



NATIONAL INSURANCE CO. LTD., MUMBAI REGIONAL OFFICE II,
4TH FLOOR, NATIONAL INSURANCE TOWER, STERLING CINEMA
BUILDING, 65, MURZBAN ROAD, FORT, MUMBAI- 400001

TEL.NO. 022-22017109

Website: www.nationalinsuraceindia.com

Tender No. : MBRO-II/ESTT/2018-2019/01

Date: 13-04-2018

1.TENDER DOCUMENT FOR

**“HERITAGE CONSERVATION & CIVIL / STRUCTURAL
REPAIRS, PLUMBING & PAINTING WORK AT NATIONAL
INSURANCE TOWER (PREVIOUSLY KNOWN AS STERLING
CINEMA BUILDING)”**

65, Murzban Road, Fort, Mumbai-400 001.

TECHNICAL & COMMERCIAL BID CONSULTANT ADVICE CONSULTANTS

UNIT NO. 20, 4TH FLOOR, ATLANTA ESTATE, SHIVNERI MARG,
VITBHATTI, NEAR VIRWANI INDUSTRIAL ESTATE, GOREGAON (E),
MUMBAI: - 400 063.

TEL. 022- 29270094 / TELEFAX- 022- 29272402

E- mail: info@adviceconsultants.in, Website: www.adviceconsultants.in

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2.MASTER INDEX

**NAME OF WORK: HERITAGE CONSERVATIONS & CIVIL AND
STRUCTURAL REPAIR & PAINTING WORK AT NATIONAL
INSURANCE TOWER, STERLING CINEMA BUILDING, 65,
MURZBAN ROAD, FORT, MUMBAI-400 001.**

PART – I: TECHNICAL BID

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3.NOTICE INVITING TENDER (NIT)

NAME OF WORK: HERITAGE CONSERVATION & CIVIL AND STRUCTURAL REPAIR & PAINTING WORK AT NATIONAL INSURANCE TOWER, STERLING CINEMA BUILDING, 65, MURZBAN ROAD, FORT, MUMBAI-400 001.

BIDDING DOCUMENT NO.:01/MBRO II/2018-19

National Insurance Company Ltd. invites sealed bids under single stage two bid system from competent and Eligible Contractors for Heritage Conservations, civil and structural repair work NATIONAL INSURANCE TOWER, STERLING CINEMA BUILDING, 65, MURZBAN ROAD, FORT, MUMBAI-400 001.

The work is split into Two Parts, PART-I: Technical Bid & PART-II: Price Bid.

The work shall normally involve the following:

The Scope of Work in general shall cover the following:

A) BRIEF OVERALL SCOPE OF WORK:

1. Dismantling/Removal of existing Heritage conservation & civil/structural/electrical items etc. and enabling works as per requirement and as per direction of Consultant.
2. Waterproofing works at different locations like terrace, overhead water tank, underground storage tank, brick walls etc. as directed by the Consultant.
3. Restoration of RCC members (beams/slabs/columns/foundations etc.) of the Building as directed by the Consultant.
4. Improvement of construction/laying/fixing of new flooring, doors, windows, brick walls, internal & external plaster, cladding, dado, skirting, plumbing works, sanitary works and painting, polishing etc. all complete as directed by the Consultant.

B) SCOPE OF SUPPLY:

1. No materials except construction power (on chargeable basis at per actual) shall be supplied by owner.
2. All the consumable / non consumable items required to complete the job shall be supplied by contractor at his own cost.

C) SALIENT FEATURES OF THE BIDDINGDOCUMENT:

- Sale Period : 16-04-2018 to 27-04-2018
- Last date & time for receipt of Bids: 02-05-2018, up to 2.30 p.m.
- Pre – bid meeting: 23-04-2018@3.00 p.m.
- Estimated Cost of Works:Rs. 1.86 crore
- Earnest Money Deposit (EMD) : 3,75,000/- (Rs.Three lakh Seventy five thousand Only)
- Cost of Bidding Document : 5,000.00+GST (Rs. Five Thousand plus GST only)
(Non–refundable)
- DD of EMD and Tender Cost along with physical copy of tender document to be submitted to the office of Regional Manager, Estate and Establishment Department, Mumbai Regional Office II, National Insurance Tower, Sterling Cinema Building, 4th Floor, 65, Murzban Road, Fort, Mumbai- 400 001
- Time Schedule: 9 Months from the date of LOI.

D)QUALIFICATION CRITERIA:

Agencies intending to participate in bidding shall fulfill the following qualification criteria:

Experience Criteria:

- The bidder shall have completed restoration/renovation works pertaining to old commercial buildings including its structural strengthening/retrofitting of heritage conservation & Architectural Works comprising construction management, procurement including supply, installation in a single contract value not less than Rs. 2 Crore of the contract value or two single contracts of value not less than Rs.1.5 Crore in each such contractor three single contracts of value not less than Rs. 1 Crore in each such contract during the last five years reckoned from the Bid Due Date.
- Bidder may also provide us a list of Public Sector Clients for whom at least one contract of value not below 50 lakhs has been satisfactorily completed during the last seven years.
- In support of meeting the experience criteria the Bidder shall furnish documentary evidence comprising work order copy and completion certificate, issued by owner/consultant.
- Contractor should have bank solvency of Rs.50 Lakhs minimum from scheduled /nationalized bank & should not be older than 6 months.
- No consortium or joint venture company will be acceptable.
- Failure to meet the above qualifying criteria will render the bid to be summarily rejected. Therefore, the bidder shall in his own interest furnish complete documentary evidence to meet the bidder qualifying criteria as given above.

FinancialCriteria:

- Annual Turnover of the Bidder shall be minimum Rs. 3 Crore per year average as per the audited financial results of the preceding financial years (2014-15, 2015-16 and 2016-17) up to the due date.
- Bidder shall submit audited balance sheet & financial statements including Profit & Loss Account, to establish Bidder's conformance to financial qualification criteria.
- Net worth of the bidder as per the latest audited annual financial results shall be positive.
- National Insurance Co. Ltd. reserves the right to use in-house data for qualification of Bidders.
- Bid submitted by any Agency who is on holiday list shall not be considered for opening and further evaluation.
- **Bidder submitting their Bid shall not be under liquidation, court receivership or similar proceeding.**
- The Bidder along with the Bid shall furnish documentary evidence to substantiate their claims for meeting the requirements specified in the Bidder's Qualification Criteria above.

Bidders should ensure submission of complete information/ documentation in the first instance itself. Qualification may be completed based on the details so furnished without seeking any subsequent additional information.

E) GENERAL

- National Insurance Co. Ltd. reserves the right to complete the evaluation based on the details furnished (without seeking any additional information) and in-house data, survey or otherwise.
- Total Scope has been defined in the Bidding Document
- Bidder shall furnish documentary evidence by way of copies of work orders, completion certificates and balance sheets including Profit and Loss Accounts, Certificate from Bank etc. along with the Bid to establish Bidder's conformance to qualification Criteria.
- Failure to meet the above Qualification Criteria (technical & financial) will render the Bid to be rejected. Therefore, the bidder shall in his own interest furnish complete documentary evidence in the first instance itself, in support of their fulfilling the Qualification Criteria as given above.
- Bidder can also download the tender from website & submit the tender fee with offer.
- In event of bidder not submitting the requisite tender fee along with the offer, their Offer shall be rejected.
- The NIT is available on the Website **www.nationalinsuranceindia.com**.

