Bid shall be intimated to all the qualified Tenderers and the financial bid (Envelope -3) shall be opened in presence of qualified tenderers or their authorized representatives, who attend.

2. The Last date for receipt of tenders: **01.03.2016 up to 15.00 hours.**
3. **Tenderers should ensure that the tender is received before the date and time specified above.**
4. Tenderer should fill in all the relevant blanks and put his signature on the relevant places as indicated below:
 - a. Letter from Contractor to Chief Engineer
 - b. Appendix to the “Conditions of Contract”
 - c. Appendix to the “General Instructions to the Contractors”
 - d. Last page of the General Preambles to Schedule of Quantities
 - e. Every page of schedule of quantities and general summary.
5. The tender should be filled as follows:
 - a. The **“Percentage Rate”** column to be legibly filled in ink in both **FIGURES AND WORDS.**
 - b. All corrections to be initialed.

- c. Each page of the Schedule of Quantities and the **“General Summary”** is to be signed by the Contractor.
- d. **Tenderer should note that he is to quote percentage below/above/at par in the “General Summary” page of Schedule of Quantities only. The percentage rate quoted elsewhere in the tender shall not be considered and the tender shall be rejected summarily.**
6. No alterations or additions are to be made by the tenderer to the text or the Schedule of these tender papers. Any tenderer who proposes any alterations to any of the condition/s laid down or which proposes any other conditions of any description whatsoever is liable to be rejected.
7. The tenderer is required to check the numbers of the pages and should any be found missing or in duplicate, or the figure or writing indistinct, he must inform the Chief Engineer at once and have the same rectified. Should the tenderer be in doubt about the precise meaning of any item or figure, for any reason whatsoever, he must inform Chief Engineer in order that the correct meaning may be decided upon before the date for the submission of the tender. Similarly if there is/are any ambiguities noticed in any of the tender clauses /Item specifications etc given at different places in tender document, the Tenderer should bring all such ambiguities to the notice of Dy Chief Engineer (I/C) before submission of tender for necessary rectification.
8. No liability whatsoever will be admitted nor claim allowed in respect of errors in the submitted tender due to missing / duplicate pages, indistinct writing or any other error in the tender documents which should have been rectified in the manner described above.
9. Performa of Articles of Agreement (Annexure – ‘A’) should not be filled in by the tenderer. While the contract shall be deemed to have come into existence on issue of letter of acceptance to the successful tenderer, formal agreement shall be signed thereafter with the successful tenderer on non-judicial stamp paper of requisite value as per the Performa of Articles of Agreement.
10. **EMD:** Earnest Money Deposit of **Rs. 16,95,900/-** accompanying the tender will be accepted in the form of **“CROSSED DEMAND DRAFT” / Pay Order / Bankers Cheque** of any of the Nationalized Banks / Approved Scheduled Banks drawn in favour of the **“LIFE INSURANCE CORPORATION OF INDIA”** payable at **KANPUR** only, and not in favour of any other Authority or location.

The **Earnest Money Deposit** can also be submitted **partly** in the form of **Bank Guarantee**. In such cases, 50% of EMD or Rs. 20 Lakhs whichever is less (**i.e. Rs. 8,47,950/-**) shall be in the form of DD/Pay Order/Bankers Cheque and balance amount (**i.e. Rs. 8,47,950/-**) in the form of Bank Guarantee in the prescribed format (provided in Part-I of Tender Document). The bank guarantee shall be issued by any Nationalized or Scheduled Bank and should have validity of 6 months from the last date specified for submission of tender.

11. **The tender shall be accompanied by a certified true copy of Power of Attorney in favour of the signatory to the tender documents. If the tender is submitted on behalf of a firm, it must be signed either by all partners or person holding a valid power of attorney from all partners constituting the firm. The person signing the tender on behalf of another partner(s) or on behalf of a firm on Company shall attach with the Tender a proper Power of Attorney duly executed in his favour by such other person(s) or by all the partners in accordance with the Constitution of the Company / Articles of Association, stating that he has the authority to sign on behalf of such other person(s) of the firm or the Company as the case may be, in all matters pertaining to the contract including the Arbitration Clause.**
12. Contractors are warned that Cash, or encashable Cheque, or Insurance Guarantee, or Fixed Deposit receipt in lieu of the aforementioned form of Earnest Money remittance will not be accepted.
13. The percentage rates mentioned in the tender copy will be taken as bonafide. When the percentage rates in figures and words are at variance, the percentage rate corresponding to the amount shall be taken as correct. In all other cases percentage rate in words will be taken in precedence over the rate in figures.
14. Tenders containing errors are liable to be considered non-bonafide at the discretion of the Chief Engineer
15. **Tenderer should note that tender should remain open for consideration for a minimum period of SIX MONTHS from the date fixed for the receipt of tenders.**

16. The Life Insurance Corporation of India reserves the right to accept any tender or to accept tenders in part; to reject any or all tenders without assigning reasons thereof.
17. Contractors should fill in "PERCENTAGE RATE" legibly in ink in both FIGURES and WORDS. Amounts mentioned in words shall be prefixed and suffixed by "Rs." and "only" respectively. Tenders containing the percentage rates only in figures are liable to be considered non-bonafide at the discretion of the Chief Engineer and entail forfeiture of Earnest Money Deposit.
18. If on check there are differences between the percentages rate given by the contractor in words and figures or in the amount worked out /amount quoted by him, the following shall be considered.
 - a) When there is a difference between the percentage rates in figures and in words, the percentage rates which correspond to the amounts worked out by the contractor, shall be taken as correct.
 - b) When the amount worked out by the contractor does not correspond with the percentage rate written either in figures or in words, then the percent rate quoted by the contractor in words shall be taken as correct.
 - c) When the percentage rate quoted by the contractor in figures and in words tallied but the amount is not worked out correctly, the percentage rate quoted by the contractor shall be taken as correct and not the amount.
 - d) In the event nothing is quoted (at per/above/below) by the contractor, the tender is considered as non-bonafide.
 - e) **The Tenderers are advised to not to quote varying percentage rates for individual items / Trades etc. The percentage rate quoted shall be on overall estimated cost put in the General Summary of Schedule of Quantities and the same will be applied to all the tender items.**

LIFE INSURANCE CORPORATION OF INDIA
PROCEDURE FOR EVALUATION OF TENDER

1. On the due date and time of opening of Tender the Envelope containing the Tender Fee and “EMD” (Envelop-1) shall be opened first in presence of contractors or accredited representatives who attend.
2. Envelope-2 containing Prequalification Criteria shall be opened of the Tenderers whose Tender Fee and EMD found in order.

Eligibility related documents of Tenderers who have submitted valid Earnest Money Deposit shall be evaluated and the Pre-qualification shall be decided by LIC of India based on the pre-qualification criteria given in the Detailed Tender Notice and the documents submitted by the tenderers.

3. The List of the tenderers pre-qualified for opening of Price Bid shall be published on LIC's Web site. The EMD of the tenderers who doesnot qualify for opening of Price Bid shall be refunded.
4. The details of opening of FINANCIAL BID (Envelop-3) i.e. date, time and venue shall be intimated to the pre-qualified tenderers through mail.
5. The FINANCIAL BID shall be opened on the scheduled date in presence of contractors or accredited representatives who attend.
6. The EMD of unsuccessful Tenderer shall be returned within SEVEN DAYS from the date of opening of FINANCIAL BID.

There shall be a pre-bid meeting with the prospective tenderers on 22.02.2016 at 11.00 Hrs the office of Dy Chief Eninergering (I/C), NCZO, and Kanpur. If there is any change in he date or venue of prre-bid meeting the same shall be notified on LIC's web site.

LIFE INSURANCE CORPORATION OF INDIA
LETTER TO CONTRACTOR FROM CHIEF ENGINEER

To,

Dear Sir / Sirs,

SUB: TENDER FOR BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEYPUR VARANASI.

- 1) The tender should be submitted to the Dy Chief Engineer (I/C), LIC of India, North Central Zonal Office, Engineering Department, Jeevan Vikas Building, 16/275, Civil Lines, Kanpur 208001 by following the procedures as explained in the "INSTRUCTION IN REGARD TO SUBMISSION OF TENDERS"
- 2) Drawings provided shall form part of the financial bid and the same shall be signed and put along with financial bid. Signed drawings are considered as part of financial bid.
- 3) The sealed tenders containing the details as explained in "Instruction in regard to submission of tenders" will be received at the office of Dy Chief Engineer (I/C), LIC of India, North Central Zonal Office, Engineering Department, Jeevan Vikas Building, 16/275, Civil Lines, Kanpur 208001 on or before 15.00 Hours on 1.03.2016 and Envelope -1 and Envelope-2 of the tender document will be opened on 01.03.2016 At 15.30 hours in presence of contractors or accredited representatives who attend. Tenderer should ensure that their tender is received before the date and time specified as no consideration whatsoever shall be given for postal or any kind of delays. Tenders received late shall be rejected.
- 4) If tender is delivered by hand, tenderer must ensure that the date and time of receipt is endorsed on the tender envelope by the Accounts Officer of the Department approved by the SE / EE (Planning) and thereafter the tender is deposited in the tender box by the tenderer or his representative.
- 5) The Life Insurance Corporation of India does not bind itself to accept the lowest or any tender.

Yours faithfully,

CHIEF ENGINEER

LETTER FROM CONTRACTOR TO CHIEF ENGINEER

Date: _____

To,
The Chief Engineer
Life Insurance Corporation of India
East Central Zonal Office, KANPUR.

SUB: TENDER FOR BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEYPUR VARANASI.

Dear Sir,

1. Having examined and understood the Specifications of the materials for its supply at the site of work as well as for labour for all types of work including specialized work, Conditions of Contract and General Instructions relating to **Part-I** of tender and Schedule of Quantities relating to the above work of **PART II** of the tender and the drawings and other related terms and conditions, amendments etc. and having visited and examined the site of the proposed works and having acquired the requisite information relating thereto as affecting the tender invited by you on behalf of the Life Insurance Corporation of India, I/We, the undersigned hereby offer to construct, execute, complete and maintain the proposed works on Percentage rate basis in strict accordance with the Contract Conditions and Specifications for the sum of Rs _____/(Rupees _____

_____ only) or such other sums as may be ascertained in accordance with the said Conditions.

2. I/We, undertake to complete and deliver the whole of the works within a period as specified in Appendix to the Conditions of Contract from the date of issue of intimation from you that the tender has been accepted and upon receiving possession of the site. **I/We shall make necessary application on behalf of LIC and obtain the electrical load sanction, obtain estimate towards connections charges to be paid towards Electrual connection and obtain the Electrical Connection for the proposed STC building at Varanasi, from the Electricity Authorities. After completion of the proposed construction, I/We shall obtain the Building Completion/occupancy certificate/ Building Use permission from appropriate Authority/Authorities and shall carry out all that necessary to obtain the Building Completion/occupancy certificate/ Building Use permission from appropriate Authority/Authorities. I/We shall also obtain approval from local authority for the water & drainage connection. Our quoted amount is inclusive of delivering all above requirements i.e. obtaining electrical load sanction and**

estimate and Electrical connection from appropriate Authority/Authorities and obtaining Building Completion/occupancy certificate/ Building Use permission from appropriate Authority/Authorities and the approval of water & drainage connection. I/We shall be under the obligation to pay the sum as stated in the Appendix to the Conditions of Contract for every day that the works shall remain incomplete, damages as compensation subject to the Conditions of Contract relating to extension of time.

3. I/We, enclose herewith my/our tender along with **Earnest Money Remittance** of **Rs. (Rupees only)** fully in the form of **CROSSED DEMAND DRAFT/PAY ORDER PAYABLE at KANPUR / partly in the form of Bank Guarantee amounting to Rs..... and balace in he form of DD amounting to Rs.....** I/We, hereby agree that the part of EMD shall be forfeited by the 'Life Insurance Corporation of India' in the event of my/our tender being accepted and I/We fail to execute the Contract when called upon to do so. I/We, note that **EARNEST MONEY REMITTANCE IN FORM OF OTHER THAN CROSSED DEMAND DRAFT/PAY ORDER ON A NATIONALISED/SCHEDULED BANK PAYABLE AT KANPUR/BANK GUARANTEE OF THAT AMOUNT SHALL NOT BE ACCEPTED.**

4. In the event of the tender being accepted, I/We, agree to the retention of my/our EMD as a part of Security Deposit and the balance amount of Security Deposit to be recovered at 7.5% of Gross Value of work done from my / our Running Account Bills. **OR** I/We, agree to furnish a lump sum Security Deposit amounting to Rs. (Rupees only) or two like amount in the form of Bank Guarantee from any Nationalized/Scheduled Bank at as per specimen given in Annexure "B" to Conditions of Contract, within 21 (twenty-one) days of acceptance of tender. We also agree that, if we desires to avail cash option for Security Deposit, and if we have deposted the part of EMD in the from of Bank Guarantee then the amount equal to the amount of Bank Guarantee shall be to deposited by us in the form of Demand Draft/Pay Order drawn in favour of Life Insurance Corporation of India ,payable at KANPUR within 21days of intimation to me/us of acceptance of tender and balance Security Deposit shall be accumulated through deductions from Running Account Bills at 7.5% (maximum) of gross amount of bill.

5. I/We, agree to furnish a lump sum Performance Guarantee amounting to Rs. (Rupees only) in the form of Bank Guarantee from any Nationalized/Scheduled Bank at **KANPUR** as per specimen given in Annexure "C" to Conditions of Contract, within 20 (twenty) days from commencement of work.

6. I/We, note that the Earnest Money Deposit of **Rs.** would be refunded to me/us.

- a. On expiry of the validity of the tender or earlier at the discretion of Chief Engineer in case my/our tender is not accepted and
- b. In case my/our tender is accepted, after I/We, furnish Bank Guarantee as mentioned above.

7. I/We, agree,

a) In case my/our tender is withdrawn before expiry of the validity period or before the issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to LIC, in such case 25% of the EMD will be forfeited by the LIC.

b) In case my/our tender is accepted and the Performance Guarantee is not submitted within the prescribed period or approved extended period, 50% of the EMD will be forfeited automatically without any notice.

Yours faithfully,

(SIGNATURE OF THE CONTRACTOR)

Name and Seal

NAME OF THE PARTNER OF
THE FIRM OR
NAME OF THE PERSON HAVING POWER OF
ATTORNEY TO SIGN THE CONTRACT
(CERTIFIED TRUE COPY OF THE POWER
OF ATTORNEY SHOULD BE ATTACHED)

APPENDIX TO CONDITIONS OF CONTRACT

SUB: TENDER FOR BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEYPUR VARANASI. :

ESTIMATED TENDER AMOUNT

: Rs. 847.92 lakhs

PERIOD FOR COMPLETION

: **18 (Eighteen)** Months

EARNEST MONEY DEPOSIT:

: Rs. 16,95,900/-

Sl.No.	Clause No. of Conditions of Contract.	Description	Remarks
1	11	Minimum requirement of Technical staff ; Recovery for Non employment	a) Graduate Engineer Rs.40, 000.00 per month. b) Diploma Engineer Rs.25, 000.00 per month.
2	13	Date of commencement	1. Either 21 (twenty-one) days from the date of acceptance letter issued to the contractor OR 2. The day on which contractor is instructed to take possession of the site, whichever is earlier.
3	13 & 26	Date of completion	18 (Eighteen) months from the date of commencement
4	19	Liquidated damages	Quantum of liquidated damages 0.5% of contract sum per week subject to a maximum of 7.5% of contract sum.
		Reward for Early Completion	Works completed 3 months in Advance in all respects- 0.5% of Original Contract Amount Works completed less than 3 months in Advance in all respects- 0.1% of Original Contract Amount
5	21	Period of final measurement	60 (sixty) days from the date of completion of the contract.
6	22	Interim certificate	Rs. 47,10,000/-

Sl.No.	Clause No. of Conditions of Contract.	Description	Remarks
7	22	Period of honoring interim certificate (Payment of R.A. Bill)	20 (Twenty) days.
8	22	Period of honoring final certificate. (Payment of Final Bill)	90 days from the date of submission of final bill with details.
9	35	a) Security Deposit b) Performance Guarantee	a) Rs. 20 lakhs plus 2.5% of the estimated tender amount i.e. Rs. 41,19,800.00 (Rupees forty one lakh nineteen thousand eight hundred only) b) In the form of Bank Guarantee amounting to 5% of estimated tender amount i.e. of Rs. 42,39,600.00 (Rupees forty two lakh thirty nine thousand and six hundred only)
10	35	Recovery of Security Deposit	In case of cash option, EMD of successful tenderer shall be retained as part of Security Deposit and balance of Security Deposit shall be recovered from R.A. Bills at 7.5% of Gross amount of bill. (If Security Deposit is paid in the form of Bank Guarantee, no recovery from R.A Bills shall be made and EMD shall be refunded after acceptance of Bank Guarantee). If the tenderer, having paid EMD in form of Bank Guarantee, wants to avail cash option for Security Deposit, then the tenderer has to deposit the amount equal to Bank Guarantee amount in form of Demand Draft/Pay Order drawn in favour of Life Insurance Corporation of India ,payable at KANPUR within 21days of intimation to the contractor of acceptance of tender and balance Security Deposit shall be accumulated through deductions from Running Account Bills at 7.5% (maximum) of gross amount of bill.

11	37	Interest on Lump sum Advance	10.00 % per annum(Simple Interest)
12	17.5	Contractor's All Risk Policy inclusive of Third Party Liability	Contractor's All Risk (CAR) Policy of full contract value with rider for Third Party Insurance for amount insured not less than 5 % of contract value.
13	17.6	Workman's Compensation Policy	As per requirement of prevalent Laws. But the number of workers covered shall not be less than the numbers mentioned in Labour License and the annual wages covered shall not be less than 10% of contract value.
14	17.9	In default of the Contractor insuring	Insurance Policies (Workmen's Compensation and 3rd party) if not extended on time. Engineering Accounts section shall proceed with extension of this Insurance policies and apart from financial expenses, LIC shall deduct penalty amounting to Rs.10, 000/- for each extension of such policy
15	32 of General Instructions To Contractors.	Taxes, Duties, Levies And Deduction At Source.	The rates quoted shall be exclusive of Service Tax. The Service Tax shall be reimbursed to the Contractor on production of Proof of the payment is produced and / or shall be paid in full or part to Govt. authority as per the Financial Act amended from time to time.

(SIGNATURE OF THE CONTRACTOR)

NO CLAIM CERTIFICATE CUM RECEIPT

(To be given on Contractor's letterhead)

"Received Rupees _____

(Rupees _____) being the amount against my/our final
bill dated _____ for _____ (Name of Work) in full and final settlement of bill.

CONTRACTOR

(Signature of Contractor on Revenue stamp)

Rubber stamp/seal of the contractor /company

APPENDIX TO GENERAL INSTRUCTIONS TO CONTRACTORS

CLAUSE NO.2 OF CONDITIONS OF CONTRACT:

Name and Location of the proposed work:

Name of Proposed work:

BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEY PUR VARANASI.

LOCATION: Plot No 5 & 6 Pandeypur Yojana, Jawaharnagar, Varanasi. (U.P.)

GENERAL OUTLINE OF STRUCTURE: The Building consists of Stilt floor plus four upper floors with covered area on each floor about 580 sqmt. The total Built up area of the proposed construction is about 2789.40 Sqmt. The floorwise covered / Built up area is as follows:

Sl no	FLOOR	Approximate BUA/Covered Area in Sqmt.
1	Stilt floor	615.64
2	Ground Floor	553.10
3	First Floor	587.65
4	Second Floor	576.93
5	Third Floor	576.93
6	Mumty /Lift Machine (Terrace Floor)	82.04

(SIGNATURE OF THE CONTRACTOR)

Amendment to “Conditions of Contract”

Amendment to Clause no 1.3

The clause No 1.3 shall be read as : “Chief Engineer / Dy Chief Engineer (I/C) shall mean the person occupying the post of the head of the Zonal Engineering Department of the Corporation.

Note : As regard this contract is concerned, the Dy Chief Engineer (I/C) assumes all the powers & authorities as being enjoyed by the Chief Engineer. Therefore irrespective of whatever is specified in the Tender Documents, the decisions, orders, instructions, approvals etc given by the Dy Chief Engineer (I/C) shall be deemed as given by the Chief Engineer.

SPECIAL CONDITIONS:

1. PHOTOGRAPHS OF THE BUILDING

- 1.1 The contractor shall submit 3 sets of the colour photoprints prints with softcopy of the photographs size 4" x 6" to LIC of India on the following stages:
- a. The plot before the start of construction showing any localized depression, rock outcrop, if any and any other things which affects construction.
 - b. Excavated pits for foundation showing type of soil/rock.
 - c. Foundation work, reinforcement, concreting and curing. Columns (floor wise) reinforcements, shuttering, concreting and curing.
 - d. Shuttering and reinforcement details floor wise before laying of concrete. Photographs during concreting and after laying of concrete including curing.
 - e. Completion stage of masonry work before plastering.
 - f. External filling and compaction process.
 - g. Water proofing of terrace and testing. Toilet water proofing, testing of internal water supply line before concealing the same.
 - h. After plastering but before painting.
 - i. Completed building before handing over the building.

The photographs can also be submitted in CD / DVD/Pen Drive in lieu of printed photographs.

- 1.2 One or more photographs shall be taken to have complete clear views of the project as directed by Corporation's Engineer. The further stage of work shall proceed only on confirmation of such photographs (as mentioned above clause 1.1) seen by LIC Engineers (concerned Executive Engineer/Superintending Engineer and Dy.Chief Engineer under whose jurisdiction the project comes) and a written site instructions obtained in this regard. The concerned Engineers shall also put up to the Chief Engineer the said stage wise photographs and confirmation conveyed to the contractor.
- 1.3 The quoted rates shall include for the same and no extra is payable to contractor on this account.

2. TESTING OF MATERIALS

During the progress of work, tests as prescribed below for various materials of construction shall be conducted as per the frequency noted in the table below. Contractor's attention is also drawn to Clause 9 of Conditions of Contract as well as Clause 9 of General Preambles to Schedule of Quantities.