- EMD shall be paid in favor of National Insurance Co. Ltd. in the form of a Demand Draft payable at Mumbai
- **Sealed Bids must be submitted physically in the tender box provided at 4th floor, National Insurance Towers, 65, Murzban Road, Fort, Mumbai- 400 001 till 02/05/2018 up to 02:30 p.m. No other mode of submission will be allowed.**
- Technical part of the Bids shall be opened at **3.00 p.m.** on the same date, in the presence of authorized representatives of bidders. Time and date of opening of Price Bids shall be notified to the qualified and technically acceptable bidders at a later date
- Bids not received by the due date and time shall be rejected and representatives of such bidders shall not be allowed to attend the bid opening.
- National Insurance Co. Ltd. shall not be responsible for any expense incurred by bidders in connection with the preparation & delivery of their bids, site visit and other expenses incurred during the bidding process. All the expenses for preparation of the bids shall be borne by the bidders.
- Telex / Telegraphic / Fax / E-mail bids shall not be accepted.
- National Insurance Co. Ltd. reserves the right to reject any or all Bids without assigning any reason, whatsoever.
- Clarification, if any, can be obtained from

M/s National Insurance Co. Ltd.

MUMBAI REGIONAL OFFICE II , National Insurance Tower, Sterling Cinema Building, 65, Murzban Road, Fort, Mumbai -400 001.
Estate Department
Tel. No. 022-22017109

M/s. Advice Consultants – Goregaon (E), Mumbai
Mr. Jatin Ambani

Cell No. : 9321177022 Tele. No. : 91-22-29270094 Fax – 91-22-29272402

(Regional Manager)

MBRO II

**Estate & Establishment
Department, Mumbai**

4. INTEGRITY PACT should be on Rs.100/- stamp paper

Integrity Pact (IP)

- Integrity Pact has to be signed by all Bidders participating in all Tenders having job value of one crore and above.
National Insurance Company Limited will enter into Integrity Pact with the L-1 bidder for the Tenders having job value of one crore and above.
- Integrity Pact will cover all phases of the Contract, i.e., from the stage of Notice Inviting Tender (NIT)/pre-bid stage till the conclusion of the Contract, i.e. the final payment or duration of the warranty/guarantee
- Integrity Pact would be implemented through Independent External Monitors (IEMs) appointed by NICT. The IEM will review independently and objectively, whether and to what extent parties have complied with their obligations under the pact.
- Provisions of Integrity Pact should conform to latest CVC guidelines and Company's requirement.
- IEMs will meet periodically to review ongoing tendering process in respect of procurement/Job Contract exceeding Rs. 1 crore. The frequency of meeting will be decided by the management considering number of projects.
- A presentation covering all projects of above Rs.1crore to be made before the IEMs by the operational department along with elementary documents.
- All documents/papers etc. related to applicable agreement/contract will be made available to the IEMs for examination as and when they required.
- The Department will follow CVC guidelines and Company guidelines during the process of procurement and regular update on the same to be presented before the IEMs for their review. At no stage there should be any delay in the process of tendering and execution of the project for the sake of review by IEMs.

- For project involving RO initial/ periodical presentation on update of the process, has to be presented by HO Dept. to the IEMs. If required representatives of the concerned RO to be called for interaction with IEMs.
- IP will be effective for all phases of contract from pre-bid stage to the final implementation or conclusion of contract.
- Contract value will be deciding factor for applicability of Integrity Pact i.e., all agreement/ contracts of above Rs. 1 crore will come under the purview of IP irrespective of the period of the contract/agreement.
- IP will not be applicable for lease agreements of office and residential properties irrespective of amount involved.
- All vendors/bidders need to sign Integrity Pact and signing of Pact will be one of the preliminary qualifications.
- IP will be applicable for all contracts including those on nomination basis.
- IP to be signed by the company with the L-1 bidder is as under :

INTEGRITY PACT

Between

NATIONAL INSURANCE COMPANY LIMITED (NICTL) hereinafter referred to as
“The Principal”

and

..... Hereinafter referred to as “**The Bidder/Contractor**”

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Principal has appointed two Independent External Monitor (IEM) –, who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles :-

- a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- b) The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

c) The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s) / Contractor(s)

(1) The Bidder(s) / Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution:-

- a) The Bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- b) The Bidder(s) / Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- c) The Bidder(s) / Contractor(s) will not commit any offence under the relevant IPC/PC Act, further the Bidder(s) / Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals

and business details, including information contained or transmitted electronically.

- d) The Bidder(s) / Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further, if any Guidelines on Indian Agents of Foreign Suppliers are required, CMD, National Insurance Company, would be authorized to approve the same.
- e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future Contracts.

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or to terminate the contract, if already signed, for such reason. Further, if any Guidelines on Banning of business dealings are required, CMD, National Insurance Company, would be authorized to approve the same.

Section 4 – Compensation for Damages

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance bank Guarantee.

Section 5 – Previous transgression

- (1) The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken.

Section 6 – Equal treatment of all Bidders/Contractors/Subcontractors.

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
- (3) The Principal will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

Section 7 – Criminal Charges against violating Bidder(s)/Contractor(s)/ Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the

Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 – Independent External Monitor / Monitors.

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairman, National Insurance Company Limited.
- (3) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/ Subcontractor(s) with confidentiality.
- (4) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. Kolkata.
- (5) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- (6) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- (7) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & On behalf of the Principal)

(For & On behalf of Bidder/Contractor)

(Office Seal)

(Office Seal)

Place: _____

Date: _____

Witness 1:

(Name & Address) _____

Witness 2:

(Name & Address) _____

5. CONSENT LETTER

To,
**NATIONAL INSURANCE COMPANY LTD.,
MUMBAI REGIONAL OFFICE II, NATIONAL
INSURANCE TOWER, STERLING
CINEMABUILDING, 65, MURZBAN ROAD,
FORT, MUMBAI-400001.**

**SUBJECT : HERITAGE CONSERVATION, CIVIL AND STRUCTURAL
REPAIR & PAINTING WORK AT NATIONAL INSURANCE
TOWER, STERLING CINEMA BUILDING, 65, MURZBAN
ROAD, FORT, MUMBAI-400 001.**

Dear Sir,

We undertake that the contents of the above Bidding document shall be kept confidential and shall not be transferred and that the said documents are to be used only for the purpose for which they are intended.

We indicate below our intentions to quote with respect to this Bid.

We intend to bid as requested for the subject works and furnish following details with respect to our quoting office:

- (i) COMPANY'S NAME :
- (ii) POSTAL ADDRESS :
- (iii) TELEPHONE NUMBER :
- (iv) TELEFAX NUMBER :
- (v) CONTACT PERSON :
- (vi) MOBILE NUMBER :
- (vii) E-MAIL ID :

6.BID SUBMISSION LETTER

(On the letter Head of Bidder's Organization)

From:

To.

NATIONAL INSURANCE CO. LTD.
THE REGIONAL MANAGER (ESTATE & ESTABLISHMENT
DEPARTMENT) MUMBAI REGIONAL OFFICE II, NATIONAL INSURANCE
TOWER, STERLING CINEMA BUILDING, 4TH FLOOR,
65, MURZBAN ROAD, FORT, MUMBAI- 400001.

SUB: HERITAGE CONSERVATION, CIVIL AND STRUCTURAL REPAIR & PAINTING
WORK AT NATIONAL INSURANCE TOWER, STERLING CINEMA BUILDING, 65,
MURZBAN ROAD, FORT, MUMBAI-400 001.

Dear Sir,

We hereby submit our offer in full compliance with the terms and conditions of the Bidding Document No.

Earnest Money Deposit is submitted by Demand Draft/Pay Order as follows:

S	EMD Amount in Rs.	DD No.& Date	Drawn on
01	*		

We declare that the statement made and the information provided in our offer is true and correct in all respect. In case, it is found that the information/documents provided by us are incorrect/ false, our offer shall be rejected by NICTL, without any reference to us.

*as per NIT.

Thanking you, Very truly yours, (Sign of authorized Person)

FullName_____

Title & Capacity_____

(COMPANY SEAL)

7.TENDER INFORMATION

1	Name&Addressof the Client/ Owner/Company	:	(i) M/s. National Insurance Co. Ltd. MUMBAI REGIONAL OFFICE II,National Insurance Tower,Sterling Cinema Building,4th Floor,65, Murzban Road, Fort, Mumbai- 400001. Contact Person:Estate Department Tel.No.022-22017109
2	Name&Addressof the Consultant	:	M/s. Advice Consultants, Unit No.- 20, 4 th Floor, Atlanta Estate, Shivneri Marg, Vitbhatti, Near Virwani Industrial Estate, Goregaon (East), Mumbai-400063, Tel. No. 022- 29270094, Tel. fax No. 022- 29272402 Cell no.9321177022
3	Location of site	:	National Insurance Company Ltd. Repair & Renovation At Our Sterling Cinema Building, 65, Murzban Road, Mumbai
4	Way to Access	:	From CSTM/Churchgate Railway station /by road
5	Description of Work	:	Civil & Structural Repair, Waterproofing, Plumbing, Painting & other Allied works etc. (Refer NIT)
6	Type of Tender	:	Item Rate with firm price till completion of job.
7	Cost of Tender	:	Rs.5,000/-+ GST(Non-refundable) by Demand Draft In Favor of M/s National Insurance Company Ltd. payable at Mumbai
8	Earnest Money Deposit	:	EMD for Part-A : Earnest Money Deposit in form of Demand Draft / PayorderofRs. 3.75 lakhs (Three lakhs seventy five thousandOnly) Drawn infavor of National Insurance Company Ltd. & payable atMumbai

9	Issue of Blank Tender Forms	:	Tenders can also be downloaded from web site- www.nationalinsuranceindia.com .
10	Last Date of Submission of Tender	:	02/05/2018 up to 2.30 p.m.
11	Tender to be submitted at	:	National Insurance Co. Ltd., Regional Manager Estate & Establishment Department, 4 th floor Mumbai Regional Office II, Sterling Cinema Bldg., 65, Murzban Road, Fort, Mumbai- 400001.
12	Opening of Technical Bid	:	Date: 02/05/2018 at 3.00 p.m. at Regional Manager Estate & Establishment Department, Mumbai Regional Office II, Sterling Cinema Bldg., 65, Murzban Road, Fort, Mumbai- 400001.
13	Completion Time	:	9 months from the date of LOI
14	Validity	:	Tender should be valid for 03 (Three) Months from date of Bid due date / Extended due date.
15	T.D.S.	:	As per Applicable Rate.
16	Defects Liability Period	:	12 months from Completion of Works.

17.	Security Deposit	8 % (Eight percent would be deducted from every Bill raised or part thereof and the same would be retained by the Company as a Retention Money and will be released to the Contractor after expiry of the defect liability period provided that there was no defect or the same have been properly attended and rectified by the Vendor and certified by the consultant. No interest shall be paid on Security Deposit.
18.	Liquidated Damage	: Penalty of Rs. 5000/- per day, subject to a maximum of 5% of the Tender value for delay in completion of work as per tender document.
19.	GST on Works Contract	: Payable extra as applicable. The same will be paid as per Govt. applicable rate. Without prejudice to stipulation in General Conditions of Contract, the quoted price shall be inclusive of all taxes. There shall be no escalation in the prices once the prices are fixed and agreed by the Company with the Vendors, but the Vendors should agree to pass on to the Company any benefit arising out of any subsequent reduction in the prices due to reduction in duties and levies after the prices are fixed but before delivery the the goods.

ANNEXURE-A

8.SALIENT INFORMATION:

1. Owner/Company : M/s. National Insurance Co. Ltd.,
Mumbai Regional Office II,National Insurance
Towers,.4thFloor,65,Murzban Road,Fort,
Mumbai- 400001.
Contact: Estate Department
Tel No. -022-22017109
2. Owner's Consultant : M/s. Advice Consultants,
Unit No. - 20, 4th Floor, Atlanta Estate,
Shivneri Marg, Vitbhatti,
Near Virwani Industrial Estate
Goregaon (East), Mumbai-400063,
Tel. No. 022- 29270094, Tel. fax No. 022-
29272402
3. Earnest Money Deposit : Rs.3,75,000/-by Demand Draft
/Pay Order(Refundable)
4. Cost of Tender :Rs.5,000/-+ GST(Rupees five thousand plus
GST)by Demand Draft / Pay Order
5. Location of Site: National Insurance Towers, 65, Murzban Road, Fort,
Mumbai -400 001.
6. Date of submission of : 02/05/2018 up to 2.30 p.m.
7. Validity period of tender : 3 (Three) Months from Bid due
date/Extended due date.
8. Tender to be submitted: Physical submission in the tender box
provided as 4th floor, National Insurance
Towers, 65, Murzban Road, Fort, Mumbai-
400001.

For and on behalf of the Tenderer

ANNEXURE-B

9. LETTER FROM CONTRACTOR TO COMPANY

To,
National Insurance Company Ltd.
Regional Manager,
Mumbai Regional Office II,
National Insurance Towers, 4th floor
65, Murzban Road, Fort, Mumbai-01

Dear Sirs,

Sub: TENDER FOR REPAIR & RENOVATION AT OUR NATIONAL INSURANCE TOWERS,(SERLING CINEMA BUILDING), 65, MURZBAN ROAD, MUMBAI

1. Having inspected the site and having examined the Conditions of Contract, Specifications and Bill of Quantities for the above mentioned works, we undersigned offer to construct and maintain the entire works as per this tenderdocument.
2. Our Tender is accompanied with Earnest Money as per NIT Rs. _____/-(Rupees _____only) required in the instructions to tenderers.
3. We undertake if our Tender is accepted, to commence the work and complete and deliver the same within the time stipulated in the Appendix.
4. We agree to abide by this Tender for stipulated period from the date fixed for receiving the same and it shall remain binding on us and may be accepted at any time before the expiry of any other further period extended by mutual consent.
5. We are willing to execute Performance Guarantee Bond and confirm the same was not invoked in any earlier occasions.