Following charts to be followed for the frequency of tests:

TABLE-A

Sl. No.	Materials	Test	Frequency
1.	Water	Chemicals & Physical properties for water	One test per source before commencement of work
2.	Sand (Fine Aggregates)	a) Slit content(field test) b) Gradation c) Bulking (Field test)	This is a routine test and should be carried out for sand for each consignment. Every 45 Cum or part thereof or whenever moisture content is doubtful.
3.	Stone (Coarse Aggregate)	a) Aggregate crushing value b) Gradation	One in beginning of stacking of materials thereafter for every change of source. Every consignment.
4.	Cement	a) Initial and final setting time b) Compressive strength	One in beginning of stacking of materials thereafter for every change of source. One test for 100 tones or part there of and for every change of brand of cement if the cement is used for structural work
5.	Steel	1. Tensile strength a) Ultimate tensile stress b) Yield stress c) % Elongation	One test per category for every consignment used in work.
6.	Brick	a) Water absorption b) Efflorescence c) Compressive strength	One test for every 200000 Nos. or part there of and for every change of brand (set of 5 bricks)
7.	Timber	a) Moisture content b) Specific gravity c) Species in sample of teak wood	One test for every 30cum or part thereof.
8.	Anodized coating of aluminum	Thickness of Anodic Coating.	One Test for material costing Rs.8.00 Lac or part thereof.
9.	Marble mosaic tiles	a) Wet Transverse Strength b) Water Absorption c) Abrasion Test	One test for every 1 lakh tiles or part thereof.
10.	Flush Door	End Immersion Knife Adhesion	Destructive test based on no. of shutter. 1-100 one test 101-200 two test 201-500 three test 500 & above four test

Sl. No.	Materials	Test	Frequency
11.	Ceramic Tiles / Vitrified Tiles	Water absorption Crazing Test	One test for every 5000 nos. or part thereof.
12.	Marble	Moisture Absorption test	One test for every 800 sq.mt. or part thereof.
13.	Panel Door Shutter	a) Physical Test b) Glue Adhesion Test	One test from each lot. One test from each lot.
14.	Particle Board	a) Identification (Physical verification) b) Dimensional Tolerance	One test from each lot. One test from each lot.
15.	Sand Stone	Water Absorption	Frequency of test as specified by CPWD

- Electricity Load Sanction:** The contractor shall submit necessary application to the Electricity authority on behalf of LIC , obtain electricity load sanction , estimate towards connection charges payable and obtain electrical connection from the Electricity supply Authority/Authorities as appropriate for the proposed STC Building at Varanasi wel before virtual completion of work. The quoted tender amount shall be inclusive of all expenses for carrying out this job. However, any official fees required to be paid shall be borne by LIC of India.
- The contractor shall obtain the Building Completion / occupation certificate / Building Use Permission and shall carryout all that necessary to obtain the Building Completion / occupation certificate / Building Use Permission. The quoted tender amount shall be inclusive of expenses for obtaining the Building Completion / occupation certificate (O.C.) / Building Use Permission certificate and other allied works relating to obtaining Building Completion (B.C.)/ occupation certificate / Building Use Permission. However, any official fees required to be paid shall be borne by LIC of India. If required the contractor should hire the services of Licensed Architect/Engineer/Plumber etc at his own expenses for preparation of necessary completion drawings/ reports and submitting proposals to the Local authority/authorites for obtaining the B.C.C. / O.C. These expenses also to be included in the quoted rates.
- Water & Drainage Connection:** The contractor shall obtain approval for Water & Drainage Connecction from local Authority/Authorities as appropriate for the construction of the said job at the said locality. The quoted tender amount shall

be inclusive of all expenses for carrying out this job. However, any official fees required to be paid shall be borne by LIC of India.

6. During construction of the building the entire premises shall be covered by protective measures to ensure pollution free atmosphere in the surrounding and inconvenience to general public should not be made by construction.
7. Please note that the Virtual Completion of the work shall be considered only after obtaining Electrical Connections, Lift License, water & drainage connection, Fire NOC and finally the Building Completion / Occupancy permission. All this is to be done within the specified time limit for completion of work.
8. The contractor has to make his own arrangement for water to be used for construction work by following the rules, regulation and directives of authorities. The water has to be tested to determine its suitability for concreting and construction work.

(SIGNATURE OF THE CONTRACTOR)

GENERAL PREAMBLES TO SCHEDULE OF QUANTITIES

These preambles apply to all the sections of the "Schedule of Quantities".

1. RATE TO COVER:

- 1.1 The rates quoted by the Contractor shall be held to include for providing and fixing, all conveyance and delivery, loading & unloading, carrying in, storing, hoisting, all labour, setting, fitting and fixing in position, making straight, cutting, waste, return of packing and all materials and labour and everything else necessary for the proper completion of each item of work to the approval of Corporation's Engineer and for Establishment Charges, overheads and profits. The Contractor shall provide at his expense all labour, materials and things required by the Corporation's Engineer for testing and measuring the work, for weighing, testing the efficiency of any portion of the work, all planking, gangways etc. necessary for affording access to every part of the work except where specifically stated otherwise.
- 1.2 The Contractor should also cover in his rates for the method of work, cost of materials, labour etc., to comply with the "Trade Specifications", General Instructions to Contractor", "Conditions of Contract", "Special Conditions", (if any), and all documents of this contract.
- 1.3 All the materials or procedures or specifications for work, unless otherwise stated, shall conform to the current Indian Standard whether or not specific mention is made thereof. The Contractor shall be responsible for and shall replace or make good at his own expense, any materials lost or damaged, or of quality not approved, temporarily disturbed roads, pavements, approaches, gates, walls or any such dismantling carried out to execute the work.
- 1.4 All rates quoted shall include for Supplying and fixing although the same may not have been mentioned in the item of the Schedule of Quantities. Words "Providing and Fixing where used shall have same meaning as "Supplying and Fixing".
- 1.5 **Rates quoted shall include for hoisting to any height and the work at all levels and lifting of materials shall not form any criterion for any extra claims, except where otherwise specified.**

2. ANCILLARY WORKS:

- 2.1 The Contractor shall have to carry out all ancillary and connected work within and near vicinity of the plot of the proposed work and inside the Building if ordered to do

so by the Chief Engineer at the rates quoted in the Schedule of Quantities, at any time during the currency of this Contract including extension of time, if any granted.

3. PRICE FLUCTUATION / VARIATION:

- 3.1 Rates quoted by the Contractor shall be firm throughout the currency of the Contract including extensions of time, if any granted. No price adjustment due to variation in cost of materials or labour or any variation under any State or Central Legislation or any other reason whatsoever shall be allowed, except as stated in relevant clauses below with regard to variation in price on materials & labour and price fluctuation in Cement & Steel.

4. CEMENT:

CONTRACTOR'S QUOTED RATES:

- 4.1 Contractor shall quote his rates for various relevant items in the tender on the basis of provisions of this clause detailed hereunder and on the basis of the price of cement at site of work as mentioned in Annexure "P" attached herewith (hereinafter called the Basic Price of Cement).

APPROVAL OF SOURCE OF PURCHASE AND PRICE:

- 4.2 Contractor shall purchase cement from approved reputed cement manufacturers such as ACC, UltraTech, J. P. Rewa, Vikram, Shree Cement, Birla Jute, CCI, Madras cement, Chettinad cement, India cement etc. as approved by Ministry of Industry, Govt. of India and having license to use ISI Certification mark for their products and from C&F agents and authorized dealers (with dealership certificate). Cement shall be Ordinary Portland Cement 33 / 43 Grade of fresh manufacture conforming to IS: 269/ IS: 8112 respectively; Portland Pozzolana Cement: IS: 1489 (Part 2): 1991; Portland Slag Cement: IS: 455 (1989) or relevant Indian Standards (latest revision). **Cement shall be purchased and transported to the work site by the contractor in bulk quantity required to achieve desired progress in next 3 months, from the above source of purchase (including brand of cement). At the time of starting the work, the request for approval shall be submitted within 15 days of receipt of tender acceptance letter. The contractor shall intimate the EE/SE the quantity of cement being procured, with the names, full addresses and telephone numbers of cement suppliers. For subsequent approvals the contractors shall approach Employer's Engineer at site at least 20 days in advance of the desired date of delivery of cement. The contractor shall submit his request for the approval through Employer's Engineer at site with one copy of the letter to EE/SE. The**

contractor's request letter shall mention the quantity of cement to be/ being purchased and also the quantity of cement in stock at site on the date of submitting the request.

BASIC PRICE OF CEMENT:

- 4.3 The basic price of cement stated in Annexure 'P' is inclusive of all costs upto the site of work, including purchase price, all levies and duties including excise duty, sales tax, octroi / town duty, transportation charges including loading and unloading charges at all points (except unloading at site), transit insurance and any other expenses (*expenditure*) not mentioned above but required etc. and shall be included by the contractor in his quoted rates. All other costs such as unloading the cement at site, handling, stacking, storage, providing watch and ward arrangements, loss due to pilferage, theft, damages if any including cement which may become unfit for consumption due to prolonged storage or due to rains etc. shall be to contractor's account and shall be included by the contractor in rates quoted in the tender.

QUALITY OF CEMENT:

- 4.4 The contractor shall satisfy himself that the cement arriving at site is ordinary portland cement conforming to the requirement of IS: 269/8112 for 33 / 43 Grade respectively; Portland Pozzolana Cement: IS: 1489 (Part 2); Portland Slag Cement: IS: 455 (1989) or relevant Indian Standard and shall procure Manufacturer's Certificate to this effect. In case the contractor has any doubt regarding the quality of cement, it is up to him to have it tested at his own cost and make sure before incorporation in the works that the cement is of right quality. Each consignment of cement supplied should have Test Certificate of the Manufacturer.

PAYMENT DUE TO VARIATION ON PRICE OF CEMENT

- 4.5 If after submission of the tender, the price of Cement specified in Annexure "P" increases/ decreases beyond the price(s) prevailing at the time of the last stipulated date for receipt of tenders including Tender opening extensions, if any for the work, then the variation in amount shall accordingly be paid and that any such variations shall be effected only for stipulated period of Contract including the justified contract period extended without imposition of liquidated clauses.
- However for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of stipulated date of completion or as prevailing for the period under consideration, whichever is less. In case of extension granted with imposition of liquidated damage, no price variation shall be allowed during extended period but recovery due to price variation shall be effected.

The increase/decrease in prices of cement, shall be determined by the Price indices as published by Economic Advisor to Government of India, Ministry of Commerce and Industry and base price for cement, as indicated in Annexure 'P' as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration.

The amount will be worked out as per the formula given below for individual material:-

Adjustment for component of cement.

$$V = P \times Q \times \frac{CI - Clo}{Clo}$$

Where,

V = Variation in Cement cost i.e. increase or decrease in the amount to be paid or recovered.

P = Base Price of cement as indicated in Annexure 'P' valid at the time of the last stipulated date of receipt of tender including extensions, if any.

Q = Quantity of Cement consumed in the works since previous bill.

Clo = All India Whole Sale Price index for cement, as issued by Office of the Economic Advisor, Dept. of Industrial Policy & Promotion under Ministry of Commerce and Industry, Government of India as valid on the last stipulated date of receipt of tenders including extensions, if any.

CI = All India Whole Sale Price index for cement, as issued by Office of the Economic Advisor, Dept. of Industrial Policy & Promotion under Ministry of Commerce and Industry, Government of India for period under consideration.

CONTRACTOR'S OTHER RESPONSIBILITIES / LIABILITIES:

4.6

(i) Contractor shall comply with all requirements/procedures etc. that may be stipulated if any, by Government /controlling authority from time to time and accordingly obtain the requisite supply of cement for the work.

(ii) Even though the source of cement is approved by the employer but the employer shall not be responsible for quality of cement or any loss/ damage in transit, delays due to non-availability of cement with the factory / C&F agents /authorized dealers and/or required transport etc. The contractor shall not be entitled to make any claim and Extension of time or Cost on the employer on such grounds.

(iii) Cement shall be kept in custody of the contractor at site. The contractor shall be responsible for the safety of the cement by providing watch and ward as is necessary

and directed. In case any cement is damaged, unaccounted for or lost due to pilferage or any other reason either in transit or at site, the accountability will be with contractor. If any quantity of cement is found in excess of requirement or left over after completion of the work, same shall not be removed from site without the written permission of the Engineer-in-charge.

(iv) The contractor shall maintain a stock register at the site and shall record therein the receipt and consumption of cement, the same day it is received or consumed. He shall also get the entries in the register for receipt and consumption of cement countersigned by Employer's Site Engineer, on the same day cement is received or consumed.

(v) Pozzolana/ Slag cement shall be used only if specifically permitted by the Chief Engineer. The Chief Engineer reserves the right not to allow the use of Pozzolana/ Slag cement. In case Pozzolana / Slag cement is used, the Contractor shall have to observe increased periods for striking form and additional period of one week for curing for which no claim shall be entertained.

(vi) The cement shall be got tested by the Engineer-in-charge of employer as and when new consignment comes and there is change in manufacturer's brand. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor/Department in the manner indicated below:-

(a) By the contractor, if the results show that the cement does not conform to relevant BIS codes.

(b) By the Department, if the results show that the cement conforms to relevant BIS codes.

(vii) The contractor is allowed to use reasonable quantity from the cement brought at site for constructing temporary water storage tank to store water for construction, site office and godowns at site. The quantity used for this purpose shall not be account for payment due to price variation defined elsewhere.

(viii) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained. The theoretical consumption of cement shall be worked out as per procedure prescribed elsewhere in the contract. In case the cement consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment shall be made.

(ix) If the work executed is not conforming to acceptable standard as prescribed in the tender elsewhere, the work will not be considered for payment.

The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

Chief Engineer may change the brand of Cement depending upon availability in local market, if needed. Instructions in this respect can be issued by them at regular intervals. The name of manufacturers should be finalized after taking into consideration the suggestions of contractors during pre bid meeting, if any.

Similar conditions for cement of other types like slag cement etc. may be incorporated wherever required by the authority by providing for relevant BIS Codes, suitable brands of cement and instructions issued by the department.

MILD STEEL BARS AND HIGH STRENGTH DEFORMED BARS FOR REINFORCEMENT IN R.C.C. WORK TO BE SUPPLIED BY CONTRACTOR:

5. CONTRACTOR'S QUOTED RATES:

5.1 Contractor shall quote his rates for relevant items in the tender on the basis of provisions of this clause detailed hereunder and on the basis of price of steel at site of work as mentioned in Annexure "P" attached herewith (hereinafter called the Basic Price of Steel).

5.2 APPROVAL OF SOURCE OF PURCHASE

- (1) The contractor shall procure TMT bars of Fe415/ Fe500 grade (the grade to be procured is to be specified) from primary producers such as SAIL or TISCO or RINL as approved by Ministry of Steel. The TMT bars procured from primary producers shall conform to manufacturer's specifications. In case of non-availability of steel from primary producers, the approving authority may permit use of TMT reinforcement bars procured from secondary producers. In such cases following action is to be followed:**
- (a) The grade of the steel such as Fe415/Fe500 or other grade to be procured is to be specified as per BIS 1786 /2008.**
 - (b) The secondary producers must have valid BIS license to produce HSD bars conforming to IS 1786: 2008. In addition to BIS license, the secondary producer**

- must have valid license from either of the firms Tempcore, Thermex, Evcon Turbo & Turbo Quench to produce TMT Bars.
- (c) The TMT bars procured from primary producers shall conform to manufacture's specifications.
- (d) The TMT bars procured from secondary producers shall conform to the specifications as laid by Tempcore, Thermex, Evcon Turbo & Turbo Quench as the case may be.
- (e) TMT bars procured either from primary producers or secondary producers, the specifications shall meet the provisions of IS 1786 : 2008/2012 pertaining to Fe415D or Fe 500D grade of steel as specified in the tender (while preparing Tender the grade of the steel to be specified).
- (2) The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
- (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. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined under para (1)(d) & (1)(e) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in-Charge to do so.
- (4) The steel reinforcement bars shall be brought to the site in bulk supply required to achieve desired progress of the work in next 3 months, from the above source of purchase (including brand of steel) as decided by the Engineer-in-charge. At the time of starting the work, the request for approval shall be submitted within 15 days of receipt of tender acceptance letter. The contractor shall intimate the EE/SE the quantity of steel being procured, with the names, full addresses, and telephone numbers of steel suppliers. For subsequent approvals the contractors shall approach Employer's Engineer at site at least 20 days in advance of the desired date of delivery of steel. The contractor shall submit his request for the approval through Employer's Engineer at site with one copy of the letter to EE/SE. The contractor's request letter shall mention the quantity of steel to be/ being purchased and also the quantity of steel in stock at site on the date of submitting the request.**
- (5) The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

- (6) For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified in the tender.

BASIC PRICE OF STEEL:

- 5.3 The basic price of steel stated in Annexure 'P' is inclusive of all costs upto the site of work, including purchase price, all levies and duties including excise duty, sales tax, octroi / town duty, transportation charges including loading and unloading charges at all points (except unloading at site), transit insurance, and any other expenses (*expenditure*) not mentioned above but required etc. and shall be included by the contractor in his quoted rates. All other costs such as unloading the steel at site, handling, stacking, storage, providing watch and ward arrangements, loss due to pilferage, thefts or any other reasons shall also be to contractor's account and shall be included by the contractor in rates quoted in the tender.

QUALITY OF STEEL:

- 5.4 The contractor shall satisfy himself that the steel arriving at site is TMT bars of Fe415/ Fe500 grade as per BIS 1786-2008/ 2012 or other grade bars procured either from primary producers or secondary producers, the specifications shall meet the provisions of IS 1786 : 2008/ 2012 pertaining to Fe 415D or Fe 500D grade of steel as specified in the tender and shall be supported by test certificate from the suppliers. In case the contractor has any doubt regarding the quality of steel, it is up to him to have it tested at his own cost and make sure before incorporation in the works that the steel is of right quality. Each consignment of steel supplied should have Test Certificate of the Manufacturer.

CONTRACTOR'S OTHER RESPONSIBILITIES/LIABILITIES

- (i) Contractor shall comply with all requirements/procedures etc. that may be stipulated if any, by Government /controlling authority from time to time and accordingly obtain the requisite supply of steel for the work.
- (ii) Even if the source of steel is approved by the employer, the employer shall not be responsible for quality of steel, correctness of diameter/ size or any loss /damage in transit, delays due to non-availability of steel with the manufacturer/suppliers and/or required transport etc. The contractor shall not be entitled to make any claim & Extension of Time or Cost on the employer on such grounds.

- (iii) The contractor shall be responsible for proper storing arrangement at site. Steel shall be kept in custody of the contractor at site. The contractor shall be responsible for the safety of the steel by providing watch and ward as is necessary and directed. In case any steel is damaged, unaccounted for or lost due to pilferage or any other reasons either in transit or at site, the accountability will be with contractor. If any quantity of steel is found in excess of requirement or left over after completion of the work, same shall not be removed from site without the written permission of the Engineer-in-charge.
- (iv) **The contractor shall maintain a stock register at the site and shall record therein the receipt and consumption of steel (category wise), the same day it is received or consumed. He shall also get the entries in the register for receipt and consumption of steel countersigned by Employer's Site Engineer, on the same day steel is received or consumed.**
- (v) The wastage shall be to contractor's account and shall be taken away by the contractors after obtaining written permission from the **Engineer-in-charge** and the rates quoted shall allow for the same.
- (vi) The payment of steel reinforcement shall be made on weight worked out on the basis of measurement of lengths of various categories as incorporated in the work and sectional weights mentioned in tender.
- (vii) The contractor shall obtain a test certificate from the manufacturer for the lot of steel purchased for the work. The employer's site Engineer may also order testing of steel when new consignment comes and / or there is change in manufacturer's brand, by the contractor before allowing its use in the work irrespective of the test certificate and in such case the contractor shall supply free of charge the steel required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor/Department in the manner indicated below but not any other incidental expenses for arranging the testing, which shall be to contractor's account and included in quoted rates:-
 - a. By the contractor, if the results show that the steel does not conform to relevant BIS codes.
 - b. By the Department, if the results show that the steel conforms to relevant BIS codes.
- (viii) The actual issue and consumption of steel on work shall be regulated and proper accounts maintained. The theoretical consumption of steel shall be

worked out as per procedure prescribed elsewhere in the contract. In case the steel consumption is less than theoretical consumption including permissible variation, recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment shall be made.

- (ix) The substitution of any category of steel shown in drawing with any other category of steel shall be done only if permitted by the EE/SE in writing.
- (x) The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

6.0 PAYMENT DUE TO VARIATION IN PRICE OF STEEL

If after submission of the tender, the price of Steel specified in Annexure "P" increases/ decreases beyond the price(s) prevailing at the time of the last stipulated date for receipt of tenders including Tender opening extensions, if any for the work, then the variation in amount shall accordingly be paid and that any such variations shall be effected only for stipulated period of Contract including the justified contract period extended without imposition of liquidated clauses.

However, for work done/during the justified period extended as above, it will be limited to indices prevailing at the time of stipulated date of completion or as prevailing for the period under consideration, whichever is less. If the extension is granted with imposition of liquidated damage, no price variation shall be paid but recovery due to price variation shall be effected.

The increase/decrease in prices of steel, shall be determined by the Price indices as published by Economic Advisor to Government of India, Ministry of Steel and base price for steel, as indicated in Annexure 'P' as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration.

The amount will be worked out as per the formula given below for individual material:-

Adjustment for component of steel.

$$V = P \times Q \times \frac{CI - C_{lo}}{C_{lo}}$$

Where,

V = Variation in Steel cost i.e. increase or decrease in the amount to be paid or recovered.

P = Base Price of steel as indicated in Annexure 'P' valid at the time of the last stipulated date of receipt of tender including extensions, if any.

Q = Quantity of Steel consumed in the worksite i.e. as measured and recorded since previous bill. Wastage if any, to be on contractor's account.

C_{lo} = All India Whole Sale Price index for steel, as issued by Office of the Economic Advisor, Dept. of Industrial Policy & Promotion under Ministry of Commerce and Industry,

Government of India as valid on the last stipulated date of receipt of tenders including extensions, if any.

CI = All India Whole Sale Price index for steel, as issued by Office of the Economic Advisor, Dept. of Industrial Policy & Promotion under Ministry of Commerce and Industry, Government of India for period under consideration.

6. WASTAGE OF CEMENT AND STEEL:

6.1 The wastage of Cement and Steel shall be to the contractor's Account and the rates quoted shall allow for the same.

7. BALANCE STOCK OF CEMENT / STEEL ON COMPLETION OF JOB:

7.1 Irrespective of what is mentioned anywhere else in this tender the surplus stock of Cement/Steel remaining at the site on completion of work, shall be the property of the Contractor. However, he shall remove the surplus stock only after furnishing the necessary details of such stock in writing to the Corporation's Engineer who shall give approval after satisfying himself that the amount advanced for the above stock has been fully recovered.

8. STEEL OTHER THAN USED FOR REINFORCEMENT:

8.1 Rolled steel sections such as angles, joists, channels, flats etc. and mild steel used for M.S. Grills, railing, gates and M.S. Plates etc., shall be procured by the Contractor and Annexure "P" will not apply for cost of these items.

9. TESTING OF MATERIALS INCLUDING CEMENT AND STEEL:

9.1 Testing of all materials including cement & steel during the progress of work shall be as per frequency given in Table A, clause 2 of Special Conditions.

9.2 Contractor shall facilitate testing of materials viz, cement, steel, cubes and any other material as per the frequency/sampling mentioned in Table-A, clause-2 of Special conditions. Contractor shall also facilitate testing of any material to be incorporated in work even if it is not specifically mentioned. The testing charge against invoice shall be directly remitted by the Corporation to the test house. If the material fails to conform to the Standards (BIS), the test charges shall be recovered from Contractor's bill.

9.3 For all other materials listed in Special conditions, expenses towards testing shall be borne by LIC. If the material fails to conform to the Standards (BIS), the test charge shall be recovered from Contractor's bill.

9.4 The Corporation's Engineer may get tested any material to be incorporated in work even if it is not specifically mentioned. In all such cases,

testing charges will be borne by LIC. If the material fails to conform to the Standards (BIS), the test charges shall be recovered from Contractor's bill.

9.5 For all tests, incidental charges such as cutting, loading, unloading, casting wherever applicable such as mortar briquettes/cubes and facilitating in transportation including materials required for testing shall be borne by the contractor.

Above stipulations (9.1, 9.2, 9.3, 9.4 and 9.5) supersede any other conditions /stipulations pertaining to testing of materials mentioned elsewhere in this tender.

10. "PRINCIPAL MAKE/S OR OTHER EQUAL AND APPROVED" FOR MATERIALS / PRODUCTS:

- 10.1 The Contractor shall note that materials having "ISI" monogram shall primarily be used in the work. If in the tender "Certain Principal Make / Makes or other equal and approved of any material / Product is mentioned in any item or Trade Preambles relating to the particular items in its respective Trade Schedule, the Contractor shall have to use the Principal Make/Makes specified in the relevant item or the trade Preambles. In case the specified particular Principal make / makes of the materials product is/are not readily available, the Contractor shall take prior permission and approval of the Chief Engineer in writing before use of the alternative equivalent make of the Material / Product.
- 10.2 All principal makes specified for any item shall be treated at par as per the accepted quoted rate.
- 10.3 Use of the make other than the Principal Make/Makes (which shall be treated as an Equivalent make) shall be at the discretion of the Chief Engineer and such Make/Makes shall be used after the approval of the Chief Engineer.
- 10.4 In such cases the Contractor will not be paid any extra payment over the accepted quoted rate in any case. However if it is ascertained that the price of approved Equivalent Make or the Material/product is lower than that for the Principal Make/Makes of the same material / product the difference of the price shall be payable by the contractor to LIC. Such difference of price shall be suitably decided by the Chief Engineer whose decision shall be final and binding to the Contractor in this regard.

11. ADJUSTMENT IN PRICES OF MATERIALS AND LABOUR (OTHER THAN CEMENT & STEEL):

- 11.1 Adjustment in price of material, labour shall apply to original civil work for construction of building which may include piling, plumbing & sanitary work, electrical installations etc and which shall have a stipulated completion period of more than six months.
- 11.2 Adjustment in prices of material & labour shall be allowed on the basis of clause- 11.6 subject to the condition given below.
- 11.3 Adjustment shall be made only for tender items and deviated items for the stipulated contract period.

11.4 & 11.5

In case of extension of time, the escalation is paid as follows:

- a) When there is authorized extension i.e. no imposition of Liquidated Damage, escalation may be paid for the extended period with prevailing index.
- b) Extension granted but with imposition of Liquidated damages:- The escalation may be paid by considering index as that prevailing on scheduled date of completion or that prevailing on the date of billing during the extended period of contract whichever is lower .
- c) Extension granted due to failure on the part of the contractor but due to reasons beyond his control – The Department has taken a lenient view for not imposing Liquidated Damages, no escalation shall be paid whatsoever after scheduled date of completion.

ADJUSTMENT OF MATERIALS:

- 11.6 For the purpose of adjustment in price of materials the component shall be 60% of the value of work done up to a given stage. While computing the adjustment, the cost of cement, steel, Ready Mixed Concrete (RMC) and other materials likes Granite/ Marble Stone Slabs, Lime Stone Slabs, Ceramic Tiles etc and other such materials, for which basic price has been stipulated in the tender shall be deducted from the component worked out at 60% of the value of work. The cement, steel, RMC as covered under Clauses 4, 5 and 12 of the General Preambles to schedule of quantities and other material like Granite/ Marble Stone Slabs, Lime Stone Slabs, Ceramic Tiles etc for which 'Basic Price' is specified in BOQ shall be excluded from the purview of the adjustment.

$$V_m = \{ 60/100 (R_n - R_{n-1}) - R_{MC} - C_m - O_m - M_{n-1} + M_n \} \times (W - W_0) / W_0$$

Where,

V_m = Variation in price for materials i.e. increase or decrease in the amount in rupees to be paid or recovered.

R_n = Total value of work done (excluding prime cost items, extra items and advance on materials at site upto the period under reckoning) on the basis of accepted tender rates. The deviated items worked out fully on the basis of rates prevailing at the time of last date of receipt of tender to be included.

C_m = Total value of cement and steel at basic price stipulated in the tender and shall comprise of C & S as explained below:

C = Cost of cement used in the work and recorded for any specific bill period under reference and worked out at basic price stipulated in Annexure 'P' attached in the tender.

S = Cost of steel for reinforcement (covered under Clause 5.1 AND 5.2 of the General Preambles to schedule of quantities) used in the work and recorded for any specific bill period under reference and worked out at issue price / basic price stipulated in the tender.

R_{n-1} = Total value of work done (excluding prime cost items, extra items and advance on materials at site) considered in the bill prior to the period under reckoning. The deviated items and such other items shall be considered as per R_n above.

M_n = Advance being allowed in the bill under consideration against materials at site (other than cement and steel)

M_{n-1} = Advance allowed in the bill prior to the period under scrutiny against materials at site (other than cement and steel)

W_0 = All India Wholesale Price Index for all commodities (Base = 100; Year 2004-05) as prevailing on the last day for submission of tender (including extended date, if any).

W = Average All India Wholesale Price Index for all commodities (Base = 100; year 2004-2005) as published in the RBI Bulletin for the period of the bill under consideration viz. from the date of previous bill (date of commencement in case of first bill) to date of current bill (date of virtual completion in case of final bill or any earlier cut off date as fixed).

R_{MC} = Cost of Ready Mix Concrete (RMC) (covered under Clause 12.1 AND 12.2 of the General Preambles to schedule of quantities) used in the work and recorded for any specific bill period under reference and worked out at basic price stipulated in the tender

O_m = Cost of Other material (like Granite/marble / Lime Stone Slabs, Ceramic tiles etc for which 'Basic Price' is mentioned in BOQ) used in the work and recorded for any specific bill period under reference and worked out at basic price stipulated in the tender item. This will also include the cost of any other material / equipments for which price adjustment is done separately.

11.7 The adjustment on materials is worked out on the basis that material component in the building construction work is 60% of the value of work done, the rest being labour and profit. But in the initial stages of construction work, it might so happen that the cost of materials used exceeds 60% which is taken as an average and therefore adjustment gets worked out on negative side even though the economic index might have gone up. In such cases, the negative adjustment shall also have to be made in the bill.

ADJUSTMENT ON LABOUR:

11.8 The contractor shall pay wages to the skilled and unskilled labour not less than the rates prescribed under the minimum wages act and as stated in clause no.18 of the General Instructions to contractors for Builders' work. Variation in prices of labour shall be worked out by applying the following formula and necessary payment/ recovery made::

$$V_L = 25 / 100 \times (R_n - R_{n-1}) \times (I - I_0) / I_0$$

V_L = Variation in price for labour i.e. increase or decrease in the amount in rupees to be paid or recovered

I = Average All India Consumer Price Index for Industrial Workers (base 100 year – 1982) declared by Labour Bureau, Govt. of India, as published in Reserve Bank of India Bulletin during the period under reckoning.

Average All India Consumer Price Index for Industrial Workers for the period of the bill under consideration viz. from date of previous bill (date of commencement in case of first bill) to date of current bill (date of virtual completion in case of final bill or any earlier cut off date as fixed)

I_0 = All India Consumer Price Index for Industrial workers (base 100-year 1982) ruling on the last date of submission of tender (including extended date, if any)

R_n = As defined under 11.6 above and further excluding the cost of items for which labour escalation is paid separately.

R_{n-1} = As defined under 11.6 above and further excluding the cost of items for which labour escalation is paid separately.

11.9 If the last date for submission of tender / date of bill is between 1st to 15th of a particular month the relevant economic index (W , W_0 , I , I_0) for the previous month is to be considered. However, if the last date of submission of tender / date of bill is between 16th and end of month, the relevant economic index for the month shall be reckoned while calculating the material / labour price adjustment.

NOTE: 1) The adjustment in prices of Materials and Labour shall be considered /effected only when the Contractor submits authentic data for prevailing indices along with the RA/Final Bill. The Employer reserves the right to set aside certain amount from the Bill if the Contractor does not submit the authentic data of prevailing indices along with the bill.

2) For adjustment in prices of materials & labour the indices (WPI / CPI) published by RBI as mentioned above which are available as on the date of submission of final bill (final / provisional indices) will only be considered for settlement of final bill . No further review will be done, even if there are variations in indices (WPI / CPI) after the final bill is settled.

3) In case during the period of contract, the base years for publishing Economic Indices are changed as per statute, then the revised indices will be considered as per the published data available at the time of settling

A D D E N D U MGENERAL PREAMBLES TO SCHEDULE OF QUANTITIES**Clause no. 12: ADJUSTMENT IN PRICES OF READY MIXED CONCRETE (RMC)**

The Basic Price of RMC is payable separately, hence the cost of RMC shall be deducted from total value of work done, while calculating the **amount of variation in price for materials (other than cement and steel)** i.e. increase or decrease in the amount in rupees to be paid or recovered. The cost of RMC to be deducted shall be calculated for the quantity recorded in the bill at basic price of RMC stipulated in Annexure 'P' in the tender.

CONTRACTOR'S QUOTED RATES

- 12.1 Contractor shall quote his rates for various relevant items in the tender on the basis of provisions of the clause detailed hereunder and on the basis of the price of Ready Mixed Concrete (RMC) at site of work as mentioned in Annexure "P" attached herewith (hereinafter called the Basic Price of RMC).

APPROVAL OF SOURCE OF PURCHASE AND PRICE

- 12.2 Contractor shall purchase Ready Mixed Concrete (RMC) from approved RMC Manufacturers/ Agencies. RMC shall be of approved grade and category. RMC shall be purchased and transported to the work-site by the Contractor in required quantity sufficient to achieve the desired progress of the work, after the source of purchase and the price of RMC at work site (purchase price including taxes and transportation charges) are approved by Corporation's Engineer. The contractor shall approach Corporation's Engineer sufficiently in advance for approval of price and source of purchase to allow him, time to process the request. For first consignment of RMC required at the time of starting the work, the request for approval shall be submitted within 15 days of receipt of tender acceptance letter. The Contractor shall intimate the Corporation's Engineer the quantity of RMC required the names, full addresses, and telephone numbers of RMC suppliers as well as transport agencies which are reputed and dependable. The Contractor shall submit his request of approval through site Engineer with one copy of the letter to Corporation's Engineer. The Contractor's request letter shall mention the quantity of RMC to be purchased.

BASIC PRICE OF READY MIXED CONCRETE (RMC)

- 12.3 The Basic price of RMC stated in Annexure "P" is inclusive of all costs upto the site of work, including purchase price, all levies and duties including excise duty, sales tax, octroi / town duty, transportation charges including loading and unloading charges at all points transit insurance but does not include any incidental expenses incurred by the Contractor for arranging to take delivery, transportation or payment of octroi charges etc. which shall be solely to the account of the Contractor and shall be included by the Contractor in his quoted rates. All other costs such as pumping the RMC at site, handling, loss due to pilferage, theft, damages if any including RMC which has become unfit for consumption due to any reason etc. shall be to Contractor's account.

PURCHASE OF READY MIXED CONCRETE (RMC)

- 12.4 The Contractor shall purchase and transport the RMC to site, from approved source at approved price and claim the amount from the Employer.

QUALITY OF READY MIXED CONCRETE (RMC)

- 12.5 The contractor shall satisfy himself that the RMC arriving at site is of the requisite grade and category as approved by the Corporation's Engineer and conforming to relevant IS Code. (As per IS: 4926:2003 & IS: 456:2007)

PRICE VARIATION OF READY MIXED CONCRETE (RMC)

- 12.6 The actual cost of Ready Mixed Concrete (RMC) at work site shall be calculated by considering the actual payment made by the contractor for RMC and all other costs included in arriving at "Basic Price" of RMC at site as mentioned in clause 12.3. The difference in the actual cost (purchase price) of RMC at the work site thus calculated and the Basic Price as mentioned in Annexure "P" shall be adjusted for Recovery/ Payment.
- 12.7 For making adjustment, the Contractor shall submit all the copies of the vouchers of the payment made and shall produce their original vouchers for verification along with the claim bills, submitted separately.
- 12.8 Price adjustment on RMC shall be paid/ recovered only for the quantity actual consumed in the work. No allowance shall be made for wastage for the purpose of price variation.

CLAUSE-13 :PRICE ADJUSTMENT OF METRIALS WITH 'BASIC PRICE' MENTIONED IN TENDER ITEM

In some of the Tender Items of finishing work like Flooring / Dado/Cladding etc 'Basic Prices' of Granite/Marble/Lime Stone Slabs, ceramic Tiles etc are Specified in the Schedule of Quantities The price variation of these material shall be adjusted as follows:

CONTRACTOR'S QUOTED RATES

- 13.1 Contractor shall quote his rates for relevant items in the tender on the basis of 'Basic Price' of the material specified in the particular item.

APPROVAL OF SOURCE OF PURCHASE AND PRICE

- 13.2 Contractor shall purchase the Material as per approved samples on getting approval from LIC for the Source and the rates. The contractor shall approach Corporation's Engineer sufficiently in advance for approval of price and source of purchase.

BASIC PRICE OF MATRIALS

- 13.3 The 'Basic Price' of materials specified in the Tender Items shall be inclusive of all costs upto the site of work, including purchase price, all levies and duties including excise duty, sales tax, octroi / town duty, transportation charges including loading and unloading charges at all points (except unloading at Site), transit insurance but does not include any incidental expenses incurred by the Contractor for arranging to take delivery, transportation or payment of octroi charges etc. which shall be solely to the account of the Contractor and shall be included by the Contractor in his quoted rates..All other cost such as unloading the material at site, handling, stacking, storing, providing watch and ward arrangement , loss due to pilferage, theft, damages if any including wastage etc shall be to Contractor's account.

PRICE VARIATION OF MATERIALS

- 13.4 The actual cost of Material at work site shall be calculated by considering the actual payment made by the contractor and all other costs included in arriving at "Basic Price" of material at site as mentioned in clause 13.3. The difference in the actual cost (purchase price) of material at the work site thus calculated and the Basic Price as mentioned in Tender Item shall be adjusted for Recovery/ Payment.
- 13.5 For making adjustment, the Contractor shall submit all the copies of the vouchers of the payment made and shall produce their original vouchers for verification along with the claim bills, submitted separately.
- 13.6 Price adjustment on materials shall be paid/ recovered only for the quantity actual consumed and measured in the work. No allowance shall be made for wastage for the purpose of price variation.

14 ADJUSTMENT OF PRICE AND LABOUR FOR LIFT WORKS:

The price quoted/confirmed is based on the input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices and the wholesale price index numbers for metal products and all India average consumer price index number for industrial workers as specified in the adjustment clause given below. In case of any variation in these indices, the price payable shall be subject to adjustment up or down, in accordance with the following formula:

$$P = P_0 \{15+55(MP/MP_0) +15(W_0(D)/W_0) +15(W_0(I)/W_0)\} / 100$$

Wherein,

P=Price payable as adjusted in accordance with the above formula.

P₀ = Price quoted.

MP₀=Wholesale price index number of metal products. This index number is as applicable on the month, four months prior to the date of tendering.

W₀=All India average consumer price index for Industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt of India(Base 2001=100).This index number is as applicable for the month four month prior to date of tendering.

For example, if the date of tendering falls in the month of December 2015, the applicable wholesale price index number for metal products (MP_0) and all India average consumer price index number (W_0) should be for the month of August 2015.

MP =Wholesale price index number for metal products. This index number is as applicable on the month, four months prior to the date of delivery.

$W_0(D)$ = All India average consumer price index number for Industrial workers (Base 2001=100), as published by labour bureau, Ministry of Labour, Govt of India. This index number is as applicable for the month, four months prior to the date of delivery of manufactured material.

$W_0(I)$ = All India average consumer price index number for Industrial workers, (Base 2001=100) as published by labour bureau, Ministry of labour, Govt. of India. This index number is as applicable for the month, four months prior to the date of completion of installation work.

The date of delivery is the date on which the manufactured material with its entire components are available at site and ready for inspection by Corporation Engineer or the contracted delivery date i.e. six month before the scheduled date of completion of the entire project whichever is earlier.

The date of completion of installation is the date on which the lift work is notified as being completed and ready for testing or two months before the scheduled date of completion of the entire project whichever is earlier.

Wholesale price index number for metal products is as published by the office of Economic adviser, Ministry of Commerce and Industry, Govt of India with Base = 100; Year 2004-05.

(SIGNATURE OF THE CONTRACTOR)

ANNEXURE “M”

MEASUREMENTS: - The measurement shall be recorded by the Corporation's Site Engineer or by an Engineer from Zonal Office /Divisional Office specifically authorized for the purpose in the Measurement Book (MB) Supplied By Corporation.(Refer Clause-21 with all its Sub-clauses of Conditions of Contract of the Tender(Part-I))

LIFE INSURANCE CORPORATION OF INDIA

ANNEXURE "P"

SUB: TENDER FOR TENDER FOR BUILDERS WORK, WATER SUPPLY, SANITARY INSTALLATION, ELECTRICAL INSTALLATION, LIFTS, INTERIOR FURNISHING WORK AND OTHER ANCILLARY WORKS FOR PROPOSED CONSTRUCTION OF SALES TRAINING CENTRE (STC) & HOSTEL BUILDING ON PLOT NO 5&6 PANDEYPUR VARANASI. .

BASIC PRICE OF CEMENT at the Work-Site.

(Refer Clause No. 4.3 of the General Preambles to Schedule of Quantities).

Contractor's Quoted rates shall be Based on the BASIC PRICE of Cement at the work-site which includes purchase price of Cement, all Levies and duties such as Excise Duty, Sales Tax, Octroi/ Town duty, Transportation charges from the factory / stockfish's go-down to the work-site, loading and unloading charges at all points, transit insurance etc.

**A) Ordinary Portland Cement / Pozzolana
Portland Cement / Other Specified Cement**

Rs. 6000 / TONNE

BASIC PRICE OF STEEL at the Work-Site:

(Refer clause No. 5.3 of the General Preambles to Schedule of Quantities)

Contractor's QUOTED rates shall be based on the BASIC PRICE of Steel at the Work-Site which includes purchase price of Steel, all Levies and Duties such as Excise Duty, Sales Tax, Octroi/ Town Duty, Transportation Charges from the factory / stockiest go-down to the work-site including bending and binding charges at all points, Transit Insurance, Weighment charges, etc.

**A) High Strength Deformed Bars or other
specified reinforcing steel of all
diameters in coil or in straight lengths**

Rs. 40000 / TONNE

Note:

1. Packing of Cement (like gunny bags, polythene bags. etc.) cost of which is included in the purchase price, shall **BE THE PROPERTY OF THE CONTRACTOR.**

ANNEXTURE – “R”

LIFE INSURANCE CORPORATION OF INDIA
FORM OF GUARANTEE FOR WATERPROOFING
(To be given by Waterproofing Agency)

Name of the work: _____

Location & Approximate Area: _____

Name of the Main contractor: _____

Name of Water Proofing Agency

M/s. _____

We M/s. _____

_____ hereby guarantee that the surfaces treated by us for waterproofing in the above work, for

M/s. _____

the General builders Contractors for the above work, shall remain entirely watertight. Should, however, due to any unforeseen defect left out in the work carried out by us at the time of execution of the work, there be any leakage from any surface treated by us during the period of **ten years** from the date of virtual completion of work i.e. from _____ to _____ the same shall be rectified by us without any cost to the Life Insurance Corporation of India. However, we shall not be responsible in any way if our work is tampered with or if the body of the structure is damaged due to sinking, cracking and/or by any other act of God. The intimation received from LIC of India during Guarantee period shall be deemed to have been received from Main Builder's Contractor and inspection as well as necessary work shall be carried out and reported upon by us forthwith.

Signature of Waterproofing Agency

Signature of the Main Builders' Contractor

ANNEXURE - "S"

LIFE INSURANCE CORPORATION OF INDIA
PROFORMA FOR REQUEST FOR PAYMENT TO CEMENT SUPPLIERS
BY LIC ON BEHALF OF CONTRACTORS

Dated: _____

(Refer clause 4.5 of General Preambles to Schedule of Quantities)

To,
CHIEF ENGINEER
LIC OF INDIA

Dear Sir,

Name of work:

1. The cement balance in stock as on day is _____ tonnes. It is expected to last upto _____. We now require _____ tonnes of additional quantity for the work upto _____. We shall be grateful if you arrange to place order and make payment for the cement to any one of the approved suppliers at approved rate on our behalf. We accept the responsibility of taking proper delivery of cement and all other responsibilities as per the relevant clause of tender referred to at _____

NOT APPLICABLE

2. The order for transport of cement may also be placed on our behalf by you on any one of the approved transport agency at approved rate. The transport charges and octroi charges etc. shall be paid by us initially and the original bills/receipts produced to you later on for reimbursement.

3. We note that in case any quantity of cement is not delivered at site of work within reasonable time, the advance amount paid by you towards the quantity of cement to be supplied shall immediately be recovered from us from any amount due to us including Security Deposit lying with you.

Yours faithfully,

(SIGNATURE OF CONTRACTOR)

ANNEXURE - "T"

LIFE INSURANCE CORPORATION OF INDIA
**PROFORMA FOR REQUEST FOR PAYMENT TO
STEEL SUPPLIERS BY LIC ON BEHALF OF CONTRACTOR**

Dated : _____

(Refer Clause 5.5 of General Preambles to Schedule of Quantities)

To
THE CHIEF ENGINEER
LIC OF INDIA

Dear Sir,

Name of Work: _____

We now require the following steel for the work. The approximate balance quantity at site for the required categories of steel as on date and further additional quantities are mentioned below.