In case of any default by us in our obligations at paragraphs 2, 3, 4 & 5 above we acknowledge, you are at liberty to forfeit the Earnest Money Deposited herewith. Until and unless a formal agreement is prepared and executed, this Tender together with your acceptance thereof, shall constitute a binding Contract between us together with all the General Conditions of contract, specifications, Bill of Quantities and price and instructions to Tenderers.

Thanking you

Stamp

Yours Faithfully

Address:

Tenderer's Sign

ANNEXTURE - C

10. PROFORMA OF AGREEMENT

(TO BE TYPED ON NON-JUDICIAL STAMP PAPER OF VALUE Rs. 500/-)

This **Agreement** (which shall include its subsequent Amendment(s), if any), effective on _____ [**EFFECTIVE DATE OF CONTRACT**], is executed for _____ [NAME OF WORK/SERVICE (Bidding Document No.: _____)], by and between:

M/s NATIONAL INSURANCE COMPANY LTD., a Government of India Company registered under the Companies Act, having its registered office at NATIONAL INSURANCE TOWER, STERLING CINEMA BLDG., MURZBAN ROAD, FORT, MUMBAI. (Hereinafter shall be

Referred to as "the Company", which expression unless repugnant to its meaning or context thereof, shall include its executors, administrators, successors and permitted assignees) as **ONE PART AND**

M/s _____, a company registered under _____ Having its registered office at _____ [Full Address] (Hereinafter shall be

referred to as "the Contractor", which expression unless repugnant to its meaning or context thereof, shall include its executors, administrators, successors and permitted assignees) as **OTHER PART.**

The Contractor, under this Agreement, shall execute the subject job / provide service(s) in a professional manner as per the detailed scope of work as defined in of the bidding document and the Company will pay the Contractor for execution of the subject job / service(s) provided as per the agreed payment terms and conditions of the bidding/contract document. The Contractor shall also be liable for the Defect Liability Period / Warranty Period, specifically mentioned in the bidding document, for the job executed/ service provided by him/them.

All the terms and conditions of the bidding document shall be applicable for this Agreement.

In witness whereof the parties have executed this Agreement on _____ [Day] of _____ [Month], _____ [Year].

Signed and Delivered
For and on behalf of

Signed and Delivered
for and on behalf of

NATIONAL INSURANCE CO. LTD.

Name:
Designation:
Date:
Place:

Name:
Designation:
Date:
Place:

In the presence of two witnesses:

Name:
Designation:
Date:

Name:
Designation:
Date:

ANNEXURE-D

11.INDEMINITY BOND

To,
National Insurance Company Ltd.
Mumbai Regional Office II, National Insurance Towers,
65, Murzban Road, Fort,
Mumbai -01

Dear Sirs,

Agreement between M/S----- .firm of structural repair & contractor, having registered office at ----- known as contractor and M/S National Insurance Company Ltd. Furnishing of indemnity bond by Contractor against the claims of the Government and other statutory Authority respect of the Tender for Repair work to the existing Building.

WHERE AS M/S National Insurance Company Ltd., has invited tenders for the work of Civil, Structural Repair, plumbing, Waterproofing & Painting work to the existing Building, it is one of the conditions of the tender that the contractor should bear any increase in future in the cost of materials. Further, we hereby confirm that the quoted rates take into account the existing and applicable rates of taxes, duties, G.S.T., etc. imposed by the Government, Central or State, or by any other statutory authority as on the due date of receipt of tenders by National Insurance Company Ltd. and that may be levied from time to time according to laws & regulation now in force & also hereafter to be imposed, increased or modified from time to time. Now, therefore, this indemnity witness that:-

In Pursuance of the above we, ----- do hereby agree to indemnify and keep indemnified National Insurance Company Ltd from any loss, damages, costs, charges, fine and expenses which may be incurred or sustained by National Insurance Company Ltd on account of imposition or increase in rates by the Government, Central or State, of any kind of taxes, duties, Cess, Goods & service taxes etc. on the materials or otherwise during the discharge by us of the said work of Tender for Plaster work, waterproofing, structural repairs, plumbing & allied works to the existing Building National Insurance Company Ltd Sterling Cinema Building, Murzban Road, Fort, Mumbai

We ----- further agree and undertake to bear and pay the said taxes, Duties G.S.T. etc. as and when imposed by the Government, Central or State and shall not revoke it without the written consent of National Insurance Company Ltd.

Dated this _____.
(Contractor)

For-----Signature

ANNEXURE-E

12.INSTRUCTION TO THE TENDERERS:

- 1) The technical Bid and Price Bids shall be placed in two separate envelopes properly closed and sealed and super-scribed as "Technical Bid for _____" and "Commercial Bid for _____" respectively. The envelopes containing the two Bids shall be placed in one large envelope duly closed and sealed and super-scribed with the Tender Reference No., job/items of goods/services tendered and date/time of opening.
The bidders shall drop the envelope containing the tender documents in the Tender Box on or before the time & date specified in the Tender Document. Tender documents which is received after the date & time mentioned in the Tender Document is summarily rejected.
In case, the Technical and Price Bid are put into one envelope instead of separate envelope shall also be summarily rejected.
Master Envelope without super-scribed of Tender No. and Job description, inadequate EMD shall also be summarily rejected.
- 2) The Tenderers, at the time of handing over of his sealed tender, shall deposit the amount indicated in the Tender Notice, in a separate envelope for Rs.3, 75,000/- as interest free Earnest Money Deposit. The Payment shall be made in accordance with the requirement of the Notice and non - compliance with the requirements shall make the offers summarily rejected.
- 3) The deposits of unsuccessful tenders will be returned within thirty working days after the owner has taken the decision.
- 4) Forfeiting of EMD: If the bidder, after submission, revokes his bid or modifies the terms and conditions thereof during the validity of his bid except where National Insurance Company Ltd. has given opportunity to do so, the earnest money shall be liable to be forfeited. National Insurance Company Ltd. may at any time cancel or withdraw the invitation to Bid without assigning any reason and in such cases the earnest money submitted by Bidder will be returned to him without any interest.
- 5) The EMD submitted alongwith the Tender should be converted and adjusted against the Retention Money. This Retention money will also bear no interest. Retention money can be released after expiry of the defects liability period of twelve months provided that there was no defect or the same have been properly attended and rectified by the Vendor and certified by the consultant.
- 6) National Insurance Company Ltd. reserves the right to accept/reject any or all bids without assigning any reason thereof and nullify the bidding document or bidding process without any financial liability towards the bidder.
- 7) EMD, Security deposit and applicable Retention will not carry any interest.
- 8) The Tenderers shall be deemed to have inspected and examined the site and its surrounding and to have satisfied him-self before submitting the tender. All question clarification, doubts, etc. relating to this tender shall be discussed with the consultant before filling and submitting the tender.