<u>Category of Steel</u>	<u>Balance quantity at site</u> MT	<u>Further quantity required</u> MT
--------------------------	---------------------------------------	--

NOT APPLICABLE

We shall be grateful if you arrange to place order and make payment for the steel to anyone of the approved steel suppliers on our behalf. We accept the responsibility of taking proper delivery of steel and all other responsibilities as per the relevant clause of tender referred to above.

1. The order for transport of steel may also be placed on any of the approved transport agency at approved rate on our behalf by you. The transport charges and octroi charges etc., shall be paid by us initially and the original bills/receipts produced to you later on for reimbursement.

2. We note that in case any quantity of steel is not delivered at site of work within reasonable time, the advance amount paid by you towards quantity of steel to be supplied shall immediately be recovered from us from any amount due to us including Security Deposit lying with you.

Yours faithfully,

(SIGNATURE OF CONTRACTOR)

SCHEDULE "A"

TO BE READ IN CONNECTION WITH ANNEXURE "P"

- a. Contractor shall note that although the materials and the basic prices for the same have been mentioned in this schedule, the responsibility of procurement of the materials shall rest with the Contractor.
- b. Contractor shall consider in his quoted rates for the relevant item/s the basic rate mentioned in this schedule. The basic rates for the items mentioned in this schedule are ex-work site and are inclusive of:-
 - i. Cost of material,
 - ii. All taxes levied by Central/State Government/Local Bodies, such as excise duty, sales tax, octroi/Town duty etc.
 - iii. Transportation including transit insurance from factory/suppliers/stockiest/dealers go-down/ shop/depot including loading and unloading charges at all points except unloading at work site.
 - iv. All other expenses including wastage shall be to the Contractor's account and shall be included in his quoted rates.
 - v. **Contractor shall purchase those materials which basic price is mentioned in the tender items (other than cement and steel) in required quantities from the approved source after the Chief Engineer/Dy.Chief Engineer has approved the price of materials to be purchased.**
 - vi. Contractor shall produce the vouchers/bills in support of the material purchased and brought by him from the approved supplier.
- c. Storage and safety of the material shall be the Contractors responsibility.

ANNEXURE -U

(ON STAMP PAPER OF REQUISITE VALUE)

(ON STAMP PAPER OF REQUISITE VALUE)

FORM OF GUARANTEE FOR ANTI-TERMITE

Name of the project:-

Location and Approx. plinth area:-

Free Maintenance Guarantee-Anti-termite Work
by M/s _____

We, The.....hereby guarantee that the areas treated by us for Anti-termite in the above work, for M/s, the General Builders, contractors for the above work, shall remain termite-proof. Should, however, due to any reasons, there be any traces of termite during the period **of five** years from the date of virtual completion of the work i.e. from to.....the same shall be rectified by us without any extra cost to the Life Insurance Corporation Of India.

The intimation received from the LIC of India during guaranty period shall be deemed to have been received from main contractors and inspection as well as necessary work shall be carried out and reported upon by us forthwith.

SIGNATURE OF ANTI-TERMITE AGENCY

SIGNATURES OF THE GENERAL BUILDER'S CONTRACTOR.

LIST OF PRINCIPAL / APPROVED MAKES FOR CIVIL WORKS

SL. No.	ITEM	MAKES/AGENCIES/BRANDS
1.	GI PIPES	Jindal Zenith Apollo GST Prakash QST
2.	GI PIPES FITTINGS	R-Brand K.S. Brand Zoloto RR SSS NMC
3.	COPPER PIPES /TUBES	Rajco Metal Industries B.P. Conex Comap
4.	MULTI LAYER COMPOSITE PIPES	Ki-TEC Kisan Flowguard CPVC Astral
5.	PVC PIPES AND FITTINGS	Chemplast Prince Supreme Finolex Oriplast
6.	UPVC (UNPLASTICIZED PIPES & FITTINGS)	Prince Supreme Paras
7.	GATE VALVES, GLOBE VALVE	Leader Kirloskar Zoloto Orient
8	FOOT VALVES, CHECK VALVE	Kirloskar Leader Ashoka
9	WATER METERS	Capstan Anandaasahi Dasmesh Remco
10	FERRULES	Leader Hindco Neta Annapurna
11.	BIB COCKS,STOP COCKS,PILLAR TAPS	Jaguar (Continental Series) Marc (Orient Series) Essco ARK GEM

SL. No.	ITEM	MAKES / AGENCIES / BRANDS
12.	LOW LEVEL FLUSHING CISTERNS (PVC/CERAMIC)	Parryware Cera Hindware Commander
13.	VITREOUS SANITARY WARE LIKE WC, WASH BASIN, URINALS, EWC ETC	Parryware Cera Hindware Neycer
14.	PLASTIC SEAT AND COVER	Commander Parryware Bestolite Duroshine
15.	BATH ROOM FITTINGS	Jaguar (Continental Series) Essco GEM ARK Marc (Oriental Series)
16.	C.I. PIPES & FITTINGS	Hind BIS BIC Neco
17.	C.I. NAHANI TRAP	BIC SKF NECO RAJCO
18.	SW PIPES	HIND PERFECT BURNS
19.	PVC CABINET MIRROR	Commander
20.	SLUICE VALVE	Leader Kirloskar
21.	HDPE/LDPE/LLDPE WATER STORAGE TANKS	Sintex Polycon G & P
22.	CERAMIC / GLAZED TILES	Nitco Somany Kajaria Euro H.R. Johnson

SL. No.	ITEM	MAKES / AGENCIES / BRANDS
23.	VITRIFIED TILES	Nitco Somany Kajaria RAK EURO
24.	PLY WOOD (BWR,BLOCK BOARD)	Kitply Archid Green Ply Century Ply Bhutan Ply Sharon Anchor Swastik National
25.	FLOAT GLASS	Saint Gobin Modi Guard Triveni Sheet Glass Indo Asahi Glass Co. Tata Atul
26.	PVC DOORS & DOOR FRAMES	Rajshri Sintex Supreme
27.	ALUMINIUM EXTRUDED SECTIONS	Hindal Jindal Indal Hindalco
28.	STAINLESS STEEL KITCHEN SINKS	Nirali Farnkee Jayna Diamond Neelkanth
29.	PRELAMINATED/ VENEERED PARTICLE BOARD	Novopan Green Lam Kitlam Archid Lam Swastik
30.	FLUSH DOOR SHUTTERS	Kutty Flush Door Century Green Ply Shiva Hari Plywood Ltd.(Corbett) Anchor Ply Swastik Ply Western India Parvathi Wood

SL. No.	ITEM	MAKES/AGENCIES/BRANDS
31.	DECORATIVE LAMINATES	Green Lam Merino Sunmica/Formica Century Durian Sundek Anchor Decolam
32.	FLOOR SPRINGS	Everite Hardwyn Efficient Gadgets Garness Dormer
33.	VENEERS	Decowood Euro Veneers Durian Green Lam
34	MDF BOARDS	Duratuff Nuwood Century Novopan Kitply Green Ply
35	ADHESIVE	Fevicol SH Araldite Ciba Giegy Mowiol HV of Mafatlal
36	WOOD PRESERVATIVES	Bison Godrej Kot
37	HARDWARE FITTINGS	Jyoti Argent C.I.E.F. Classic Everite Metaco India JH Aluminium PV Radhakrishna Etalite Hardwin
38	DOOR CLOSER	Everite Hardwyn Efficient Gadgets Ebco Dorma Garness

SL. No.	ITEM	MAKES/AGENCIES/BRANDS
39	DRAWER SLIDERS	Efficient Gadgets Ebco Etahoa Sisco
40	LOCK	Godrej Golden Efficient Gadgets Mark Sheet Vision Dorma
41	MIRRORS	Atul Sun Commander Modi Guard Saint Gobin Globe
42	WATER PROOFING COMPOUND	Impermo Cico Pidliite Roff Choksey Hindustan –Ciba Gaigey Accoproof Sika Fosroc
43	STEEL WINDOWS AND VENTILATORS	Agew Steel Mfg. Co. Ltd. Sen Harvic Hopes Diana Casement Madhu Industries Bangalore Multiwin Unique Metal Windows Ankur Industries Modern Fabricators
44	AC PIPES / SHEETS	Charminar Everest Visakha Orient Ramson
45	SPECIAL PROTECTIVE & DECORATIVE FINISH	Snowcem Paint Asian Paints Berger Jenson & Nicholson Kansai Nerolac ICI Godawari

SL. No.	ITEM	MAKES/AGENCIES/BRANDS
46	OIL BOUND DISTEMPER	Asian Berger Jenson & Nicholson ICI Kansai Nerolac Godawari
47	CEMENT PAINT	Snowcem Plus Berger Asian Paints Jenson & Nicholson Kansai Nerolac ICI Godawari
48	SURFACE TEXTURE	Heritage (Bakelite Hylam Ltd.) Spectrum
49	TEXTURE PAINT	Snowcem India Ltd. Santex Matt Asian Jenson & Nicholson Berger Kansai Nerolac
50	ENAMEL PAINT PRIMERS/READY MIXED PUTTY FOR WOOD WORK , IRON & STEEL	Asian Berger Jenson & Nicholson Kansai Nerolac ICI MRF Godawari
51	WALL PUTTY	Birla wall Care Snowcem paints JK Asian paints
52	EXTERIOR EMULSION	Asian Paints - Apex Berger Paints Kansai Nerolac MRF Jenson Nicholson ICI Godawari
53	CEMENT CONCRETE PIPE	The Indian Hume Pipe Premier Pre-stressed Co.
54	EXPANSION JOINT BOARD	Shalimar Tar Products Lloyds Insulations Fosroc Shalitex

SL. No.	ITEM	MAKES/AGENCIES/BRANDS
55	FALSE CEILING	India Gypsum Armstrong Daikin Insula QED Panels
56	VERTICAL BLINDS	Vista Levlor TRAC MAC Marvel
57	ADHESIVE FOR TILE FIXING	Roffe Balendura Cera Bond Fosroc Choskey Chemicals Dr. Fixit Sika Sunanda
58	PAVING TILES	Eurocon Ultra Duracrete
59	PVC FLOORING	Flora Armstrong
60	VINYL FLEXIBLE FLOORING	Wonder Floor Armstrong BHOR Rikvin Tusker
61	FIBRE GLASS DOORS	Master Craft
62	SS/CP FRICTION HINGES	Ebco Jyoti Everest Magnum
63	SOFT BOARD	Jolly Board
64	SCREW	Nettelefold GKW
65	FIBRE REINFORCEMENT COMP.DOOR	Loknath Unique

LIST OF APPROVED SPECILISED WATERPROOFING AGENCIES

1	India Water proofing Co. 3rd Floor, Rohit Chambers, Janmabhoomi Marg, Mumbai G.P.O(fort), Mumbai Tel.: 022 2287 1156
2	Likproof India Pvt Ltd. 2 nd floor, Cecil Court, Mahakavi Bhushan Marg, Colaba, Next To Regal Cinema, Colaba Mumbai 400039, 022 2202 0083
3	Nina Industries Ltd. Mani Bhuvan, Next To Ghana Singh Jewellers, 54 Hughes Road, Grant Road, Mumbai – 400007 Tel.: 022 23692462
4	The Perfect waterproofing Co, Delhi 6637/6, Kothi Mem, Bara Hindu Rao, Delhi-110 006, Delhi – 110006 Tel.: (011) 9810955911, 9810955911, 9312630094
5	National waterproofing Co. 208 Nirman Industrial Estate, Link Road, Malad (west) Mumbai, MH 400064 Tel.: 022 6679 1986
6	Oversee Waterproofing Corporation 2nd Floor, Baldota Bhavan, 117, M Karve Road, Churchgate, Churchgate, Mumbai-400020, Tel.: 022 2205 3827
7	Build tech Construction, Mumbai., A/53, Shravsti Apt., Malad Link Road, Opp: -Sub-Kuchh Market, Malad (W), Mumbai- 400 064, Tel: 9870008247/48/49 buildtech97@gmail.com
8	M/s. All India Waterproofing Company 384, A/4, Kapadia Mansion Near Novelty Cinema Grant Road Mumbai -400007 ph no 9833358754
9	M/s Homega Waterproofing Co. Yusuf Gulshan House Plot No 36 Behind Manakpur post Office Kirad layout Nagpur-440018 ph no 9822236220/9890443399
10	M/s Leakage Proof Agency Basra Manzil, Near Ganjipeth Post Office, Central Avenue Back Road, Nagpur-440018ph no 8446614433/9373737673
11	M/s. Memar Construction Co. 256 Deenath Building 3 rd Floor Room No 6 Pathe Babu Rao Marg Mumbai Ph no 9619091633
12	M/s Naushad Construction Co. 256Deenath Building 1 st Floor Room No 7& 8 Pathe Babu Rao Marg Mumbai Ph no 9892525681
13	M/s. Asian Waterproofing , Patana
14	M/s. M.R. Consultants & Constructions, Universal House, D-187, Vaibhav Khand, Gomati Nagar, Lucknow ,

APPROVED MAKES OF MATERIALS FOR ELECTRICAL, FIRE ALARM & STRUCTURAL CABLING WORK

SR. NO	MATERIAL	MAKES		
1	COPPER CONDUCTOR PVC INSULATED FR/FRLS GRADE WIRES	(a) FINOLEX	(b) HAVELLS	© V GUARD
		(d) RRS		
2	PVC/XLPE INSULATED ARMOURED CABLES (LT/HT)	(a)FINOLEX	(b) FORT GLOSTER	© CCI
		(d) RR KABLE	(e) DELTON	
3	MAIN SWITCH WITH HRC FUSES	(a) L & T	(b)SIEMENS	© GE
		(d) ENGLISH ELECTRIC	(e) STANDARD	(f) HAVELLS
4	MAIN SWITCHES WITH REWIRABLE FUSE	(a) L & T	(b) CROMPTON	© STANDARD
		(d) HAVELS		
5	MCCB	(a) SIEMENS	(b) L & T	© SCHNIEDER – MJ
		(d) LEGRAND		
6	MCB / ELCB / ELMCB / DB/RCCB	(a) LEGRAND	(b) SIEMENS	© HAGGER
		(d) SCHNEIDER MJ		
7	CHANGE OVER SWITCH / SWITCH FUSE UNIT UPTO 100 AMP	(a) HPL	(b) L & T	© HAVELLS
		(d) STANDARD	(e) SIEMENS	
8	CHANGE OVER SWITCH / SWITCH FUSE UNIT ABOVE 100 AMP	(a) HPL	(b) L & T	© SIEMENS
9	RISING MAINS	(a) ENGLISH ELECTRIC	(b) GEC	© SCHNIEDER

SR. NO	MATERIAL	MAKES		
10	PVC CONDUIT (ISI MARK)	(a) PRECISION	(b) AVON PLAST	© ESSARKE
		(d) SUDHAKAR	(e) KALINGA	(f) AKG
11	PVC CASING CAPING	(a) PRECISION	(b) KALINGA	© AKG
		(d) SUDHAKAR	(e) DIAMOND	
12	M.S. CONDUIT	(a) SUPREME	(b) BEC	© NIC
		(d) AKG		
13	FLOOR TRUNKING SYSTEM	(a) LEGRAND	(b) MK ELECTRIC	© PRECISION
		(d) MODI		
14	G.I. PIPE	(a) JINDAL	(b) SENITH	© PRAKASH
		(d) TATA	(e) GST	(f) APOLLO
15	MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR	(a) ANCHOR ROMA	(b) SSK	© LEADER
		(d) CRABTREE	(e) MK	
16	NON MODULAR SWITCHES, ACCESSORIES & ELECTRONIC REGULATOR	(a) ANCHOR	(b) LEADER	© SSK
		(d) CPL		
17	INDUSTRIAL PLUG & SOCKET	(a) LEGRAND	(b) HAVELLS	© CROMPTON
		(d) HAGGER	(e) STANDARD	
18	CEILING / EXHAUST / WALL FAN	(a) USHA	(b) CROMPTON	© ORIENT
		(d) BAJAJ	(e) ALMONARD	
19	INDOOR LIGHT FITTINGS	(a) PHILIPS	(b) WIPRO	© CROMPTON
		(d) GE		
20	OUTDOOR LIGHT FITTINGS	(a) PHILIPS	(b) WIPRO	© CROMPTON
		(d) GE	(e) K – LITE	

SR. NO	MATERIAL	MAKES		
21	CABLE GLANDS	(a) COMET	(b) DOWELLS	© BRACO
		(d) SIEMENS		
22	LUGS	(a) DOWELLS	(b) COMET	
23	CONNECTORS	(a) ELMEX	(b) CONNECTWELL	© PHOENEX
24	FLUORESCENT LAMP	(a) PHILIPS	(b) OSRAM	© CROMPTON
		(d) BAJAJ	(e) GEC	
25	COMPACT FLUORESCENT LAMP	(a) PHILIPS	(b) OSRAM	© HAVELLS
		(d) WIPRO		
26	MOTOR STARTER	(a) SIEMENS	(b) L & T	© CROMPTON
27	MONOBLOCK PUMP	(a) KIRLOSKAR	(b) CROMPTON	© CRI
28	LIGHTENING ARRESTOR	(a) PACTIL	(b) HECO	© ATLAS
		(d) G.K. ELECTRICALS		
29	TRANSFORMER			
(i)	UPTO 500 KVA	(a) PACTIL	(b) EMCO	© CROMPTON
		(d) KIRLOSKAR	(e) GEC	(f) TESLA
(ii)	ABOVE 500 KVA	(a) KIRLOSKAR	(b) GEC	©
30	A.B. SWITCH & D.O. FUSE	(a) PACTIL	(b) JENCO	© CROMPTON
		(d) ATLAS		
31	SELECTOR SWITCH	(a) KAYCEE	(b) SIEMENS	© C & S
32	INDICATING LAMPS	(a) VAISHNO	(b) ESSEN	© PHILIPS
	CONTACTORS	(a) SIEMENS	(b) L & T	© ABB
		(d) SCHNIEDER		

SR. NO	MATERIAL	MAKES		
33	MEASURING INSTRUMENTS	(a) AMP	(b) MECO	© AE
		(d) ENERCON	(e) PROK-DV's	
34	PF IMPROVEMENT CAPACITOR & APFC PANEL	(a) EPCOS	(b) NEPTUNE	© L & T
		(d) CROMPTON		
35	RELAY FOR AUTOMATIC PF IMPROVEMENT	(a) EPCOS	(b) CONZERVE	© L & T
36	CURRENT TRANSFORMER	(a) AE	(b) RISHABH	© KUPPA
		(d) L & T		
37	DATA CABLES & FACTORY MADE PATCH CHORDS	(a) LEGRAND	(b) D LINK	© FINOLEX
		(d) MOLEX	(f) AMP	
38	INFORMATION OUTLET / RJ 45 CONNECTORS / RJ – 11 SOCKETS	(a) D LINK	(b) LEGRAND	© MOLEX
		(d) SYSTEMAX	(e) AMP	
39	TELEPHONE WIRES	(a) FINOLEX	(b) DELTON	© HAVELLS
		(d) RR KABLE		
40	RG 6 CABLE FOR TV	(a) FINOLEX	(b) DELTON	© NATIONAL
41	JACK PANEL	(a) D LINK	(b) LEGRAND	© MOLEX
		(d) SYSTEMAX	(e) VALRACK	(f) AMP
42	RACK	(a) VALRACK	(b) DIGITRON	© HCL
		(d) A LINK		
43	FIRE ALARM PANEL	(a) HONEY WELL	(b) CARMEL	© ZICOM
		(d) NOTIFIER	(e) MIRCOM/SE CUTRON	(f) MORLEY IAS

SR. NO	MATERIAL	MAKES		
44	SMOKE / HEAT DETECTOR	(a) APOLLO	(b) MORLEY IAS	© EDWARD
		(d) SYSTEM SENSOR	(e) HONEY WELL	(f) MIRCOM/SECUTRON
45	MANUAL CALL POINT / HOOTER/ RESPONSE INDICATOR	(a) HONEY WELL	(b) ZICOM	© NOTIFIER
		(d) SIMPLEX	(e) MIRCOM/SECUTRON	(f) CARMEL

Note:

All Switch-gear and the Distribution Boards should be clearly marked with Red, Yellow, Blue and Black colour for phases and neutral. All busbar enclosures Angle iron frame and switch-gears should be painted with battleship grey oil paint. Danger and caution boards at appropriate places on main boards and Distribution Boards should be fixed. All controlling main switches on main boards and distribution boards should clearly indicate with white oil paint lettering the floor and section controlled by it. All equivalent alternative materials used on the job will have to be approved by Chief Engineer of LIC before it is actually used. If any item is installed without prior approval, the contractor will be asked to dismantle the installation and use materials as specified. The insulated wire used for concealed wiring shall be with Red, Yellow, Blue colour for respective phases, Black for neutral & Green for earth wires.

LIST OF PRINCIPAL / APPROVED MAKES FOR FIRE FIGHTING WORKS

Sl. No.	ITEM	MAKE
1	FIRE Pumps	KIRLOSKAR / CROMPTON GREAVES / CRI
2	Hydrant (Landing) Valve. Conforming to IS-5290	NEW AGE / EVERS SAFE / MINIMAX / SAFE GUARD
3	Fire delivery hose-IS-636-type-B fitted with delivery hose coupling-conforming to IS-903	NEW AGE / EVERS SAFE/CRC / JAYSHREE
4	Short branch pipe universal-conforming to IS-2871	EVERSAFE / VIKING/GE / MINIMAX / NEWAGE / SAFE GUARD
5	Hose cabinet :	NEW AGE / EVERS SAFE / MINIMAX / SAFE GUARD
6	Isolation valve	KIRLOSKAR / LEADER / ZOLOTO / ORIENT
7	Non-return valve	KIRLOSKAR / LEADER / ASHOKA
8	Fire service inlet	EVERSAFE /NEW AGE / MINI MAX / SAFE GUARD
9	First Aid Hose Reel Swinging Type:-	EVERSAFE / NEW AGE / MINI MAX / SAFE GUARD.
11	Piping	JINDAL / ZENITH / APOLLO / GST / PRAKASH / QST
12	Pressure Gauge	H GURU / DWYER / FIEBIG / INDFOS / DANFOSS
13	Butterfly Valve	AUDCO / DANFOSS / CASTLE
14	Fire Alarm Control Panel	HONEY WELL / NOTIFIER / MORLEY IAS / MICROM / SECUTRON / CARMEL / ZICOM
15	Manual call Point	HONEY WELL / ZICOM / NOTIFIER / SIMPLEX / MICROM / SECUTRON / CARMEL
16	Hooter	HONEY WELL / ZICOM / NOTIFIER / SIMPLEX / MICROM / SECUTRON / CARMEL
17	Connecting wire / Cable	FINOLEX / HAVELLS / V GUARD / RR CABLES.
18	PVC Conduit	AKG / PRECESSION / AVON PLAST / ESSARKE / SUDHAKAR / KALINGA
19	Carbon dioxide type portable fire extinguisher	EVERSAFE / FIRESHIELD / MINIMAX / CEASE FIRE
20	ABC type stored pressure portable fire extinguisher	EVERSAFE / FIRESHIELD / MINIMAX / CEASE FIRE
21	Water Co2	EVERSAFE / FIRESHIELD /

		MINIMAX
22	Amplifier battery backup. With microphone & AUX line.	AHUJA / PHILIPS
23	Speaker	AHUJA / PHILIPS

TRADE PREAMBLES TO SCHEDULE OF QUANTITIES

These preambles will apply to respective trades of the Schedule of Quantities.

(A) EXCAVATION & EARTH WORK

1. INDIAN STANDARDS

India Standards to be followed are:

All relevant standards as specified elsewhere in this volume are applicable

1) IS 1498 Classification and identification of soils for general engineering purpose

2) IS 3764 Safety code for excavation work

3) IS 4081 Safety code for blasting and related drilling operation

4) IS 6313

Part 1: Code of practice for anti termite measures in buildings: constructional measures

Part 2: Code of practice for anti-termite measures in buildings: Preconstruction chemical treatment measures.

5) SP 27 Hand book of method of measurement of building works

6) Explosive Rules 1940

2. Contractor's rate shall cover for clearing the site of shrubs, brush wood, undergrowth and small trees not exceeding 30cm in girth measured at 1 metre above ground so that lining out, collection of material and excavation can commence without hindrance.
3. Measurement for payment of excavation shall be as per drawing dimensions of bed concrete. Any additional excavation needed for working space, form work, planking strutting wherever required etc., shall not be measured separately and rates quoted shall include for the same.
4. Black cotton soil shall not be used for refilling around foundations and/or filling under floors. Soil for filling shall be free from roots and vegetables moulds and shall be approved by the S.E. / Executive Engineer.
5. Rates for excavation shall include shoring, timbering strutting etc., for protection of excavated sides bailing out surface water due to rains or subsoil water if encountered and dewatering by any pumps wherever required until all work below water level is finished to the satisfaction of the S.E./Executive Engineer.
6. Before starting excavation or filling work on site, the requisite block level of the entire plot shall be taken by the Contractor in consultation with the S.E./Executive Engineer and the block plans showing the existing ground level shall be prepared and jointly signed by the Contractor and S.E./Executive Engineer.
7. Filling in plinth with approved excavated soil and/or soil brought from outside shall be measured net in position after consolidation. Before the item of filling in with soil brought from outside is operated, the Contractor shall take prior permission of the S.E./Executive Engineer and also arrange to take measurements of filled in soil in plinth with excavated earth from the site.
8. Refer IS: 1200 (Part - I) - 1974 for classification of excavated material. Chief Engineer's interpretation regarding classification shall be final and binding on the contractor.

9. Excavated rock/boulders could be used for soling if approved by S.E/Executive Engineer. Recovery at the market rate (as assessed by E.E/S.E) shall be made based on stack measurement after deducting 30% for voids.
10. Contractor is requested to satisfy himself to the character of soil and excavation and collect his own information on all matters affecting excavation.
11. Rates quoted shall include cost of earth, royalty, taxes, octroi, duties, all transport, plant and machinery required for carrying, handling, dumping and consolidation, labour, loading and unloading at all points, stacking, lead and lifts, dumping sectioning, dressing consolidation, making payments and deposits to all concerned (local and Government) authorities. Rates shall also include bailing out surface water due to rains or sub soil water if encountered and dewatering by pumps wherever required
12. Adequate drainage arrangement must be made to provide katcha drainage at suitable intervals as directed by the Executive Engineer, so as to prevent flooding in the locality on account of filling, Some gaps may also be kept and suitable pipe drain or katcha culverts be provided so as to keep the area dry. No extra payment will be made for the temporary drainage arrangements so provided.

2. CONCRETE WORK

INDIAN STANDARDS

Indian Standards to be followed are:

All relevant standards as specified elsewhere in this volume are applicable

- 1) IS 269 Specification for 33 Grade Ordinary and low heat, Portland cement
- 2) IS 383 Specification for Coarse and fine aggregates from natural sources for concrete.
- 3) IS 456 Code of practice for plain and reinforced concrete
- 4) IS 460 Specification for test sieves:
(Part I, II & III) : i) Wire cloth test sieve
ii) Perforated plate test sieve
iii) Method of examination of test sieves
- 5) IS 516 Method of test for strength of concrete
- 6) IS 712 Specification for Building lime
- 7) IS 1199 Method of Sampling and analysis of concrete
- 8) IS 1489 Specification for Portland pozzolana cement
- 9) IS 1542 Specification for Sand for plaster
- 10) IS 1635 Code of practice for field slaking of Building lime and preparation of putty
- 11) IS 2116 Specification for Sand for masonry mortars
- 12) IS 2386 Method of test for aggregate concrete
(Part I, II & III)
I. Particle size and shape
II. Estimation of deleterious materials and organic impurities.
III. Specific gravity, density, voids, absorption and bulking
- 13) IS:2645 Specification for Integral cement water proofing compound
- 14) IS 3025 Methods of Sampling and test (Physical and Chemical for water used in Industry)
- 15) IS 3068 Specification for Broken brick (burnt clay) coarse aggregate for use in lime concrete
- 16) IS 4031 Method of Physical analysis for hydraulic cement (Pt. I to xiii)
- 17) IS 4032 Method of chemical analysis for hydraulic cement

- 18) IS 6452 Specification for high Alumina cement for structural use
- 19) IS 6909 Specification for super sulphated cement
- 20) IS 6932 Methods of test for building lime (Part I to X)
- 21) IS 8041 Specification for Rapid hardening Portland cement
- 22) IS 8112 Specification for 43 Grade ordinary portland cement
- 23) IS 9103 specifications for admixture for concrete
- 24) SP 23 Handbook on concrete mix
- 25) SP 24 Explanatory handbook on Indian Standards code for plain and reinforced concrete (Is 456)
- 26) SP 27 Handbook of method measurement of building works

GENERAL :

P.C.C shall mean Plain Cement Concrete.

R.C.C. shall mean Reinforced Cement Concrete.

R.M.C shall mean Ready Mixed Concrete

1. All concrete specified in this tender shall be ordinary mix./ Design Mix/ Ready Mix concrete.

2. **MIXES OF CONCRETE:**

Concrete used shall be in volumetric mix such as 1:4:8, 1:3:6, 1:2:4, 1:1.5:3, 1:1:2, etc. (Cement: Sand: Stone Chips) / Design Mix/ RMC such as M20, M25 etc.

3. **WORKABILITY:**

Workability of concrete should be controlled by direct measurement of water content, making allowance for any surface water in the fine and coarse aggregates. The slump test or compacting factor test shall be carried out at intervals as directed by the Corporation's Engineer. The slump test is suitable for slump of 5 cm. to 15 cm.

4. **ALLOW IN RATES FOR CONCRETE ITEMS:**

Apart from various factor mentioned elsewhere in the tender, rates quoted for all concrete items shall include for:-

- a) All labour, materials, use of equipments, tools and plants etc.
- b) All necessary operations for the proper volume batching, mixing, handling, transporting, placing, directed, hacking of concrete surfaces where they have to receive plaster (but the plaster on concrete surfaces shall be measured and paid separately under respective plaster items) etc.
- c) Pouring concrete around reinforcement for reinforced concrete work but reinforcement shall be measured and paid for separately, unless otherwise stated in the tender.

- d) Rates quoted for all concrete items shall include for concreting of structural members of any shape and sections as per drawings including providing slopes to slabs, beams, chajjas, canopies etc. wherever required. Form work shall be measured and paid separately.
- e) Allowing work of another agencies being carried out by them like laying conduits, boxes, pipes, clamps etc. as directed before laying concrete and coordinating with other agencies viz, electrical, sanitary ,air conditioning and ventilation Contractor and other agencies working on site.
- (f) Filling the bolt holes (of the shuttering) on concrete surface with cement mortar (1:3) and finishing the same as directed.

5. FORM WORK:

- a) Irrespective of what is stated in general specifications for builder's work, trade preambles for "CONCRETE", contractor's rates quoted for concrete items shall be exclusive of form work. Formwork for all concrete items shall be measured and paid for separately. Form work or shuttering shall be water tight and for all concrete of mix 1:2:4 and higher grades shall be of timber/Steel/Plywood unless otherwise specified. Area of shuttering in contact with concrete surface shall be measured for payment purposes.
- b) Unless otherwise stated, rates quoted for formwork shall include columns /slabs /beams etc. at regular floor heights upto 3.5 meter or at smaller heights as shown on the drawings.
- c) The materials used for shuttering, if not confirming to the specifications required for providing waterproof shuttering, shall be rejected.
- d) For the purpose of measurement of formwork for external side of external/end beams full heights from top of slab to bottom of beams shall be considered under formwork for the beams.

6. ALLOW IN RATES FOR FORM WORK:

Apart from various factors mentioned elsewhere in the tender, rates quoted for the formwork items shall include for:-

- a) All labour, materials, use of equipments, tools, nails, bolts, screws, Centering, oiling etc. required for formwork specified in the tender.

- b) All necessary operation for the proper erection and removal of the formwork when directed.
- c) For necessary provision in the formwork for forming holes and pockets for bolts, balusters, for taking out dowels bars, fan hooks and for other inserts in the concrete as shown including making provisions for other large size openings for doors/ windows/ ventilators/grills etc. in the walls.
- d) For formwork of any shape and sections as per drawings including providing necessary slopes, camber to slab, etc. wherever required.
- e) For necessary provisions in the formwork for forming chamfers, bands, splays, drip moulding, rounded or curved angles, chases, grooves, rebates, making notches, dowels etc. in the concrete wherever directed.
- f) For making construction joints and dummy joints as directed.
- g) Work involving plain or circular, straight or curved forms or in slopes etc. as directed.
- h) Sinking of formwork wherever shown on drawings.

7. CEMENT SHOULD CONFORM TO FOLLOWING STANDARDS (IS: 269-1976 / IS: 8114) / IS: 455:

a) FINENESS:

When tested for fineness in terms of specific surface by Blaines' air permeability method as directed in IS:4031-1968, the cement shall comply with the following requirements:

Type of Cement	Specific Surface Sq/Cm/g
Ordinary	Not less than 2250
Low heat	Not less than 3200

b) SOUNDNESS:

- b.1. When tested by the 'Le Chatelier' method described in IS:4031-1968, unaerated ordinary and low heat Portland cements shall not have an expansion of more than 10mm.
- b.2. In the event of the cement failing to comply with the above requirement, a further test shall be made by the 'Le Chatelier' method described in IS:4031 - 1968, from another portion of the same sample, after aeration, by being spread out to a depth of 75mm at a relative humidity of 50 to 80 % for a total period of 7 days, when the

expansion of each of the two types of cements mentioned above, shall not be more than 5mm.

- b.3. Un-aerated ordinary and low heat Portland cements having a magnesia content of more than 3 % shall be tested for soundness by autoclave test described in IS:4031-1968 and shall not have an expansion of more than 0.8%. However, if specified by the purchaser at the time of placing the order, cements having a magnesia content of less than or equal to 3%, shall be also tested for autoclave expansion as described in IS:4031-1968 and shall not have an expansion of more than 0.8%.

c) SETTING TIME:

The setting time of the cements, when tested by the Vicat apparatus method described in IS: 4031-1968 shall confirm to the following requirements:

	<u>Ordinary</u>	<u>Low heat</u>
i) Initial setting time in Minutes, not less than	30	60
ii) Final setting time in Minutes, not more than	600	600

- d) Compressive Strength: The average compressive strength of at least three mortar cubes (area of face 50 Sq.cm.) composed of one part of cement, three parts of standard sand (Confirming to IS: 650-1966) by mass and P/4 + 3 % (of combined mass of cement plus sand) water and prepared, stored and tested in the manner described in IS: 4031-1968 shall be as follows:

Kgf/SqCm.	Ordinary	Low Heat
a) 72 + 1h, not less than	160	100
b) 168 + 2h, not less than	220	160
c) 672 + 4h, not less than	-	350

Note 1: Standard sand shall confirm to IS:650-1966

Note 2: P is the percentage of water required to produce a paste of standard consistency.

8. WATER PROOFING COMPOUND:

Cement water proofing compound wherever mentioned in the items shall be "IMPERMO" manufactured by M/s SNOWCEM (India Ltd.) , 2% by weight of cement or "CICO" waterproofing compound manufactured by M/s STRUCTURAL WATERPROOFING Co. Pvt. Ltd., Kolkata, 3% by weight of cement or other equal and approved as per Manufacturer's Specification and rates quoted shall include for the same (As per approved materials).

9. MATERIALS: ALL MATERIALS SHALL BE OF APPROVED QUALITY.

10. AGGREGATES:

Aggregates shall conform to IS:383/1970 and IS:2386-1963 and shall be from approved sources.

11. LOADING OF FLOOR SLABS:

Materials shall not be stored or stacked on suspended floors and roofs without the Corporation's Engineer's prior approval.

12. WATER :

Water used for both mixing and curing shall be potable and free from injurious amounts of deleterious materials which are likely to affect the strength or durability of concrete. Water containing any sugar shall not be allowed for use. Also, water which fails to satisfy the following requirements shall be not be used

- a. To neutralize 100 ml. sample of water, it should not require more than 5 ml. of 0.2 normal HCL.
- b. To neutralize 100 ml. sample of water, it should not require more than 25 ml. of 0.02 normal H_2SO_4 .
- c. Water should not contain solids in excess of the following :-

Organic	200 mg/ltr.
Inorganic	3000mg/ltr.
Sulphate (as SO_4)	400mg/ltr.
Chloride (as Cl)	2000mg/ltr. (for P.C.C)
Chloride (as Cl)	500 mg/ltr. (for R.C.C)
Suspended matter	2000mg/ltr.

The PH value of water shall be between 6 to 8.

13. SAMPLES AND TEST:

Every facility shall be provided to enable the Corporation's Engineers to obtain samples and carry out test on the materials of construction, if these tests show that any of the materials of construction do not comply with the requirements of this specification, the Contractor will be responsible for the cost of the tests and the replacement of the defective materials and/or construction.

14. REJECTED MATERIALS:

All materials which have been damaged contaminated or have deteriorated or do not comply in any way with the requirements of the specifications shall be rejected and shall be removed immediately from the site at the Contractor's own expense.

(C) BRICK WORK

1. INDIAN STANDARDS

Indian Standards to be followed are:

All relevant standards as specified elsewhere in this volume are application.

- 1) IS 269 Specification for ordinary and low heat Portland cement
- 2) IS 472 Specification for expanded metal steel sheets for general purpose
- 3) IS 432 Specification for mild steel and medium tensile steel bars and hard d drawn steel wires for concrete reinforcement

Part 1. Mild steel and medium tensile steel bars

- 4) IS 1077 Specification for common burnt clay building bricks
- 5) IS 2116 Specification for sand for masonry mortars
- 6) IS 2212 Code of Practice for Brick Work
- 7) IS 2250 Code of practice for preparation and use of masonry mortar
- 8) SP 27 Handbook of method of measurement for building works.

2. Size of bricks shall be 230 x 115 x 75mm nominal from approved source. Brick shall be well burnt first quality, having regular shape with sharp comers and edges and should stand all tests as required by ISI Specifications. One brick wall shall be considered as 230 mm thick, half brick wall shall be 115 mm thick and brick on edge wall shall be 75mm thick.
3. Crushing strength of the bricks to be used in the works shall be not less than 75 kgs. Per square cm.
4. The rates quoted shall include for all work like those in walls, jambs, pillars, mullions steps, kerbs/threshold, corbels, ribs and raking out joints, cutting, scaffolding and curing etc.
5. The rates quoted shall also include for recesses, cutouts etc., in brick work for electrical work if required.
6. Sand for masonry mortar shall be as per IS:2116-1980 as applied to unreinforced brick work.
7. For exposed brickwork, selected and approved bricks shall be used having uniform colour, size and sharp edges.

4. STEEL AND IRON WORK

1. INDIAN STANDARDS

Indian Standards to be following are:

All relevant standards as specified elsewhere in this volume are applicable.

1. IS 226 Specification for Structural steel standard quality
2. IS 228 Methods for chemical analysis of steels
3. IS 280 Specification for mild steel wire for general engineering purpose
4. IS 432 Specification for mild steel and medium tensile steel bars and hard drawn steel wires for concrete reinforcement.

Part 1 Mild steel and medium tensile steel bars.

5. IS 456 Code of practices for construction and design of reinforced steel.
6. IS 814 Covered electrodes for manual metal arc welding of structural steel
7. IS 1599 Method for bend test for steel products other than sheets, strip wire and tube
8. IS 1608 Method of tensile testing: steel products
9. IS 1786 Specifications for cold worked steel high strength deformed steel bars for concrete reinforcement (Superseding IS 1139)
10. IS 9417 Recommendations for welding cold worked bars for reinforced concrete construction

2. Rate quoted for Reinforcement shall include for the cost of steel, all fabrication including cutting to lengths as shown in the final Drawings, all labour in binding and cranking, forming hooked ends, storage, handling, hoisting etc., right upto placing of Steel in position upto the final stage of work according to the Drawings, providing necessary binding wire, temporary supports and for rolling margin in calculated weights. All wastage shall be to the Contractor's account.

3. The rate quoted for Reinforcement shall include for the cost of annealed steel binding wire of size not less than 0.90 mm and conforming to IS:280-1962. The weight of the binding wire will not be accounted for in the measurements. The rate shall also include for precast concrete cover blocks of specified sizes as directed.

4. The rate shall hold good for Reinforcement in any structural member irrespective of its location and dimensions.

5. Reinforcement shall be placed as shown on the Structural Drawings and payment will be made on net measurement from Drawings. Only such laps, dowels, chairs and pins in Reinforcement as approved by Suptdg. Engineer/Executive Engineer and shown on Drawings shall be paid for. The contractor shall allow in his rates for any wastage which will not be paid for. Rates shall allow for removal of rust by rubbing with wire brush as directed.

6. Welding of Reinforcement bars will not be permitted unless specially authorised by the Chief Engineer.

7. Torsteel of TISCON-II shall be used as per recommendation of the manufacturers and rates shall allow for this.

8. Rate for M.S. railing, grills, shutter, grill door, ladder, rung ladder, weldmesh grill, fan hooks etc, shall include for the following:

- a. Fabrication, cutting and bending to required size and shape drilling, punching, countersinking, welding, filling etc., finishing erecting, fixing in position.
- b. Whenever the M.S. grill/railing/rolling shutter/M.S. weld mesh grill are required to be fixed to brick/concrete jambs/floor, they shall be fixed by means of required size and Number of M.S. lugs and embedded/grouted in Cement Concrete block 1:2:4 and/or fixed by means of suitable counter sunk screws with raw plugs.
- c. Wherever the M.S. grills are required to be fixed to frames or steel windows and ventilators, they shall be fixed by welding, unless otherwise specified or directed.

d. Grill door shall be fixed by means of M.S. holdfasts of required numbers, size and shape as approved, embedding/grouting the holdfasts in 1:2:4 Cement concrete block and/or rag bolts and nuts of approved size.

e. Both legs of both ends of M.S. ladders shall be fixed to concrete floor/slabs by embedding / grouting in 1:2:4 cement concrete block/base of required size.

f. M.S. rung ladders shall be fixed in brick/concrete work by embedding/grouting as required in 1:2:4 cement concrete.

g. In case of M.S. Grill door the Contractor shall provide and fix G.I. pipe piece of suitable size wherever required duly inserted in brick/concrete jambs to accommodate the sliding rod or aldrop.

h. The fixing accessories like M.S. holdfasts, lugs, screws, rawl plugs, concrete for embedding/grouting, bolts and nuts of any type, G.I. pipe pieces and such other accessories for fixing, shall not be considered in the measurement of the weight/quantity and shall not be paid separately.

i. Rates quoted for M.S. guard bars/M.S. grills to windows and ventilators shall also, include for making holes in frames of windows and ventilators/fan lights wherever required.

9. Except for bar Reinforcement, all exposed steel, cast iron and mild steel work shall be painted with two coats of synthetic enamel paint (first Quality) of approved colour and shade over a coat of primer, manufactured by one of the manufacturer's as per the list attached and as per manufacturer's specifications Rates quoted shall include for above.

Although, two coats of paints are specified, Contractor will have to do additional coat of paint if well finished surface is not obtained to the satisfaction of the Superintending Engineer/Executive Engineer and there shall be no extra payment on account of this.

10. Measurement

Weight of the Steel Reinforcement bars (Mild Steel and High Strength Deformed Bars) used in the construction shall be on the basis of the length incorporated in concrete and weight shall be computed in accordance with the table given below.

Diameter of Bar mm	Weight per Meter Length In kgs.
6	0.222
8	0.395
10	0.617
12	0.888
16	1.579
20	2.467
22	2.985
25	3.855
28	4.836
32	6.316

(The weights per metre of bars given in the above, are calculated on the basis that steel weights 7.85 g/cm³. In case of any error or omission in this table, the weight per meter length in kgs. shall be computed on the basis of actual area and taking the density of steel as 7.85 g/cm³.)

11. Contractor shall prepare the detailed bar-bending schedule from the working drawing and submit the same to the Suptdg. Engineer/Executive Engineer for approval before cutting and bending the reinforcement.

12. For measurement of rolling shutter, the area of the actual opening covered shall be considered. Clear width between side jambs and clear height between floor and bottom of lintel/beam shall be measured. Hood shall not be measured separately. The rate shall be inclusive of the cost of hood.

1. Rates for M.S. Door and window frames shall include for fabrication, cutting and bending to required size and shape, drilling, punching, counter sinking, welding, filling etc. finishing, erecting, fixing in position and all concrete work for grouting/ embedding wherever required including painting. Concrete for grouting/embedding shall not be considered in the measurement of the weight and shall not be paid separately also.

SPECIFICATION FOR PRESSED STEEL DOOR FRAMES:

INDIAN STANDARDS

Indian Standards to be followed are:

All relevant standards as given below and as specified elsewhere in this volume are applicable.

- 1) IS 226 Specification for structural steel standard quality
- 2) IS 1038 Specification for steel doors, windows and ventilators
- 3) IS 4351 Specification for steel door frames
- 4) IS 7452 Specifications for hot rolled steel sections for doors, windows and ventilators.