- 9) Contractor should visit the site of work before quoting the rate so as to familiarize, himself with the site condition and the scope of the work & quantities.
- 10) In case of partnership concern, all partners or any one of the partners duly authorized or Person with the Power of Attorney may sign.
- 11) In case of company, signature should be on the behalf of the company, in accordance with the provisions of its Articles of Association.
- 12) In case of sole proprietary concern, proprietor should sign himself and affix rubber stamp
- 13) The Technical bid, the Commercial bid and all related correspondence, attachments, statements etc. shall be in English language
- 14) Tenderer shall confirm that his authorized representative will attend the prebid meeting on scheduled date & venue. Pre bid queries if any may be sent in advance. Tender of company not attending pre bid meeting will not be accepted.
- 15) The Tenderers shall quote strictly with the requirements of these documents only. Any variations shall be brought to the notice of the consultant in a separate letter along with financial implications if any.
- 16) Validity of the Tender shall be 3 Months from the bid due date / extended due date.
- 17) Only the party in whose name the tender is issued shall fill the tender and in case any other party fills the tender, the same is liable to be rejected.
- 18) The Tenderers should furnish the required documents and information in the format of Schedules mentioned in Pre-Qualification data of the tender document, which will form a part of the technical bid.
- 19) Tenderer shall submit his offer duly signed & stamped on all forms downloaded from website.
- 20) A) EMD and Tender Cost :
 - i) Earnest Money Deposit in form of Demand Draft of required amount shall be drawn in favor of National Insurance Company Ltd. & payable at Mumbai.

- ii) Cost of Tender Document of Rs. 5,000/- + GST(Rupees five Thousand + GST only) (nonrefundable) in the form of Demand Draft drawn in favor of National Insurance Company Ltd. & payable at Mumbai to be submitted by the bidder.
 - iii) Non submission of cost of tender document and EMD may lead to rejection of offer summarily.
 - iv) Both the Demand Drafts as mentioned above put in one envelope which shall be sealed/pasted & super scribed as, "EMD" & Tender Reference.
- 20) B) TECHNICAL & PRICE BIDS :
- To be submitted on physical form as mentioned. Non- submission of any documents will be liable for rejection of bids.
- 21) In case of a tender , where the unit price of any single item appears unrealistic , such tender will be considered as unbalance and in case , the tenderer is unable to provide satisfactory explanation Owner/Consultant reserve the right to disqualify such tender.
 - 22) The contractor shall be exclusively responsible for payment of all Taxes, Duties, Royalties, Octroi, Entry Tax (Except Goods & Service Tax) that may be levied from time to time according to the Laws & Regulation now in force & also hereafter to be imposed, increased or modified from time to time. Rates are to be inclusive of all taxes & duties as above & nothing will be payable extra by the Company in respect of any duties / taxes to be imposed on procurement of materials for execution of works contract.
 - 23) Quantities of items mentioned in Bill of Quantities are estimated quantities of the work.
 - 24) The Tenderer, when called for, shall furnish the detailed programs of execution in writing to the owner / consultant, preferably, first program along with tender.
 - 25) The Owner in Consultation with the Consultant may add or delete some of the items of work and in such case the contractor will have no rights to claim any compensation for such portion of the work deleted from his scope of work.
 - 26) The tenderer, whose tender is accepted, shall enter into a regular Agreement with the owner incorporating Specifications, General and special conditions of the contract and Schedule of Quantities, Drawing if any.

27) The Consultant/Owner reserves the right to adjust Arithmetical or any other errors in the Tender.

28) In case of any controversy the decision of Advice Consultants as regards to specifications, quality and workmanship, interpretation of various items and specifications of work etc. would be final and binding on the contractor subjected to approval of Owner/Company.

29) **EXPENSES TO BE BORNE BY BIDDER**

All expenses in preparation and submission of his bid and visits (if any) to National Insurance Company Ltd. office and overnight stays for discussions up to finalization of contract etc. shall be borne by Bidder. National Insurance Company Ltd. in no case shall be responsible or liable for these costs regardless of the outcome of the bidding process.

30) **CONFIDENTIALITY OF DOCUMENTS**

Bidder shall treat the Bidding documents and contents therein as private and confidential. If, at any time during the bid preparation period, Bidder decides to decline the bidding process, all documents must be immediately returned to NIICL.

31) **NATIONAL INSURANCE CO. LTD. RESERVES THE RIGHT:** to accept or reject any Bid in whole or part, or to reject all Bids with or without notice or reason and if no Bid is accepted, to abandon the WORKS or to have the WORKS performed in such other manner as National Insurance Company Ltd. may select.

32) **INSTRUCTIONS REGARDING SUBMISSION OF INVOICE**

In order to fulfill the requirement of GST Department, you have to address the Invoices as shown below:

**To,
National Insurance Company Ltd.,
Mumbai Regional Office II, 4th floor,
National Insurance Towers, 65, Murzban
Road, Fort, Mumbai- 400001.**

ANNEXURE-F

13.GENERAL CONDITIONS OF CONTRACT:

1. DEFINITION AND INTERPRETATION

1.1. DEFINITIONS: In this contract following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires.

A) "Owner"/"Company" means '**NATIONAL INSURANCE COMPANY LTD.**' having its **Regional Office at Mumbai Regional Office II, 4th floor, National Insurance Towers, 65, Murzban Road, Mumbai-400001.**

B) "Consultant" means **M/S ADVICE CONSULTANTS** and shall include its nominees/successors or permitted assigns.

C) "Contractor" means the person, firm or company to whom the contract is awarded and includes the contractor's personnel, representatives, successors and permitted assigns. The word 'contractor' shall include 'Sub- contractor' as well.

D) "Site" means "National Insurance Co. Ltd., National Insurance Towers, 65, MURZBAN ROAD, MUMBAI".

E) Bidder/Tenderer – The firm/party who shall tender quotation to the company.

F) Consultant / Owner representative means any Resident Engineer or person acting on their behalf, empowered to inspect, supervise, measure and is

G) "Sub- contractor" means any person with whom with written consent of the owner, any sub- contract has been made for the execution of any portion of the works and includes the personnel, representative, successors and permitted assign of such persons, and any to whom with written consent of the owner and the contractor any part of the contract has been similarly Sublet by the Sub –Contractor.

H) "Contract" means a form of agreement between the Owner and the Contractor to execute the same as per condition and specifications set in these documents.

I) The Works means the work to be executed by the contractor under the contract and shall all duties, responsibilities and obligations to be discharged by the contractor pursuant to the Contract.

J) **Work Order/Contract** – The formal letter/notification issued to the contractor awarding the work(s) in full or in part by the company together with the applicable terms and conditions etc. as are finally and mutually agreed to between the company and contractor.

K) 'Temporary work' shall mean all such work, which are required for the smooth execution and maintenance of the works, but are not part of the contracted work.

L) 'Specifications' means the Technical Specifications furnished in this document.

M) **Consultant**– The Consultant nominated and authorized by the company for the time being for the purpose of operating the contract or any work covered hereunder.

N) 'The effective Date of Contract' means the date stipulated in the Special condition of the contract.