1. INDIAN STANDARDS

Indian Standards to be followed are:

All relevant standards as given below and as specified elsewhere in this volume are applicable.

- 1) IS 226 Specification for structural steel standard quality
- 2) IS 1038 Specification for steel doors, windows and ventilators
- 3) IS 4351 Specification for steel door frames
- 4) IS 7452 Specifications for hot rolled steel sections for doors, windows and ventilators.

2.

a) Steel door frames shall be manufactured from commercial mild steel (conforming to I.S. 513-1973) sheets of 1.25 mm thickness.

b) Steel door frame shall be as manufactured by approved manufacturer. Steel door frame shall generally conform to I.S. 4351-1976.

c) Removable type, base tie of cold rolled formed section of 1.25mm thick to suit the floor thickness at site, shall be provided.

d) Steel door frames shall be fixed to brick work/concrete blocks by means of three adjustable M.S. lugs with split end and tail to each jamb. The head of the M.S. lugs shall be 120mm long and made from flat steel strip 25mm wide and not less than 1.6mm thick. The tail of the lugs shall be made of steel strips not less than 40mm wide and not less than 1mm thick. The length of the M.S. lugs in plan shall be 200mm long. Lugs shall be grouted in P.C.C. 1:2:4 of required size.

e) Copper oxidised iron butt hinges shall be fixed to frame at required location by means of welding.

f) Hollow portion between the frame and brick/concrete block surface shall be filled with cement mortar 1:5.

g) Necessary mortar guard of required size shall provided wherever the holes are made for bolts, latches, handle etc. in the door frame. M.S. plate stiffeners, 1.25 mm thick of suitable size, shall be welded to frame wherever holes are made in the frame.

- h) For all single leaf door shutters three rubber shock absorber of suitable size shall be inserted in the holes in the rebate of the door frame-one shall be located in the center line of the lock strike plate and other atleast 45cms on either side of center line of lock strike plate.
- i) Door frame will be supplied by the manufacturer in zinc chromate primer finish
- j) Steel door frame shall be painted with two coats of synthetic enamel paint of approved colour and shade over a coat of primer as stated in trade preambles of "Steel and Iron Works".
- k) At the time of manufacturing steel door frames, adequate provisions/ arrangements shall be made for fixing aldrops, latches, tower bolts, hinges and other necessary accessories as directed.
- l) Rates quoted by the contractor shall allow for the above factors.
- m) The cold rolled from steel doorframes shall be measured in running metre. Unless otherwise specified, the length of the doorframe shall be measured out to out.

3. Steel windows, ventilators, and doorframes shall be painted with three coats of synthetic enameled paint (first quality) of approved colour and shade including suitable primer coat of approved manufacturer. Although three coats of paint are specified, contractor will have to do additional coat of paint, if well finished surface is not obtained to the satisfaction of the Superintending Engineer/Executive Engineer and there shall be no extra payment on account of this.

(F). ALUMINIUM DOORS, WINDOWS, VENTILATORS AND PARTITION WALLS

1. All aluminium work shall be free from defects impairing strength, appearance and shall be of the best available quality for the purpose specified. The aluminium alloy used in the manufacture of extruded door/window/ventilator sections shall correspond to IS designations HE9-WP of IS:733-1956. "Specifications for wrought aluminium and aluminium alloys bars, rods and section (for general engineering purpose)". Hollow aluminium alloy section and coupling section used shall confirm to ISS generation HV9W9 of IS 1285-1958. "Specifications for wrought aluminium and aluminium alloys extruded round tube and hollow section (for general engineering purpose only)".

Contractors shall commence manufacturing of doors/windows/ventilators only after the shop drawings showing full size, sections, thickness of metal, details of construction, hardware etc., submitted by them are approved.

Where aluminium comes in contact with concrete, brick work, plaster or any other dissimilar metals, it shall be coated with a coat of zinc chromate conforming to IS 104-1950. Contractor shall cover all the anodised finish work with a thick layer of clear transparent laquer based on methacrylates or cellulose butyrate to protect the surface from wet cement during installations. This laquer coating shall be removed after the completion.

All the manufactured doors, windows and ventilators shall be stacked on site under cover. Damaged surfaces with defects like scratches etc., on finished work shall not be accepted. Fabricated materials shall be created in an approved manner to protect the material against any damage during transportation. Loading and unloading shall be carried out with utmost care. The doors, windows and ventilators on arrival at site shall be carefully examined to detect any damaged pieces. Arrangements shall be made for

expeditious replacement of damaged pieces/parts. Material found to be acceptable on inspection only shall be used.

All exposed surfaces of sections for aluminium doors/windows/ventilators including beading and other accessories shall be anodised after fabrication in a manner conforming to IS:1868-1968 and to approved finish. Anodic coating /powder casting shall be as mentioned in schedule of quantities under relevant items.

2. ALUMINIUM DOORS, WINDOWS, VENTILATORS:

Aluminium doors windows and ventilators shall be manufactured from sturdy extruded sections of approved manufacture and shall be of aluminium alloys as stated above.

Contractor shall provide sturdy sections/members of the doors, windows and ventilators including combination of joints so as to withstand wind load of high intensity. The frame shall be square and corners of the frames being fabricated to true right angles. Both the fixed and opening frame shall be of section which have been cut to length, mitred and mechanically jointed and/or electrically welded at corners as required for satisfactory performance.

Sub-dividing bars shall be tenoned and riveted into the frames. All members shall be accurately machine milled and fitted to form hairline joints. The jointing accessories such as cleats, brackets etc., shall be of such, material as not to cause any bi-metallic action.

All the sizes indicated in the tender as well as in the drawings for various windows, ventilators, doors etc., are to be considered as structural openings at the site by the contractor before taking up the actual manufacture of various units.

3. METHOD OF FIXING

(a) ALUMINIUM DOORS, WINDOWS AND VENTILATORS IN BRICK WORK AND CONCRETE WORK: Aluminium doors, windows and ventilators shall be fixed to brick work by means of slotted steel adjustable lugs (natural finish), not less than 100mm x 16mm x 3mm with counters galvanised machine screws and nuts 19 x 6.3 mm and to concrete works by means of 75mm x No. 10 galvanised wood screws.

(b) FIXING SCREWS AND LUGS: Outer frame shall be provided with fixing holes centrally in the web of the section at approved intervals any steel lugs coming in contact with aluminium should be either galvanised or give one coat of bituminous paint.

After fixing the frame in position and stated above the space between the concrete surface and the frame of doors/windows/ventilators shall be fresher grouted with cement mortar 1:4 so as to achieve absolute water tightness between the frame and the inside surface.

Further all the vertical and horizontal members of doors, windows and ventilators etc shall be provided with Neoprene weather stripping. The contractor shall design fabricate and fix in position the doors, windows and ventilators in such a way that the water penetration is totally and effectively sealed and any dampness on the inner surfaces is completely eliminated. Further, to drain out any water failing on the members of the frame, a continuous drip-strip and necessary weep holes shall be provided. The shop drawing submitted by the contractor shall show the method of sealing water penetration also.

The method of fixing the doors, windows and ventilators in position stated above shall generally be adopted by the contractors and the members used in the manufacturing of units shall be so designed to suit the above method of fixing. However; the contractors are free to adopt any other equivalent method of fixing aluminium doors, windows and ventilators if the same is approved by the Chief Engineer. The rate quoted shall include for the approved method of fixing. In no case door/windows/ventilators shall be allowed to be fixed over wooden runners.

The doors, windows and ventilators shall be allowed to be fixed over wooden runners. The doors, windows and ventilators should be designed not only for its strength, stability, stiffness against all odds, but for easy operation, water tightness, easy replacement of glass and cleaning from inside. All screws used shall be of adequate size and shall be cadmium plated brass.

4) GLASS AND GLAZING:

Glass shall be of the type and quality specified in the Schedule of Quantities and as manufactured by approved manufacturer.

Before installation of the glass, contractor shall ensure the following :

- (a) All glazing rebates shall be square, plumb, true in place, clear, dry and free of dust.
- (b) Glass edges shall be clear and cut to exact size, glass with chipped or damaged edges shall be rejected.
- (c) Glass shall be set in glazing clips and so installed to achieve proper water tightness.
- (d) Suitable PVC or Neoprene gaskets shall be used for fixing glass so as to prevent rattling.
- (e) BEADING: Beading shall be of aluminium section and shall be snap on type having mitred corners either triangular or rectangular.
- (f) Any hollow portion between the frame and the brick/concrete surfaces and the component parts of the frame shall be filled up with suitable mastic/cement and sand fillet as per I.S. Specifications and rates quoted shall include for the same.
- (g) On completion of job, all glass shall be thoroughly cleaned and free from dirt, putty or other adhering material.
- (h) Wastage in cutting of glass, shall be to contractor's account Frosted/ground glass shall be set with smooth surface outside.

5. Contractor's shall submit the detailed drawing showing the various members of aluminium doors, windows and ventilators which they propose to use, along with their filled in tender.

The members proposed to be provided by the contractors for aluminium doors, windows and ventilators shall be of approved quality and sturdy to withstand the wind pressure of high intensity and day to day handling and shall be free from rattling, leakage etc. If required, contractor shall furnish the detailed design calculation to substantiate the sturdiness of each door, window and ventilator. In case, any modifications in sizes, thickness and weight are required to any members of doors, windows and ventilators, same shall be carried out by the contractor and suitable adjustment shall be made on the basis of relevant tender items.

The Chief Engineer reserves the right to delete any or all items of this trade and allot the work under this head to any specialised agency/agencies. No claim whatsoever shall be entertained on this account.

MODE OF MEASUREMENTS: Aluminium doors, windows and ventilators shall be measured in sq.mtrs.

Clear area over one face inclusive of external frame shall be measured. Any fixture or projections embedded in concrete/masonry work shall not be measured.

Rate shall include for fittings and fixtures shown on the shop drawings approved by the Chief Engineer.

HARDWARE: Rate for aluminium doors, windows and ventilators shall include for supplying and fixing hardware. Hardware shall be of best quality extruded section and shall be of aluminium. Hinges shall be of heavy pattern with stainless steel pins and stainless steel washers. Contractor's rates shall include rates for necessary screws, bolts and other devices for a neat and secure hardware arrangement. The bolts and screws etc., shall be of cadmium plated brass of required size to secure and permanently fix the hardware in place. No steel or iron screws shall be used. Samples of different items of hardware including screws shall be submitted along with the sample of doors/windows/ventilators for approval. Contractor shall be responsible for the proper working of all hardware for a period of one year from the date of completion.

RATE TO INCLUDE: Apart from other factors maintained elsewhere in this tender document, rates for the items of supplying and fixing aluminum doors, windows and ventilators shall also include for the following:

- 8All materials and labour required for supplying and fixing in position approved anodized aluminum doors, windows and ventilators as described in the trade at site work.
- 9After the shop drawings are approved, the contractor shall apply one sample each of door, window and ventilator with hardware etc., for approval as directed.
- 10Supplying and fixing in position glass of specified thickness, type and quality along with putty, glazing clips and aluminum beadings of required section.
- 11All accessories, for fixing doors, windows and ventilators to concrete/masonry surface as described in the trade.
- 12Filling sealant as per details to ensure water tightness. All the sealants must be permanently resilient and of non-bleeding nature.
- 13Protecting the surface and edges around doors, windows and ventilators from any damage while fixing doors, windows and ventilators.
- 14Removing all protective coverings and cleaning the door, window and ventilator frames
- 15Neoprene/P.V.C weathering strips required.
- 16Drip strip to drain out water falling on the members of the frame.
- 17Pressure grouting in cement mortar 1:4 the space between the concrete surface and frame of window and ventilators.
- 18PVC or Neoprene rubber gaskets for fixing glass.
- 19Cadmium plated brass screws wherever required.
- 20Galvanised aluminum channels pieces, Fischer screws, of required size and number for fixing door, window and ventilator frames in position.
- 21Necessary scaffolding/cradle for erection of aluminum doors, windows and ventilators in position.
- 22Rates for sliding windows and ventilators to include for adequate arrangements for draining out water collected in the channel of the outer frame.
- 23All rates quoted in the trade shall include for supplying and fixing
- 24Swing door shutters shall include for double action oil check floor springs of approved make and size including embedding and floor springs in the flooring and making good the same.

- 25 For all window and ventilator openings, contractor shall prepare M.S. retrievable template frames with necessary tolerance for obtaining the correct dimensions of openings in concrete / brick masonry works.
- 26 Aluminium hardware, Ebco brand 200mm to 300mm long stainless steel friction hinges for all openable shutters of windows/ ventilators with Ebco brand 100mm long aluminium handle, all necessary fixtures and accessories.
- 27 Suitable metallic clamps at every joint of the outer frame.

OVERALL SIZES OF ALUMINIUM DOORS, WINDOWS AND VENTILATORS:

Size of doors, windows and ventilators in the tender shall be considered as approximate. These sizes are likely to reduce by about 40mm to 50mm due to T.W surrounds to be provided in the opening. Contractor shall therefore, verify all sizes at site before manufacturing, Payment shall be based on the actual size provided.

SIZES OF ALUMINIUM SECTIONS AND WEIGHTS OF EACH UNIT:

Contractor shall note that sizes and minimum weights of each unit of doors, windows and ventilators have been given by LIC in relevant tender items. These shall be considered as overall guidelines for arriving at the proposed actual unit weight of each door/window/ventilator and also to help contractors for choosing the various sections for the different members of each unit of doors, windows and ventilators. Contractors shall however, submit his own design and drawings giving details of sizes and weights of all sections for each type of door, window and ventilator etc., and also actual weight per unit as proposed by them.

Contractors are particularly requested to ensure that their design is as economical as possible consistent with performance requirements as stated in the tender.

VARIATION OF WEIGHTS: Minimum weight of each unit of aluminium doors, windows and ventilators is given by LIC in relevant tender items. Contractor shall quote his rates for doors, windows and ventilators whose actual weight per unit as proposed by them shall be within plus or minus 5% of minimum weight of each unit as specified by LIC in relevant tender items.

In case of variation in the weight per unit (exclusive of glass, hardware and fittings but inclusive of beading, if any) as per finally approved shop drawings beyond the weight limit of plus or minus 5% from the contractor's actual weight per unit submitted at the time of shop drawings suitable adjustment shall be made on the basis of relevant items provided in the bill of quantities for this purpose (based on rate per kg. of aluminium inclusive of anodizing / powder coating etc.).

SIDE HUNG AND TOP HUNG WINDOWS / VENTILATORS: The aluminium hinges for side hung and top hung windows/ventilators shall be fabricated out of extruded sections conforming to I.S. designations HE 10WP or HE30WP of IS:733-1956. Specifications for wrought aluminium and aluminium alloys, bars, rods and sections (for general engineering purposes). The hinges shall be of 'Ebco' or equivalent brand stainless steel friction hinges 200mm to 300mm long depending upon the size of the shutter.

CENTRE - HUNG VENTILATORS: Centre -hung ventilators shall be hung on two pairs of cup pivots of aluminium alloy to IS Designation NS-4 of IS: 737-1955 specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purpose) and riveted to the inner and outer frames of the ventilator to permit the ventilator to swing to an angle of approximately 85 degrees. The opening portion of the ventilator shall be so balanced that it remains open at any desired angle under normal weather condition.

10 WOOD WORK AND JOINERY:

1. INDIAN STANDARDS

Indian Standards to be followed are: All relevant standards as given below and as specified elsewhere in this volume are applicable.

- | | |
|------------|--|
| 1) IS 287 | Recommendation for maximum permissible moisture content for timber used for different zones. |
| 2) IS 851 | Specification for synthetic resin adhesive for construction (non-structural) in wood. |
| 3) IS 852 | Specification for animal glue for general wood working purposes |
| 4) IS 1141 | Code of Practice for seasoning of timber |
| 5) IS 2202 | Specification for wooden flush door shutters (solid core type) |

Part I Plywood face panels

Part II Particle board panels and hard board face panels

2. T.W. shall mean Indian Teakwood of well seasoned, good quality, uniform colour, reasonably straight grains, free from cracks and shakes. Wood shall be generally free from Sapwood but traces of Sapwood may be permitted. Maximum moisture content shall not exceed 10% with tolerance limit for average moisture content of all samples in a given lot +2 percent of the moisture content of individual samples +3 percent of the maximum permissible moisture content.

Generally wood shall be free from knots, however wood with knots may be permitted provided individual hard and sound knot shall not be more than 40 mm in diameter and aggregate area of all the knots shall not exceed one and half percent of the area of the place.

Teakwood / salwood or any other wood mentioned shall be got approved before incorporating in the work. The contractor should ensure that wood work does not warp or show other defects due to lack of proper seasoning.

3. Timber shall be wrought, framed and cut to shape as shown on Drawings and or required.
4. Flush Door Shutters shall be as manufactured by one of the approved manufacturers in the list attached and shall be solid core block board commercial faced and provided with seasoned teakwood lipping which shall be included in rates quoted. Plywood shall be as manufactured by one of the approved manufacturer's in the list attached and shall be boiling water proof quality phenol bonded (shuttering type).
5. Particle Board shall be of waterproof quality, (phenol bonded, three layer flat/pressed) as manufactured by one of the approved manufacturer/s in the list attached. Please note that the particle board panels wherever mentioned in the items shall be veneered teakwood particle board bonded with phenol formaldehyde synthetic resin with commercial veneer on both sides conforming to I.S.: 3097-1980 and rates quoted for these items shall include for the same unless otherwise specified.
6. Permissible Tolerances:
- a. Door-Window Frames: A tolerance of ± 2 or 3 mm shall be allowed in the finished cross sectional dimension/s of door and window frames.

- b. Shutters for doors and windows: The finished work with a tolerance of $\pm 1\text{mm}$ in thickness and ± 2 or 3 mm in width of styles and rails shall be allowed.
 - c. Flush Door Shutters:
Tolerance on width and height shall be $\pm 3\text{mm}$, tolerance on thickness shall be $\pm 1.2\text{mm}$. Thickness of shutters of shutter shall be uniform throughout with a permissible variation not more than 0.8mm when measured at any two points.
- 7 Wherever painting is specified, woodwork and joinery shall be painted with three coats of approved colour and shade synthetic enamel paint (first quality), including primer as manufactured by one of the manufacturer/s as per the attached list. Although three coats of paint are specified, contractor shall have to do additional coats of paint, if well finished surface is not obtained to the paint are specified, contractor shall have to do additional coats of paint, if well finished surface is not obtained to the paint, if well finished surface is not obtained to the satisfaction of the Suptdg. Engineer/Executive Engineer and there shall be no extra payment on account of this.
- 8 Wherever polishing is mentioned for woodwork, it shall be wax/French polishing of approved finish as required. Where door frames are fixed flush with plaster of walls, teakwood/hardwood cover moulds/architrave shall be provided all round. T.W/H.W cover moulds shall be paid separately and shall be painted or polished as in doors/windows.
- 9 Rates quoted for shutters of doors/windows shall include the cost of Iron/Brass oxidised, butt/parliamentary hinges (as the case may be) heavy quality extruded section with mild steel pins and galvanized iron screws. The size of the butt hinges for shutters of doors, shall be 100mm long where as the size of the parliamentary hinges (wherever to be provided) for shutters of doors shall be 125mm long (reveal) when open. The size of butt hinges for shutters of windows/fan light shall be 75mm , width of hinges for doors/windows/ventilators shall be suiting to the thickness of the shutters as shown on Drawing/s.
- a. Each shutter of door shall be provided with three numbers of butt/parliamentary hinges as required.
 - b. Each shutter of the window / ventilator shall be provided with two numbers of butt hinges / parliamentary hinges as required.
- 10 Rates quoted for shutters of doors shall include for T.W/H.W. beading/T.W./H.W. planted bead for fixing panels of shutters or doors, wherever required to be provided. Rate shall include for painting of beading.
- 11 Rates quoted for frames of doors, windows and fanlights shall include for M.S. holdfasts of size $300 \times 35 \times 6\text{mm}$ unless otherwise specified, including grouting the same in P.C.C. 1:2:4 of required size as per detailed Drawings and shall be provided viz. 6 numbers per door, 4 Nos. per window and 2 Nos. per fanlight. M.S. holdfasts in concrete work shall be fixed with the help of coach crews of suitable length with raw/plugs.
- 12 Timber in contact with Masonry or Concrete shall be coal tarred or creosoted before fixing and rates quoted shall include for the same.
- 13 Rates quoted for woodwork and joinery shall include for rebates, joints, chamfers, mouldings, grooves, beads, laps, rounded angles, notches, nails, screws, pins, etc.
- 14 All woodwork wrought and framed shall be measured not in cubic metres as fixed except in the following: The sectional area of mouldings, doors and window/fanlight frames

shall be taken as the area of the least square or rectangle from which such a section can be cut.

- 15 Unless otherwise mentioned, length of the door/window/fanlight frames shall be measured out to out i.e. the straight length of the tenons shall be added. Vertical member of door frames shall be embedded in the floor 40 to 50 mm deep or as shown on the drawing and buried length of frame will be added to sight length. Length shall be measured nearest to a centimeter. No horns shall be provided.
- 16 Shutters of doors, windows and fanlights shall be measured net in a closed position covering rebates of the frame. Overlap of two shutters shall not be measured.
- 17 For louvered windows/fanlights, the area shall be measured for inside to inside of frame. Rates shall include for the T.W./H.W. beading required for fixing louvers as shown in the Drawing (including painting to beading).
- 18 Hardware for doors and windows shall be as manufactured by one of the manufacturer/s as per the list attached.
- 19 All hardware shall be fixed with screws to match the hardware and rates quoted shall include for the same
- 20 The rates for all wood work are inclusive of two coats of Synthetic Enamel Paint over a coat of wood primer to all visible surfaces.
- 21 Measurement of shutters will be opening in door/window frames i.e. inclusive of rebate opening.
- 22 Measurement of glazing, wherever to be paid separately, will be paid for opening in shutter frames for glass fixing i.e. length and height including beading area.

1.FLOORING & FINISHING

4. INDIAN STANDARDS

All relevant standards as specified in Section - II concrete and mortar shall be applicable

The Indian Standards to be followed are

- 1) IS 1237 Specification for cement concrete flooring tiles.
- 2) IS 1443 Code of practice for laying and finishing of cement concrete flooring tiles.
- 3) IS 2114 Code of Practice for laying in situ terrazzo floor finish
- 4) IS 2571 Code practice for laying in situ cement concrete flooring
- 5) IS 383 Specification for coarse and the aggregates for natural sources for concrete
- 6) IS 412 Specifications for expanded metal steel sheets for general purposes
- 7) IS 1542 Specifications for sand for plaster.
- 8) IS 1635 Code of practice for field slaking of building lime and preparation of putty
- 9) IS 1661 Code of practice for application of cement and cement - lime plaster finishes
- 10) IS 2402 Code of practice for external rendered finishes
- 11) IS 2645 Specifications for integral cement waterproofing compound.

5. Wherever specified Terrazzo/Marble Mosaic tiles in flooring shall be 250 x 250 x 20mm of approved colour and shade. Thickness of wearing layer of the tiles shall not be less than 6mm
6. Terrazzo/ mosaic tiles of light shade shall be in white cement, and dark shades shall be in Ordinary cement. The same shall apply in case of in situ Terrazzo/Marble mosaic, Cement tiles and Cement Concrete floors if required to be finished in light, medium or dark shades. Rates quoted for light or dark shades for tiles as well as for in situ terrazzo / Mosaic and Cement Concrete finish shall include for necessary colouring pigment also.
7. Size of marble chips for Terrazzo/ Mosaic tiles shall be varying from the smallest upto 20mm size and shall be in required proportion and of approved colour and shade and rates quoted for Terrazzo/ mosaic/ in situ mosaic finish shall include for the same.
8. Terrazzo / Mosaic/Cement tile/Kotah/Shahabad/Dholupur/Cuddahpah tandur stone/Marble etc. and white Glazed/ceramic tiles in flooring, skirting, dado treads and risers shall be laid as follows and rates quoted shall include for the same.
 - (a) Flooring and Treads of steps/staircase shall be laid on a screed of cement mortar 1:6, 20mm thick average and floated in neat cement slurry, unless otherwise specified.
 - (b) Skirting, dado and risers of steps/staircase shall be fixed on backing of cement mortar 1:3, 12mm thick, with thick Cement paste.
 - (c) Joints shall be finished neatly with White/Coloured cement mixed with pigment to match the colour of corresponding tiles/stone.
 - (d) Tiles/Kotah/Dolpur/Cuddahpah/Shahabad/Tandur stone slab in flooring shall be machine polished and tiles/stone in dado, skirting, treads and risers shall be hand polished.
9. In situ Mosaic flooring, treads etc., shall be 40mm thick overall (under layer 30mm thick and top layer 10mm thick). In situ Marble dado. Skirting shall be 20mm thick overall (under layer 12mm thick and top layer 8mm thick). Under layer for flooring and treads shall be cement concrete 1:1:5:3:5 and for dados and skirting, the mix for under layer shall be 1:3 cement mortar. The proportion of cement to chips of smallest to 20mm size in required proportion and in top layer shall be 1:2. Chips shall be of approved colour and shade. Flooring shall be machined polished whereas treads, skirting and dados shall be hand polished. Rates quoted shall include for all the above factors.
10. Cement concrete flooring when indicated to be coloured shall be rendered with 6mm thick Cement plaster consisting of 1 part of ordinary cement to 3 parts of Sand, coloured with addition of mineral pigment of approved shade, thoroughly mixed with cement when dry. The quality of colouring pigment for coloured concrete flooring shall be such as to produce the required shade. This top layer of 6mm thick cement plaster mixed with colouring pigment shall be laid immediately after laying concrete for flooring.
11. Cement concrete flooring (plain/coloured) laid in single layer shall be finished smooth and will have no trowel marks on the surface. If ordered, hand polishing with Carborundum stones shall be done at no extra cost.
12. The thickness of plaster specified is the minimum thickness required over the proudest part of the wall and all during out shall be included in the rates quoted.
13. Internal cement plaster to brick walls, columns, beams etc., shall be 12mm / 15mm thick R.C.C. slab soffits shall have Cement plaster upto 12mm thick. External Cement plaster shall be 20mm thick in two cats (under coat 12mm thick and finishing coat 8mm thick) except for R.C.C. member not flush with brick work which shall be 12mm thick in two

coats (under coat 8mm thick and finishing coat 4mm thick) such as R.C.C. fascias, chajjas, canopies, drop walls, beams, ribs, projected slab, etc., unless otherwise specified.

14. Rates quoted for plastering and finishing items shall include for jambs, sills, drip mould, brands, forming grooves, chamfers, covered angles, arises etc., and such projections which shall not be measured separately and paid for.
15. Rates quoted for painting and colour washing etc., shall include for providing shade of approved colour and manufacture.
16. In case of painting, white washing and colour washing items, although number of coats are specified contractors will have to do additional coats, if well finished surface is not obtained to the satisfaction of Executive Engineer and there shall be no extra payment on account of this.
17. Sand for mortar bedding for floors shall be from approved source shall conform to IS:2116-1980 as applicable to unreinforced Masonry work.
18. Sand for plaster shall be from approved source and shall conform to IS: 1542-1960 as applicable to internal wall and ceiling plastering and external wall plastering.
19. Terrazzo/Marble mosaic/cement tiles shall be of good quality conforms to relevant ISI specifications.
20. Cement waterproofing compound wherever mentioned shall be manufactured by one of the manufacturer/s as per the list attached and as per manufacturer's specifications. The rates shall include for the same.
21. Acrylic Plastic Emulsion Paint wherever mentioned shall be manufactured by one of the manufacturer/s as per the list attached and as per manufacturer's specifications. The rates shall include for the same.
22. Flat Oil Paint for external or internal surfaces wherever specified shall be as manufactured by one of the manufacturer as per the attached list and shall be applied as per the manufacturer's specifications. The rates shall include for the same.
23. Synthetic enamel paint (first quality) shall be manufactured by one of the manufacturers as per the attached list and shall be applied as per manufacturers specifications. The rate shall include for the same.
24. Textured paint/cement paint/Oil Bound distemper etc., shall be as manufactured by one of the manufacturer's as per the attached list and shall be applied as per manufacturer's specifications. The rates shall include for the same.
25. Tolerance for Tandur/Shahabad/Kotah/Dholpur/Cuddahpah Marble stone flooring.

The thickness of the slabs shall be as specified in the description of items. Tolerance of $\pm 2\text{mm}$ shall be allowed for the thickness. In respect of length and breadth of slabs, a tolerance of $\pm 5\text{mm}$ shall be allowed.

23. Ceramic tiles shall be as manufactured by one for the manufacturer/s given in the list attached and as per manufacturer's specifications. These tiles in flooring, skirting, dado, treads and risers shall be laid in accordance with Clause No.5 (a) to (c) under flooring and finishing of Trade Preambles and rates quoted shall include for the same.

2. WATERPROOFING

1. INDIAN STANDARDS

Indian Standards to be followed are:

All relevant standards as specified elsewhere in this volume are applicable .

IS: 6494 Code of practice for water proofing of under ground reservoirs and swimming pool.

2. WATERPROOFING - "CETROOF" TREATMENT : (CEMENT BASED WATERPROOFING TREATMENT THROUGH SPECIALIST AGENCIES)

(I) Terrace Waterproofing

Terrace waterproofing shall be "CETROOF SURFACE TREATMENT" (Permanent waterproofing treatment) by one of the Specified Agencies mentioned in the list attached and shall be as per their Specifications, and shall carry 10 years Guarantee against leakage.

This Treatment shall start directly over R.C.C. slab and shall include for providing and laying of brick bat coba with necessary gradient for the easy flow of water. The coba shall be done in special waterproof mortar and shall be finally covered with "CETROOF" waterproof jointless plaster, finished smooth with trowel in grey Cement colour, marked into 30 x 30 cms false squares. The treatment shall be carried along the inside of parapet or other adjoining walls, upto a height of about 300mm in the shape of round vata (rounding off). The surface provided shall be hard and tough, suitable for all normal domestic purposes. Rate quoted shall include for making round vata and also for tucking the treatment on the vertical face of the parapet for tucking. Rate quoted by the Contractor shall include for the above waterproofing treatment of Specialised-Agencies, with all overheads and profits.

Mode of measurement for cetroof treatment over terrace:

Unless otherwise specified in the item of Schedule of Quantities, flat area covered between inside of the parapet wall (unfinished) shall get measured. To this the area of the vertical surface treatment calculated by taking the inside perimeter of the parapet wall measured from finished horizontal "Cetroof" treatment shall be add. In case the treatment is continued over the horizontal portion of the parapet on top the same shall also be added to the areas calculated as above.

(II) Toilet Waterproofing:

Toilet waterproofing by approved specialist firm under guarantee, of 10 years.

- (a) the main contractor shall, while the concrete is still green, carry out smooth cement punning in this layer to both bottom and sides of sunk portions at the time of concreting of the slab.
- (b) The brick bats from well-burnt bricks of about 40mm size completely saturated with water shall be used for filling in sunk portions of toilets including space around W.C. pan.
- (c) The surface of sunk-portion where waterproofing is to be done shall thoroughly cleaned with wire brushes. All loose scales shall be removed and dusted off. The

- cleaned surface shall be treated with neat cement slurry admixed with acrylic waterproofing compound to penetrate into crevices and fill up all porosities in the surface. The cracks observed, if any, in the slab shall be appropriately mortar.
- (d) After treatment at (c) above, brick bats fully saturated with water shall be laid in position within layers of cement mortar 1:4 duly admixed with acrylic waterproofing compound. The topmost layer of brick bat shall not be covered with cement mortar.
 - (e) Treatments at II(g) shall follow except that top layer will be 12mm thick and finished rough.
 - (f) This item shall be carried out after nahany traps, W.C. pan, all pipes are laid in position and are duly jointed the treatment shall be worked well around the nahany traps. P or S traps, pipes and their joints, holes made in the walls shall also be treated suitably.
 - (g) 12mm thick waterproof plaster in cement mortar 1:4 with acrylic waterproofing compound shall be carried out upto proposed height of dado in the toilets. Before carrying out waterproofing treatment on the wall, the wall surface shall be thoroughly cleaned the joints of brick work shall be raked out if required, treatment of cement slurry admixed with acrylic waterproofing compound be carried out to the wall. Junction of wall and top of slab/beam shall be treated with cement slurry with acrylic, water proofing compound by injection method.

Mode of measurement for toilet water proofing :

- I. The filling of waterproof brick bat coba in sunk floors of toilet blocks, shall be measured in Cum as actually laid at site to the required level.
 - II. Waterproofing plasters treatment to floor and walls of toilet block above the sunk slab/beam shall be measured separately in Sqm as actually provided at site over the required areas.
- (a) In case, Waterproofing work (other than the terrace) be executed by the main Builder's Contractor (if mentioned in Schedule of Quantities) then the Defects Liability Period for these items shall be 12 months as stipulated in Appendix to conditions of contract.
- 3) Rates of specialist Waterproofing treatment under I and II to include for following:
 - (a) Contractor shall obtain a guarantee for a period of 10 years from the Specialist Agency carrying out the work and shall be jointly responsible for any defects noticed in the work during the above period.
 - (b) Rates quoted by the Main Builders Contractor shall include for the above water proofing treatment by one of the Specialised Agencies with all overheads and profits to execute the work and no extra will age paid.
 - (c) Rates quoted by the Contractor shall allow for the leakage test to be carried out as stated below. Any leakage/dampness noticed shall be rectified by the Contractor at his own cost.
 - 4) Waterproofing work shall be guaranteed for ten years in approved proforma (see Annexure R attached herewith acceptable to the Employer, on a stamp paper of required denomination. This guarantee will be given by the specialist agency carrying out the work directly to L.I.C. of India and counter signed by the Main Builder's Contractor and furnished to LIC of India as soon as the work is virtually completed and before the final bill is settled.

Although the waterproofing work is guaranteed by the Specialist Agency for ten years, the Main builder's contractor shall be responsible, if at any time during the defects liability period, the surfaces treated for waterproofing by the specialists Agency gives way to the influence of water either due to the inadequacy of the work carried out or used or for any other reason whatsoever relating to materials,

workmanship etc, and shall be liable without any extra cost and inconvenience to the Employer or the occupants to carry out the necessary remedial measures as and when required during defects liability period.

5) LEAKAGE TESTS

(Applicable to all types of waterproofing treatments to terrace and toilet blocks).

After completion of waterproofing work of terraces as well as toilet blocks the leakage test shall be carried out by impounding the water 75mm to 150mm deep, over the surfaces treated for a period of 10 days, without any extra cost.

Joint inspection shall be carried out by the Contractor daily with LIC of India's representative to find out leakage/dampness of the surface if any. In case any leakage/dampness is noticed, the same shall be rectified by the Contractor without any extra cost to LIC Rates quoted by the Contractor shall allow for the above test also.

(J) METAL PACKING

1. Material

Coarse aggregate used for metal packing shall be crushed or broken stone, hard, durable and free from excess of flat, elongated, soft and disintegrated particles, dirt and other objectionable matter. Grading shall be as referred in table 1.B of the specification for Builder's work.

2. Sub base

Prepared sub-base surface as detailed in clause 3.0 of this section shall be uniformly spread with well-graded metal of size 63 mm down graded. Templates shall be used for levelling. Levelling shall be true and checked with 3m straight edge. Any raised areas or depressions of more than 12.5mm shall be corrected. This shall be rolled with power wheel roller of 8 to 10 tons as required or as directed for the intended purpose. Rolling shall continue till aggregate is thoroughly keyed and the creeping of the aggregate ahead of the roller is no longer visible. The rolled surface shall be checked and all irregularities corrected by loosening the surface, adding or removing necessary amounts of aggregate and re rolling until the complete area conforms to the required datum.

3. After the coarse aggregate has been thoroughly keyed and set by rolling, screening shall be carried out to fill the interstices. This shall be in 3 to 4 layers. Material shall be dry and no sprinkling of water shall be allowed.

4. Mode of measurement:

The metal packing shall be measured in cubic metre. Considering the compacted thickness as specified in the Schedule of Quantities.

(K) MISCELLANEOUS

1. Reinforcement in R.C.C. items shall be measured and paid separately under respective tender items.

2. Performed expansion joint filler and sealing compound shall be of approved make and shall conform to I.S. Standard IS: 1838-1961 (Performed fillers for expansion joint in concrete non-extruding and resilient type bitumen impregnated fiber) and IS 1834-1961

(sealing compounds not applied for joints in concrete) respectively and other relevant Indian Standard Specification.

3. Sizes of wood shall be finished sizes.
4. Asbestos Cement (A.C.) Plain, trough or corrugated sheet shall be of the best quality of approved manufacturer as given in the attached list. The sheets shall be free from cracks, chipped edges or corners and other damages.

**WATER SUPPLY, INTERNAL SANITARY INSTALLATIONS
AND DRAINAGE WORK-SCHEDULE OF QUANTITIES**

PREAMBLES

1. **GENERAL** : These preambles apply to all the sections of the "Schedule of Quantities" although they may not be repeated later.
2. In case any variation or discrepancy is found between the description in the schedule of quantities will take precedence over the specifications for sanitary work.
3. **RATES TO COVER** :
 - a. Whether specifically mentioned or not, the contractor should cover in the rates quoted by him in the schedule of quantities , for all the conditions, materials and labour (up to incorporation in acceptable work) covered in this preambles. The contractor should also cover in his rates for the method of work, cost of materials, labour etc., to comply with the "General specifications" "General instructions to contractors", "Conditions of Contract", "Special Conditions (if any)" and all documents of this contract.
 - b. The Contractor's rates shall cover for all materials, tools and plants, scaffolding and everything necessary, for the proper execution of the work to the satisfaction of the Chief Engineer. All materials and workmanship used in the execution of the work shall be the best or first quality and description unless otherwise stated. All materials or procedure or specifications for work, unless otherwise stated, shall conform to the current Indian standard whether or not specific mention is made thereof. The contractor shall be responsible for and shall replace or make good at his own expense, any materials lost or damaged, or of quality not approved.
4. **SUPPLY AND FIX** : All rates shall include for "supplying and fixing" although the same may not have been mentioned in the items of the schedule of quantities. Words "providing and fixing" where used shall have the same meaning as "supplying and fixing".
5. **DESCRIPTION OF ITEMS CLARIFICATION** : Description of item shall mean its description in all relevant parts of the tender including that described in these preambles, General specifications, General instructions, etc. Every care is taken to describe an item as clearly as possible. If meaning of any of the items is not clear,

the contractor is advised to have the clarification in writing from the office of the Dy Chief Engineer (I/C).

6. **SAMPLES** : The contractors shall furnish at the earliest possible opportunity before work commences at his own cost, any samples of materials or workmanship that may be called for by the Executive Engineer for his approval and any further samples in case of rejection until such samples are approved. Such samples when approved shall be the minimum standard for the work to which they apply. Rates quoted shall cover for such preliminary work, which shall not be paid for.
7. **MUNICIPAL CLEARANCE** : All work shall conform to the description given for each of the items, in addition to the Bye-laws of the Municipality/Public Health Authority within whose jurisdiction the items are to be executed. Contractor shall obtain approval to drainage and water supply work and work shall be considered as completed only when the Contractor produces "No Objection and completed certificate" from the Municipal/Public Health Authorities. Rates quoted shall include for the same.
8. **LICENSED PLUMBERS** : All sanitary and plumbing work shall be carried out through licensed plumbers, as per the bye-laws and regulations of the concerned Municipal Authorities. The Contractor shall complete all the formalities of Local Municipal Authorities in respect of the work covered under this tender including getting the water supply and drainage plans approved. After completion of work the Contractors shall obtain the drainage and water supply completion certificate including water sufficiency certificate from the Municipal Authorities. No charges whatsoever, either professional or Municipal, including any deposits or any other charges required to be paid for getting the materials tested and approved from the Municipal Authorities etc., obtaining permissions, certificates etc., will be paid to the Contractor and the rates be based accordingly.
9. **JOINTS**: All joints in piping shall be made properly so as to be mechanically sound and leak proof and shall satisfy water and smoke tests. Leaking or sweating joints shall be remade to Executive Engineer's satisfactions, at Contractor's expense.
10. **QUOTED RATES**: Rates quoted shall allow for the following :-
 - a. Excavation in all types of soil except in hard rock, refilling and carting away surplus materials to Contractor's own dump or as directed, for manholes,

inspection chambers, gully traps water supply and drainage line of appurtenances.

- b.** All subsidiary fastenings, fittings and fixtures required even though they may not have been specially described under particular item.
- c.** All fittings fixed to walls will have approved clamps fixed to wooden plugs.
- d.** Two coats of approved ready mixed paint over red oxide primer to all exposed iron or wood work including C.I. brackets, G.I. pipe and C.I. pipes. All G.I. pipes whether laid in ground or concealed in walls or floors shall be coated with bitumen, wrapped with hessian and again coated with bitumen. All C.I. pipes fixed in chase or concealed in floors shall be given three coats of bitumastic paint. The inside of flushing cistern and fitting shall be painted with approved bitumastic paint and outside of the cistern, brackets, overflow and flush pipes etc., shall be painted with two or more coats of white zinc or any other colour over a red oxide primer. Lead pipe shall be painted in similar manner as C.I. or G.I. pipes. A.C. pipes shall be painted to match the surrounding finish.
- e.** Making holes through concrete/masonry, making good the work and redoing and re-plastering the same to match the surroundings.
- f.** For all pipes, rates shall be inclusive of all fittings and specials such as couplings, bends unions, cleaning eyes, tees, plugs, reducers, etc., and making joints and connections to valves, tanks, pumps and existing pipe lines etc., as required.
- g.** Cutting chases for concealing pipes in walls and floors and making good with cement plaster.
- h.** Fixing of drainage pipes and rainwater pipes 5 cm away from the wall by means of holder bats fixed to wooden plugs.
- i.** Rates quoted shall include for hoisting to and work at all levels and lift of materials shall not form any criterion for any extra claims.
- j.** Cutting into existing manhole/chambers above the invert level of the existing drain but without drop arrangements and not disturbing existing benching of manhole/chamber including making good the same.
- k.** Disinfection and flushing of water supply mains as directed.

I. Testing the installations by smoke and water test.

11. **ADEQUACY** : The Contractor shall be responsible for the adequacy and efficiency of the entire plumbing system and if in his opinion he finds any serious objections to the system shown on the drawings he shall set forth his objections or his suggestions to ensure adequacy and efficiency of the said system and notify the Chief Engineer before proceeding with the work.
12. **FITTINGS** : All sanitary ware and fittings shall be white glazed VITREOUS CHINA of approved make.
13. **QUALITY OF PIPE & FITTING** : All C.I. pipes and fittings shall be of heavy quality and approved make.
Plumbers brass work or gunmetal valves and fittings shall be of heavy quality and of approved make with tested ISI mark. All sanitary appliances, pipes and fittings shall be of approved make and brand as per list of approved makes/brand of materials mentioned elsewhere in the tender.
14. **RATE TO PROVIDE FOR** : Rates for items with excavation shall include for shorting, timbering, strutting etc., for protection of excavated sides, bailing out water due to rains or subsoil water if encountered and de-watering by pump wherever required until all work below water level is finished to the satisfaction of the Executive Engineer.
15. **THICKNESS OF PLASTER** : The thickness of plaster where specified is the minimum thickness required over the proud part of the wall and all dubbing out shall be included in the rates quoted. Sand for mortar and plaster shall be clean, free from salt, loam, clay, shells, vegetable matter and fit for use in the opinion of the Executive Engineer.
16. **WATERPROOFING** : Cement waterproofing compound wherever mentioned shall be of approved make and use as per manufacturer's specifications. The rates quoted for items where waterproofing compound is specified shall include for the same.
17. **COMPLETION CERTIFICATE**: The Contractor shall obtain all necessary permissions, fill up all the requisitions, test reports etc. He shall include all such costs incidental to the work.

The Contractor shall obtain drainage completion certificate and water sufficiency certificate from the authorities without any obligation.

Technical Specifications for factory made modular Furniture

1. GENERAL:

The hardware shall be of approved manufacturer or supplier well made and equal to in every respect to the samples deposited with LIC Of India.

Screws shall match the finish of the article to be fixed and to be round or flat headed or counter sunk as required.

The contractor should cover up and protect all surfaces with suitable protective material, renew as necessary and subsequently clean off and clear away on completion.

Aluminum, CRC steel and stainless steel shall be of approved manufacture and suitable for its particular application. Generally the surface of Aluminum shall have an anodized finish and both shall comply with samples approved by the LIC Of India. The surface of A11, MS/CRCA components shall undergo 7 stage pre- treatments.

All Steel, brass, bronze, Aluminum and stainless steel articles shall be subjected to a test for strength, if so required by the LIC Of India.

The modular furniture shall be manufactured as per manufacturing process as per ISO Standards for repeatability.

2 The Work Station Components shall be of following Specifications.

Low height Partition Panels:

Height : 1200 Mm approximately.