O) 'The contractor's Equipment' means all machinery, apparatus and equipment's to be provided by the contractor following the contract in order to carry out obligations under the contract.

P) **Accepting Authority** - Authorized person of NATIONAL INSURANCE COMPANY LTD.

1.2. INTERPRETATION:

B) Approval given by the owner shall relate only to the specific purpose for which it was given.

C) Approval, consent, checking, assistance, inspection or test given or made by the owner shall not relieve the contractor from any obligations under the contract.

D) No approval or consent required by the contractor shall be unreasonably withheld.

E) The terms of the contract shall be varied only in writing by authorized representative of the parties and shall not be effective by any oral statement.

F) Decisions to be made by the consultant and for matters, affecting works on the site shall be communicated by the consultant / owner's representative.

G) Words implying singular only also include plural and vice versa where the context requires.

2. CONSTRUCTION AND EXTENT OF THE CONTRACT:

2.1 CONSTRUCTION OF CONTRACT:

The contract shall be in all respects constructed and operated as an Indian Contract and in conformity with the Indian Law.

2.2. EXTENT OF CONTRACT:

The Contract comprises the items mentioned in tender document plus any additional items suggested to be carried out by consultant in consultation with owner as per their requirement and complete maintenance of the works and the provision of all labor, materials, constructional equipment, temporary works and everything, whether of temporary nature, required in order to complete the works in accordance with provisions of the contract.

ASSIGNMENT AND / OR SUB –LETTING:

The contractor shall not assign the contract or part thereof to any other party without the written consent of the owner.

CONTRACTOR DOCUMENT:

Documents Mutually Explanatory:

The several documents finishing the contract are to be taken as the mutually explanatory of one another and in case of any discrepancies; the same shall be expressed and adjusted by consultant, who shall thereupon issue to the contractor instructions directing in what system the works are to be carried out.

Discrepancies in Tender and Contract:

There should not be any change in the Tender document once it is uploaded. If any changes in the tender conditions, will be notified by National Insurance Co Ltd only after pre-bid meeting.

The contract shall generally consist of the following:

Articles of the agreement duly signed by the parties concerned in token of acceptance of the contract.

General conditions of the contract as amended / modified at the time of acceptance of tender.

Special conditions of the contract incorporating other terms and

conditions, Technical specifications and drawings, if any,

Bill of quantities and item Rates.

3. GENERAL OBLIGATIONS OF THE CONTRACTOR:

CONTRACTOR TO ENTER INTO CONTRACT:

The contractor shall when called upon to do so by the owner, enter into contract for execution of works. The contractor and the owner shall sign all contract documents in triplicate.

PROVISION OF CONTRACTOR EQUIPMENT / MATERIAL AND OTHER OBLIGATIONS:

In consideration of payment by the owner as stipulated in the contract, the contractor shall provide his equipment to execute and complete the works in accordance with the agreed program and shall carry out all other obligations stipulated in the contract. The works shall strictly conform to the specifications and description of items as specified elsewhere in the contract.

It will be the responsibility of the Contractor to do all necessary co-ordination with local Municipality authorities and/or Government bodies and/or relevant other bodies/authorities as required during the execution of the repairs.

- EXECUTION OF WORKS:

The works shall be completed with due diligence and in the manner specified in the contract and to the satisfaction of the owner / consultant. The Contractor hereby, undertakes that the works shall be ready for any stipulated completion not later than the Date of completion

- ASSIGNMENT OR SUB- LETTING OF THE CONTRACT:

The contractor shall not assign the contract or any part thereof or any benefit or interest therein without the written consent of the owner. Such consent, if given, shall not relieve the contractor for any liability or obligation under the contract. He shall be responsible for the acts, defaults and neglects of any such sub-contractor, his agent's servants or workman. Provided that the provision of labor on a piecework basis shall not be deemed to be subletting under this clause. When the owner has consented to the placing of sub- orders two copies of each order shall be given to the owner.

- CONTRACTOR AGENTS AND THEIR FUNCTIONS:

A) The contractor shall , when he is not personally present on the site of works , invariably place and keep on site a properly, qualified agent duly authorized and empowered to act on his behalf and to receive, on his behalf, orders and instructions from the Owner/Consultant.

B) The contractor shall forthwith remove from the site and works, and not reemploy without the written permission of the Owner/ Consultant obtained in this behalf, any agent whose removal has been asked by the owner /Consultant.

- ALL COMMUNICATION IN WRITING:

All notices communications, references and complaints issued or made by the owner / consultant, or by the contractor, concerning the works shall be in writing and no notice, communications, references or complaints not in writing shall be valid.

- TIME OF COMPLETION:

9 (nine) months from the date of LOI, subject to any requirements in the specifications as to the completion of any portion of the works before the completion of the whole, the works shall be completed within the time stipulated in the agreed program.

- EXTENSION OF TIME FOR COMPLETION:

Should the type of extra or additional work of any kind or other special circumstances of any kind whatsoever which may occur, be such as fairly entitle the contractor to an extension of time for the completion of works, the consultant shall determine the period of such extension subjected to Owner's / Company's approval. Under no circumstances any financial compensation by way of revision of rates/extended stay compensation or any others shall be payable.

Working hours: Contractor will be allowed to carry out repairs in the premises during 08:00 AM to 08:00 PM only

- FIRMPRICE

The rates shall be remaining firm till the entire job is completed in totality. No escalation whatsoever on any account shall be payable.

- LIQUIDATED DAMAGES FOR DELAY:

If the contractor will fail to complete the works within the time prescribed or within the extended time, the contractor shall be liable to pay to the owner the sum specified in the contract as Liquidated Damages for such default. The amount for liquidated damages shall be @ Rs. 5,000/- per day of delay subject to maximum of 5% of the contract value.

The owner may, without prejudice to any other mode of recovery, deduct the amount of such damages from any money due for payment currently or which may become due for payment in future to contractor under this contract.

- OCCUPATION AND USE OF LAND:

No Land belonging to the owner shall be occupied by the contractor without permission of the owner. The contractor shall not use or be permitted to use the site for any purpose other than for executing the works. However, the contractor is permitted to put maximum one signboard displaying, besides his firm's name, name of the work and of the consultant. The maximum size of the signboard shall be 4'x3'

- SURETIES:

The contractor shall, if the tender so provides, at his own expense provide good and sufficient sureties to the owner in the sum provided in the tender for the due performances of the contract.

- EXCAVATED MATERIALS:

The contractor shall not sell, or otherwise dispose of, remove, except for the purpose of the works materials obtained from any excavation made.

- DEBRIS AND SCRAP:

The contractor shall remove debris generated due to breaking or otherwise from the site and he shall dispose of the debris in such a manner that complies rules and regulations of local authorities.

All materials dismantled or removed from the existing structure shall be stacked in a proper manner and shall not be disposed of without permission of the owner. All scrap materials will be property of the owner unless scrap amount is recovered by owner through a tender item.

- DAMAGES TO PERSONS AND PROPERTY:

The contractor shall indemnify and keep the owner informed for all losses and claims for injuries and damages to any person including those under his or his Sub-contractor / third party and any property whether belonging to the construction and maintenance of work. Proper insurance shall be taken & copy shall be submitted to consultant/Owner.