Thickness : 65mm minimum(Overall)

Finish: Part Laminate and part fabric finish.

- Shall be tile partition system with provision for height enhancement.
- There shall be provision in the partition to allow for passage of wire throughout the length and height of the partitions and switches /sockets could be incorporated at any location within the panel. This is to allow separation of data and power cables by a minimum specified distance of 300 mm.
- Shall have 100% wire management through framework.

2.1 FRAME WORK:

- The framework shall be made from 16 gauge thick roll- framed MS sections for core frame & for intermediate members. The core frame consist of a welded rectangular frame made of vertical roll- framed sections (max spacing 150mm) welded to a horizontal sections to form a rigid structure with a hinged raceway at the base & below worktop level. The intermediate horizontal members shall fit into slots on the vertical members of the frame to accommodate the tiles of different sizes. The members shall have slots at regular interval. The slots should serve the double purpose of horizontal modularity as well as allowances for passing the cables throughout the height of partition. These slots shall be provided with plastic rings for a softer edge where wires are being passed.
- Pre-treatment : All MS and CRC components shall undergo 7 stage pre treatment.

- Powder Coating: Shall have Electrostatic powder painting with epoxy polyester powder having minimum thickness of 50 microns. Powder painted surface shall be free of blisters and should be tested for impact resistance, Hardness against scratch as per relevant IS standards.
- In Case of Aluminum framework, it shall be of minimum 2mm thick (14guage), duly powder coated as mentioned above.
- Stability: Stability of the partition shall be independent worktops, etc. cantilevered to it. A stable configuration shall be confirmed with layout. The partition configurations are to be free standing and not require any indentation to be done in the floor, walls or ceiling . The extruded frame should be sufficiently rigid such that worktops and other accessories can be cantilevered at any desired point without affecting the overall stability.
- The partition panes shall have levelers in the bottom with a allowance for adjustment of up to +/- 25mm.

2.2 End Trims / Top Cap/ Exposed Corners:

- End trims/ Top Cap/ Exposed Corners shall be of extruded sections of Aluminum (2.0 mm thk) with epoxy powder coating finish of thickness not less than 50 microns. These shall be accurately fixed by means of hidden connections.

Intermediate Raceways / Bottom facias for Electrical Wiring & Wire Management:

- All partition panels shall be provided with hinge type bottom raceway (100 mm high) & intermediate raceway below work top level. The bottom raceway accessible from both side & intermediate raceway shall be accessible from inner side only. The cover plate shall be of 1mm th MS sheet duly powder coated of thickness not less than 50 microns. Necessary slots shall be provided on the facia / cover plate as per the sample provided for fixing switches. Provision shall be made for fixing the sockets on the inside of the frame with plastic snap off strips on the hinged raceways to allow wires to pass through. The ends of raceways shall be slotted for incoming & outgoing. Wires.

2.3 Facia Tiles:

- a) Pre- laminated Tiles
 - The laminated tiles shall be of 12mm th Pre-laminated particle board (interior grade) of approved shade, fitted with clips on rear side. The pre-laminated particle board shall be OSL of interior grade bonded with BWR grade phenol formaldehyde synthetic resin, confirming to IS:12823. The edges of the tiles shall be lipped with PVC edge lipping. All tiles should be gasketted to their frames to minimize sound and dust transmission.
- b) Tackable tiles / Pinup board.
 - The tackable, tile shall be made up of 0.6mm th GI sheet with an inlay of 6mm th cross link foam having density of 50-60 Kg/m³. Fabric shall be with fire retardant coating and scotch guard for strain resistance, glued to the GI sheet.
- c) Fabric finish panel/ Non tackable Tiles:
 - The tackable tiles shall be made up of 0.6mm th GI sheet with an inlay of 8mm th poly urethane foam having density of 20 Kg/m³. Fabric shall be with fire retardant coating and scotch guard for strain resistance, glued to the GI sheet.

2.4 Work Top

- Work top shall be of 25mm thick plain particle board interior grade confirming to IS: The front edge with PVC flat lipping. Bottom shall have baker lamination of 0.6mm thickness.
- Non Working edges of the work surface shall be provided with machine pressed 2mm thick PVC lipping.
- Work tops shall be mounted onto the partition panels for workstations by means of cantilever brackets made from minimum 18 guage CRCA steel duly powder coated or by powder coated MS brackets or by any other means as per manufacturer's specifications. The worktops shall be sufficiently supported / reinforced to take weights of computers, printers, person etc...
- Work surfaces shall be provided with circular cut outs as per the requirement. These cutouts shall be provided with ABS covers.
- Vertical supports shall be gable end finished same as tops in post formed laminations particle board.

2.5 **Key board pullout tray:**

- Key board shall be made from 1.2 mm thick CRCA steel duly powder coated with in built LHS/RHS mouse pad as per approved sample. The dimensions shall be as per specifications/ drawing. The tray shall have facia of laminated particle board. The key board tray shall have locking as well as tilting arrangement.
- It shall be mounted on MS powder coated telescopic channels for noiseless and smooth sliding.

2.6 **Pedestal Drawer Unit:**

- The carcass shall be made from 0.8 mm thick Galvanized MS sheet & drawers shall be made from 0.6 mm thick Galvanized MS sheet duly powder coated. The drawer unit shall have two drawers at top & one filing drawer.
- Pre treatment: All MS components shall undergo 7 stage pre- treatment & powder coating.
- Drawers shall be mounted on GI telescopic channels for noiseless and smooth sliding.
- Shall be provided with anti tilt mechanism with the help of counter weight to avoid the unit from tilting when drawers are in use.
- Shall be provided with master key/ lock with minimum 2 set of keys.
- Shall be stationary and necessary rubber bushing at bottom/ glide screws with height adjustment upto +/- 10 mm.
- On completion of the project, the contractors shall have to hand over all the keys with individual key chain bearing respective key number and work stations number.

2.7 **CPU shelf:**

- Movable type MS powder coated adjustable CPU trolley of size as specified in drawing for placing any size of CPU unit, made out of 16 swg powder coated MS sheet with 4 nos lockable type castors etc... complete.

2.8 **Power Strips:**

- Cutouts shall be provided for electrical sockets above/below table tops as per drawings.

2.9 connectors:

- Aluminium / CRCA steel/ MS connectors shall be supplied along with the frame.

3 FREESTANDING TABLES:

- The various components of freestanding table shall be connected with concealed type knockout fittings suitable for particleboards.

3.1 TOP:

- Tops shall be of 25mm thick plain particle board interior grade confirming to IS: in one Piece with Front Edge with PVC flat lipping including MS Powder Coated Brackets to Fix With Gable Ends. Bottom shall have a baker lamination of 0.6mm thickness. Non working edges of the work surface shall be provided with machine pressed 2 mm thick PVC lipping.

3.2 Gable End:

- Shall be made out of 25mm thick plain particle board interior grade confirming to IS. All edges shall have 2mm th PVC lipping, with leveling bolts. The gable end shall have in the bottom with a allowance for adjustment of upto +/- 25 mm.

3.3 Modesty Panel:

- Modesty panel/Apron shall be made out of 25mm thick particle board in one piece interior grade confirming to IS :. The Particle board shall be laminated with laminate of 1 mm thickness of approved shade. The edges shall have 2mm thick Hot Pressed PVC lipping of Matching Colour.

4 Side Board/ Credenza.

- The various components of side credenza shall be connected with concealed type knockout fittings.

4.1 Top:

- Tops shall be of 25 mm thick plain particle board in One Piece Interior grade confirming to IS. The front edges of work surfaces shall be with PVC flat lipping including MS Powder Coated Brackets to fix with Gable Ends. Bottom shall have a baker lamination of 0.6mm thickness. Other edges of the work surface shall be provided with machine pressed 2 mm thick PVC lipping.

4.2 Carcass:

- The carcass & one shelf at middle shall be of 18 mm th. Pre laminated particle board(OSL) interior grade. The edges shall be finished with 2mm th PVC lipping.

4.3 Shutter:

- The shutters shall be made up of 18 mm thk. prelaminated particle board (OSL) interior grade with sliding channel with double ball bearing for smooth operation. The edges shall be finished with 2 mm th PVC lipping.

4.4 **Locks/ Hardware:**

- The unit shall be provided with 7 lever central lock, one tower bolt & Two handles of approved make & type.

5 **Notes;**

- Wherever laminate, fabric, powder coated metal sections are mounted it shall be of approved shade and make.
- The physical parameters and the functional requirements are indicated in the drawings.
- In each wing there are different combinations of partition to any desired configuration such as straight T,L,U,C,+ etc. The tender is instructed to carefully go through the layouts and provide the same.
- Minor layout modifications if required should be allowed at no additional cost, after placement of order.
- The contractor shall furnish shop drawings for the entire scope including sample to be used for various material within seven days of the receipt of instruction.
- Dimensional accuracy and discrepancy in the fit out of the work station shall be highlighted immediately.
- The contractor shall make necessary arrangement and erect Mockup Configuration for at least two alternatives at site at his own cost. Same shall be dismantled on receiving of instruction.
- Necessary As built drawing shall be furnished indicating workstation with its designated number.
- Necessary list shall be furnished in a tabular form indicating workstation numbers with respective key Nos.
- All the workstations should have provision for fixing master switch and one socket for telephone line on top of table for control of switches provided below table top.
- All Furniture including pedestal drawer units shall display the "LOGO"/MONOGRAM of the manufacturer.
- All post formed laminate wherever mentioned in the tender shall be of 0.8 mm thickness.
- All Particle boards/pre laminated particle boards wherever mentioned in the tender shall be of INTERIOR GRADE of approved make.

SPECIAL CONDITIONS REGARDING INSPECTION OF WORK**1. INSPECTION OF WORK :**

All works in course of execution or after execution in pursuance of the Contract, shall at all times be open to the inspection and supervision of the Executive Director (Bldg.) or his authorized representatives and the Contractor or his responsible agent, duly accredited in writing, shall at all such times, be present to receive writing, shall at all such times, be present to receive instructions/orders. The work during the progress or any time before settlement of the final bill, is also liable to be inspected by Chief Technical Examiner of the Central Vigilance Commission, New Delhi, on behalf of the Employer and this shall be also considered as an inspection by the Employer for all purpose.

2. PRECEDENCE FOR ACCEPTANCE :

If the contradiction or variance is observed in different components of the tender's the details clearly given in -

- a) "General Preamble" shall have the precedence over the relevant details given in General "Specifications".
- b) "Trade Preambles" shall have the precedence over the relevant details given in "General Specifications"
- c) The description of an item of the "Schedule of Quantities" shall have the precedence over the relevant details given in "General preambles", General "Specification" and "Trade preambles".

**GENERAL CONDITIONS FOR SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING OF AIRCONDITIONING SYSTEM.**

GUARANTEE:

The contractor shall be responsible for any manufacturing defect or defects in installation & performance and the same will be rectified immediately at his own cost to the entire satisfaction of Engineer-in-charge during Defect Liability Period of 12 months, reckoned from the date of virtual completion.

TRAINING TO STAFF:

During the erection and testing, the contractor will have to train personnel of LICI regarding operation and preventive maintenance of the AC units. Operating & maintenance instructions shall be supplied at the time of delivery of equipment at site without any extra charges.

MISCELLANEOUS:

The price quoted shall also be inclusive of followings :-

- i) MS angle support for holding the AC units as per standard installation.
- ii) Minor civil works like cutting holes, minor modification of existing pockets of ACs, etc. and throwing away any debris coming out of this work as per direction of Engineer in-charge of LICI and making good the same.
- iii) Suction and Discharge piping / Drain pipe layout drawing shall be prepared by the vendor and shall be got approved from LICI before installation of the same where ever required..
- i) The contractor shall also ensure to seal the gap between AC machines and wall opening by using rubber gasket / thermocol to prevent the leakage of cooled air and to minimize the vibration.
- ii) The contractor have to handover the original bills, Guarantee/ warranty and instruction manuals etc of purchase of AC machines to LICI on completion of defect liability period. The security deposit shall be released on deposition of the same only.
- iii) The air conditioning units to be installed shall be of latest model and shall meet the BEE specifications as mentioned in BOQ at the time of installation of the same.

- iv) The air conditioning units along with stabilizers and water coolers to be supplied by the original equipment manufacturer or their authorized representative only.
- v) The rates as mentioned in SOQ are inclusive of all taxes (except service tax), freight, excise duty etc. and nothing extra shall be paid on account of these.

**GENERAL CONDITIONS FOR MAINTENANCE OF FIRE FIGHTING SYSTEMS
DURING DEFECT LIABILITY PERIOD.**

- i. Quarterly checking up keeping and replacement of the any component or sub-components of the system for proper operation of the system.
- ii. During the Defect liability period the contractor will responsible to keep the Fire Fighting & Fire Alarm system in perfect running condition including fitting of parts accessories, repair etc,
- iii. In case of any defect cropped up, it shall be attended within 04 hours of getting information over telephone/ email as and when is required.
- iv. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- v. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.
- vi. Safety controls should be tested and replaces in case of malfunctioning.
- vii. Arranging demonstration / testing at least once in every three month.
- viii. Any defect in electrical items and control wiring of fire fighting systems should be attended.
- ix. The replacement of all the parts if any should be original, genuine make and old replaced should be shown or handed over to LIC Maintenance Engineer-in-charge. The material whichever needs to replace, should take prior approval from the Competent Authority.
- x. Ensuring proper working entire Fire Fighting & Fire Alarm systems.

Agreed and confirmed

Signature of company with seal and date

**GENERAL CONDITIONS FOR MAINTENANCE OF AIR CONDITIONING UNITS DURING
DEFECT LIABILITY PERIOD**

- i. Air Conditioning units shall be serviced once in three months.
- ii. In case any defect cropped up, it shall be attended within 04 hours of getting information over telephone as and when is required. If defect requires machine to be shut down for more than three days or to be taken to factory, a stand by machine has to be provided.
- iii. Company has to give proper authorization of Engineer/Supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- iv. A.C. units are to be left operative every time in summer/winter and all components including compressor to be checked properly.
- v. Compressor if found defective shall be replaced with new compressor of same make without any extra charges.
- vi. Entire refrigeration system to be checked if required gas shall be charged as and when necessary.
- vii. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.
- viii. Air filters to be cleaned and if required to be replaced.
- ix. Cleaning coil to be inspected and cleaned if necessary.
- x. Fan motor to be checked and defects noticed shall be attended.
- xi. Any defect in electrical items and central wiring to be attended.
- xii. At least one overhauling of units to be carried out during DLP period.

Agreed and confirmed

.....
Signature of company with seal and date

GENERAL CONDITIONS FOR MAINTENANCE OF LIFTS DURING DEFECT LIABILITY PERIOD.

- i. Monthly checking, up-keeping and replacement of the any component or sub-components of the system for proper operation of the system.
- ii. During the Defect liability period the contractor will responsible to keep the Lifts in perfect running condition including fitting of parts accessories, repair etc,
- iii. Apart from attending monthly services, the contractor shall promptly attend within three hours all breakdown calls as & when needed.
- iv. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.
- v. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- vi. Safety controls should be tested and replaces in case of malfunctioning.
- vii. Any defect in electrical items and control wiring of Lift should be attended.
- viii. The replacement of all the parts if any should be original, genuine make and old replaced should be shown or handed over to LIC Maintenance Engineer-in-charge. The material whichever needs to be replaced, should take prior approval from the Competent Authority.

Agreed and confirmed

.....
Signature of company with seal and date

**GENERAL CONDITIONS FOR MAINTENANCE OF SOLAR WATER HEATER DURING
DEFECT LIABILITY PERIOD.**

- i. Quarterly checking, up-keeping and replacement of the any component or sub-components of the system for proper operation of the system.
- ii. During the Defect liability period the contractor will responsible to keep the Solar Heater system in perfect running condition including fitting of parts, accessories, repair etc.
- iii. The scope of work includes repairing/replacement of parts to make the system functional within Defect liability period whenever a complaint is lodged by the user. The contractor shall attend the same within a reasonable period of time and in any case, the breakdown shall be corrected within a period not exceeding 3 days.
- iv. The replacement of the parts if any should be original, genuine make and old replaced should be shown or handed over to LIC Maintenance Engineer-in-charge. The material whichever needs to replace, should take prior approval from the Competent Authority.
- v. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of units and has to provide their contact number so that we can contact them as and when required.
- vi. Ensuring proper working of all components of units.
- vii. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.

Agreed and confirmed

.....
Signature of company with seal and date

**GENERAL CONDITIONS FOR MAINTENANCE OF ELECTRICAL SUB-STATION
DURING DEFECT LIABILITY PERIOD.**

- i. Quarterly checking, up-keeping and replacement of the any component or sub-components of the system for proper operation of the system.
- ii. During the Defect liability period the contractor will responsible to keep the Sub-station in perfect operating condition including fitting of parts, accessories, repair etc.
- iii. The scope of work includes repairing/replacement of parts to make the Sub-Station functional within Defect liability period whenever a complaint is lodged by the user. The contractor shall attend the same within a reasonable period of time and in any case, the breakdown shall be corrected within a period not exceeding two days.
- iv. The replacement of the parts if any should be original, genuine make and old replaced should be shown to LIC Maintenance Engineer-in-charge. The material whichever needs to replace, should take prior approval from the Competent Authority.
- v. The contractor has to give proper authorization of engineer / supervisor responsible for maintenance of Sub-station and has to provide their contact number so that we can contact them as and when required.
- vi. In case the services rendered by the contractor are not found satisfactory, during any time of defect liability period, LIC will engage some other agency to carry out the work at contractors' risk & cost and the amount spend shall be recovered from Security Deposit.

Agreed and confirmed

.....
Signature of company with seal and date

TIME AND PROGRESS CHART

Proposed construction of STC with Hostel at Pandeypur, Varanasi

COMPLETION TIME: 18 MONTHS

SI no	ITEM OF WORKS	TIME IN MONTHS																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	PRELIMINARIES																		
	Layout and excavation of foundation, including Anti termite treatment																		
2	CARCAS																		
a	R CC frame structure incl OH Tanks & Lift Room																		
b	Brick Masonary																		
3	FINISHING WORK																		
a	Internal Plaster																		
b	External Plaster																		
c	Flooring																		
d	Internal Painting																		
e	External Paiting																		
4	DOORS & WINDOWS																		
a	Windows																		
b	Doors																		
5	WATERPROOFING																		
a	Toilet waterproofing																		
b	Terrace waterproofng																		
6	SERVICES																		
a	Sanitary & Plumbing																		

SI no	ITEM OF WORKS	TIME IN MONTHS																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
b	Fire Fighting																		
c	Electrical Installations																		
d	Sub Station																		
e	LIFTS																		
f	Solar water Heating System																		
g	Air conditioing																		
7	INTERIOR FURNISHING incl. Furniture & chairs																		
8	EXTERNAL DEVELOPMENT WORK																		
a	External Drainage																		
b	water & Draingae connection																		
c	Rainwater Harvesting																		
d	Pavements																		
e	Borewell																		
f	Landscapping																		
9	Site Cleaning, Commisioning , Testing & handing over of Building																		

NOTE :

1. Default in compliance with this programme in the chart in any of its section shall entail operation of liquidated clause No.19 under "Condition of Contract" in whole or part of the sole discretion of the Chief Engineer.
2. With reference to Clause No.4 under "General instruction to Contract" unless the Contractor submits his version of time and programme Chart within 15 days of communication of acceptance of tender, this chart shall be deemed to be as agreed and submitted by him.

3. In consultation with Superintending/Executive Engineer, this time and progress chart can be amended to bring in conformity and extension of time granted by competent Authority during this currency of the contract.
4. Ancillary work should be started that all such work shall be completed before the date of completion mentioned in the Appendix to the condition of contract.

LIST OF TENDER DRAWINGS

ARCHITECTURAL DRAWINGS:

SL No	Drawing No	Description
1.	NCZ/ENGG/VAR/01/DR-AR-01	Site Plan.
2.	NCZ/ENGG/VAR/01/DR-AR-02	Ground Floor Plan.
3.	NCZ/ENGG/VAR/01/DR-AR-03	First Floor Plan
4.	NCZ/ENGG/VAR/01/DR-AR-04	Second Floor Plan
5.	NCZ/ENGG/VAR/01/DR-AR-05	Third Floor Plan
6.	NCZ/ENGG/VAR/01/DR-AR-06	Terrace Plan
7.	NCZ/ENGG/VAR/01/DR-AR-07	Front Elevation.
8.	NCZ/ENGG/VAR/01/DR-AR-08	Cross Section - xx
9.	NCZ/ENGG/VAR/01/DR-AR-09	Schedule of Windows
10.	NCZ/ENGG/VAR/01/DR-AR-10	Schedule of Doors
11.	-----	Schedule of Finishes
12.	-----	Tentative 3D View of the Proposed Bldg
13.	-----	Tentative 3D View of the Proposed Bldg

STRUCTURAL DRAWINGS:

SL No	Drawing No	Description
1.	NCZ/ENGG/VAR/01/DR-ST-01	Foundation Layout
2.	NCZ/ENGG/VAR/01/DR-ST-02	RCC Details of Foundation.
3.	NCZ/ENGG/VAR/01/DR-ST-03	RCC Details of Foundation.
4.	NCZ/ENGG/VAR/01/DR-ST-04	RCC Details of Foundation.
5.	NCZ/ENGG/VAR/01/DR-ST-05	RCC Details of Foundation.
6.	NCZ/ENGG/VAR/01/DR-ST-06	Key Plan of Column Layout
7.	NCZ/ENGG/VAR/01/DR-ST-07	Column Schedule
8.	NCZ/ENGG/VAR/01/DR-ST-08	RCC Details at GF Slab & Beam Framing Plan
9.	NCZ/ENGG/VAR/01/DR-ST-09	RCC Details at F.F Slab & Beam Framing Plan
10.	NCZ/ENGG/VAR/01/DR-ST-10	RCC Details at S.F. Slab & Beam Framing Plan
11.	NCZ/ENGG/VAR/01/DR-ST-11	RCC Details at T.F. Slab & Beam Framing Plan
12.	NCZ/ENGG/VAR/01/DR-ST-12	RCC Details at TERRACE Slab & Beam Framing Plan
13.	NCZ/ENGG/VAR/01/DR-ST-13	RCC Details of Beams at G.F.
14.	NCZ/ENGG/VAR/01/DR-ST-14	RCC Details of Beams at F.F.
15.	NCZ/ENGG/VAR/01/DR-ST-15	RCC Details of Beams at S.F.
16.	NCZ/ENGG/VAR/01/DR-ST-16	RCC Details of Beams at T.F.

NOTE: The Tender drawings are merely indicative of type and method of construction. The Drawings good for construction may vary from Tender Drawings.