- CONTRACTOR SUPERINTENDENCE:

The contractor shall provide all necessary and adequate superintendence during the execution of the works. The contractor shall prepare 'Daily Reports', Progress Report' and "Activity chart" as may be required by the owner /consultant

- HOUSING OF STAFF AND WORKMEN:

No housing of staff and workers will be allowed in/near the premises.

- HEALTH:

The contractor shall be responsible for giving all necessary notice of infectious and contagious diseases and for isolation and removal of each cases from the site

- WATCHMEN AND LIGHTING:

The contractor shall in connection with works, provide and maintain at his own cost all lights. Guards, fencing and watchmen when and where necessary or required by the owner.

- SAFETY:

Where work is being carried out above ground level and there is a possibility of injury to person or property in case of anything failing, adequate precaution shall be taken to prevent such injury by Railing off the danger area below and display of 'KEEP CLEAR' notices; by the provision of safety sheets adequate to catch anything that might fall.

Contractor shall enforce the use of safety appliances, if anything is to be dropped deliberately from a height then in addition to the other precautions, one man shall,

during the period of the drop, be posted outside the danger area whose sole duty shall be to insure that no person enters the danger area.

- FACILITY OF OTHER CONTRACTOR:

The Contractor shall afford all reasonable facilities to any other contractor employed by the Owner.

- STATUTORY OBLIGATIONS, NOTICES , FEES ,CHARGES:

The contractor shall comply with and give all notices required by any authority. The contractor shall pay and indemnify the Owner against liability in respect of any fees or charges (including any taxes) legally demanded under any regulation or law of authority from him.

- PATENT RIGHTS AND ROYALTIES:

The contractor shall indemnify the Owner from and against all claims and proceedings for or on account of infringement of any patent rights , design , trademarks or name or other protected rights in respect of any constructional material / machinery / equipment used for or in connection with execution of the works.

- HOUSEKEEPING:

Removal of debris in every item of work applicable will not be paid separately.

4.DUTIES AND POWER OF THE CONSULTANT / OWNER'S REPRESENTATIVE:

The duties of the Consultant are to watch and supervise the works and to witness tests and examine any materials to be used or the workmanship employed concerning the works. Any written instructions or approval given by the Consultant/ Owner's Representative to the Contractor shall bind the Contractor.

Any failure of the Consultant / Owner's Representative to disapprove any work or material shall not prejudice the power of the Consultant/Owner's thereafter to disapprove such work or materials or to order the pulling down, removal of breaking-up thereof even at a later stage.

5.EXECUTION OF WORKS

- COMMENCEMENT OF WORKS:

The contractor shall commence the works within 15 days or as stated in the contract after receiving an order in writing to this effect from the Owner.

- COMPLIANCE WITH THE CONSULTANT / OWNER'S REPRESENTATIVE:

The consultant / Owner's representative shall direct the contractor in respect of the several parts of works to be executed and the contractor should execute the works from time to time in accordance with the agreed program.

- ALTERATION TO THEWORKS:

- The consultant / Owner's Representative shall have right to alter, add or omit from or abandonment to any part of the Works.
- If any work over and above that including in the contract is required to be executed at site, the contractor shall have no right to be entrusted with the execution of such additional work but the Consultant / Owner's Representative shall have the right to appoint any other Contractor, if it is felt necessary.

- MEANING AND INTENT OF SPECIFICATIONS ANDDRAWINGS:

If any dispute or doubt arises as to the meaning or intent of the Specifications and drawings or as to the execution of the Works or the quality of any material or as the measurement of the Works, the decision of the Consultant /Owner Representative shall prevail subject to the result of an appeal as provided in the contract. If either drawings or specifications contain any mention of description of minor details which are reasonable and obvious and are intended for satisfactory completion of the Works the contractor shall provide such materials / services without any extra cost, as if the same were mentioned and shall be deemed to be included in theContact.

- PROVISION OF SHED, STORE HOUSES AND OTHER CONSTRUCTION EQUIPMENTS ATSITE:

The Owner shall provide space for sheds, storehouses and yards and / or closed garage if possible. The contractor shall at his own expense provide and maintain suitable equipment's that may be deemed necessary for skillful execution of the works.

- MATERIALS ANDWORKMANSHIP:

- Except where otherwise specified the contractor shall at his own cost supply and provide all necessary construction equipment's, temporary works, materials both for temporary and for permanent works, labor
-
- (including supervision thereof) transport to and from the site and in and about the Works and other things of every kind required for the construction completion and maintenance of the Works.
- The Contractor shall be responsible for receiving and off-loading all equipment's, materials, tools etc. delivered to thesite.

- QUALITY OF MATERIALS AND WORKMANSHIP ANDTESTS:

All materials and workmanship shall be of respective kinds described in the Contract and in accordance with the instructions of the Consultant / Owner's Representative and shall be subjected to such tests as the Owner may direct at the place of manufacturer or on the site or at such places where such tests are carried out . The Contractor shall provide such assistance, instruments, machines, labor and materials as area normally required for examining, measuring and testing any work and the quality of any material

used and shall supply samples of materials before incorporation in the Works for testing.

The Contractor at his own cost shall supply all samples.

The cost of conducting any test shall be borne by the Contractor, if such test is clearly intended by or provided for in the Contract and is particularized in the specifications or Bill of Quantities in sufficient detail to enable the Contractor to price or allow for the same in this tender.

- EXAMINATION OF WORK BEFORE COVERING UP:

No work shall be covered up or put out of view without the approval of the consultant. The contractor shall give due notice to the consultant.

- REMOVAL OF IMPROPER WORK AND MATERIALS:

The consultant /owner's representative shall during the progress of the works have power to order in writing.

- Removal of any material from site, which in his opinion are not in accordance with the contract.

- Substitution of proper and suitable materials and Removal and proper re-execution of any work, which in respect of materials or workmanship is not in accordance with the contract.

- COMPLIANCE WITH LABOR REGULATIONS:

The contractor needs to avail labor license for this project. In respect of all persons directly or indirectly employed on the works, the contractor shall comply with the labor regulations made by the authorities as regards to payment of wages, working hours, wage cards etc. The Contractor must get himself registered for the work as per the provision of the Contract Labor Act and shall comply with the regulations of this Act and shall indemnify the owner against any loss or damages arising out of the contractor being liable under the provision of this Act in whatsoever manner. The contractor in every case shall pay all statutory dues like PF, ESIC & other dues & also pay accidental benefit to the workmen as engaged by him on this contract as per workmen compensation act.

- WORKMEN'S COMPENSATION ACT/PROVIDENT FUND/EMPLOYEES/STATE INSURANCE SCHEME

In every case by virtue of the provision of the worker's Compensation Act or other relevant Pf/ ESIC acts, the owner is obligated to pay compensation to a person employed by the Contractor in the execution of the works, the Owner will recover from the Contractor the amount of the compensation so paid and without prejudice to the rights of the owner under the said Act, The Owner shall be at liberty to recover such amount or any part thereof by deducting it from any monies due or which may become due to the Contractor, whether under this Contract or otherwise. The Contractor shall be also responsible for the observance of the provision of these Acts by the sub-contractor employed in the execution of the Contract.

- SUPPLY OF ELECTRICITY AND WATER:

The Owner, at the request of the Contractor shall provide electricity on chargeable basis as may be available at a point most suitable to the Owner. The contractor shall provide all connections for utilizing the power. It will be the Contractor's responsibility to get any permission required for using power for the work. The Owner shall not supply water for the works and it shall be the contractor's responsibility to arrange for supply of water from the external sources. The contractor shall be responsible for the storage and proper use of water. It will be contractor's responsibility to comply with the notice of authorities as regards to use and storage of water.

6. MAINTENANCE AND DEFECTSLIABILITY:

- PERIOD OFMAINTENANCE:

If it shall appear to the owner /consultant's Representative , at any time during the progress of the works or at any time prior to the expiration of the period of maintenance of such work, that any work has been executed with unsound , imperfect or unskillful workmanship or with materials of inferior description, or that any materials provided by the Contractor for the execution of the work are unsound or of inferior quality to that contracted for, the Contractor shall pull down take up, or take out the works so complained .The Contractor shall rectify any defects caused or done due to the use of inferior material or workmanship at his own cost.

If the contractor replaces or renews any portion of the work, the provision of this article shall apply to the portion of the Works so replaced or renewed until the expiration of 24 months from date of such replacement or renewal.

7. MEASUREMENT OFWORKS:

- QUANTITIES IN BILL OFMATERIALS:

The quantities set out in the SOR are the estimated quantities of the works. Actual and correct quantities of the Works to be executed by the Contractor

- METHOD OFMEASUREMENT:

Measurement of the Works shall be made according to the procedure set forth in the relevant Indian Standards or as specified in specifications. The Contractor shall prepare a, measurement book in which all measurement shall be entered as and when required but not later than 7 days along with the Consultant /Owner's representative on this book weekly during execution.

8.CERTIFICATES ANDPAYMENTS:

PAYMENTS: The Contractor shall be paid for the work at the rates specified in the accepted schedule of rates and for work determined on the basis of the actual measurements of such work taken by the Consultant / Owner's Representative in accordance with the rules prescribed.

Payment shall be made electronically within 30 days of submission of monthly invoices together with electronically all supporting documents. Retention money / security deposit will be deducted while payment. Mobilization advance shall not be paid.

BASIS OF PAYMENT:

The contractor shall be paid on the basis of the actual work done at site and measurement taken by the Consultant and such measurement shall be taken from time to time and properly recorded for the progress of the work.

CERTIFICATE OF COMPLETION:

As and when the consultant receive a written request from the Contractor about completion of any rectification of faulty/affected work during the period of maintenance, the consultant will issue a Certificate of Completion in respect of the Works that are satisfactorily completed by contractor by attending the same as directed by consultant.

MAINTENANCE CERTIFICATE:

The contract shall not be deemed to be duly completed until a Maintenance Certificate shall have been issued by the Consultant recording that the Works have been completed and maintained to his satisfaction. The Maintenance Certificate shall be issued by the Consultant upon the Expiration of the period of maintenance, or as soon thereafter as any work ordered during such period of maintenance, shall have been completed to the satisfaction of the consultant.

ADJUSTMENT OF FINAL ACCOUNT:

On the issue of the Certificate of Completion by the consultant in respect of work, an adjustment of the accounts shall be made against deductions, if any and the balance of the accounts, based on the Consultant / Owner's Representative certified measurements of the total quantity of the work executed by the contractor up to the date of completion and as per the accepted schedule of rates, for any extra work on rates determined , shall be paid to the contractor , subject to any deductions which may be under these conditions , and further subject to the Contractor having delivered to the Consultant / Owner's Representative either a full account in detail of all claims, he may have on the Owner in respect of the works, or a 'NO Claim' certificate. Consultant / Owner's Representative having granted to the Contractor a certificate in writing, after receipt of such accounts that such claims are correct , that works have been completed , they have been inspected by the Consultant /Owner's Representative since their completion and found to be in good order in all the properties , works and things removed , disturbed or injured in consequences of the works, have been properly replaced, any damages or loss by any formor in consequences of, the works have been satisfied , agreeably and in Conformity with the contract .The Retention Money shall become due and shall be paid to the contractor after the expiration of the period of maintenance, or Defects Liability Period.

9. INSURANCE & LABOR LAWS

The contractor shall take adequate insurance cover against damage to property including his equipment's, materials and injury to any personnel/ third party and shall provide due evidence of such cover when asked by the Owner. The Contractor shall solely liable for any cost, claims, expenses caused due to loss or damage of any nature arising out of or in connection with the execution of the Works not covered under any policies, the Owner might have not taken , and shall have indemnify the Owner in respect of such claims, costs , expenses.

9.1 THIRD PARTY LIABILITY:

- a. The Contractor shall take third Party Liability Insurance of such limits as specified in the Special conditions of the Contract and indemnify the Owner against such Third Party Liabilities.
- b. The Contractor shall also be responsible for any other statutory requirements in regard to personnel in the Contractor's employment.

9.2 LABOR LAWS

Contractor shall be fully comply with all labor laws applicable in the state including minimum wages act, workmen compensation act, P F & E S I act, etc.

10. FORCE MAJEURE:

'Force Majeure' shall mean any circumstances beyond the reasonable control to a party, which prevent or impede the performance of the Contract including, but not limited to, the matters listed below.

- War or hostility.
- Riot or civil commotion.
- Earthquake, flood, tempest, lighting or other natural disaster.
- Accident fire or explosion on the site not caused by the negligence of the contractor,
- Law or order of any Government or Govt. department which impedes or delays the Work.

- Denial of the use of any Railway, Port, Airport, Shipping services and other means of public transport.

A mere shortage of labor, materials or utilities shall not constitute 'Force Majeure' unless caused by circumstances, which are themselves Force Majeure. If the either party to the contract is prevented or delayed from or in performing any of his obligations under the Contract by Force Majeure , then he shall notify the other party of the circumstances constituting Force Majeure and specify the obligation, the performance of which is thereby delayed or prevented and the party giving such notice shall thereupon be excused for the performance Notice under this provision for extra time or for delay in completion can be given within 7 days of Commencement of such circumstances.

11. CONTRACTOR'S DEFAULT:

If the Contractor shall fail or neglect to execute the works with due diligence and expedition, or shall refuse or neglect to comply with any reasonable orders given to him in writing by the Consultant /Owner's Representative in connection with the works or shall contravene the provision of the Contract, the Consultant /Owner's Representative may give notice in writing to the contractor to make good such failure, neglect or contravention. Should the Contractor fail to comply with notice within the time specified in the notice, then the Owner shall at liberty to execute such part of works as the contractor may have fail to do without prejudice to any other rights, the owner may take the works wholly or partly of the Contractor's hands & shall get it executed at contractor's risk & cost.

12. SUSPENSION OF WORK:

The Contractor shall on the written order of the Consultant /Owner suspend the progress of the works and during such suspension properly protect and secure work. In such eventuality, under no circumstances the contractor shall be compensated in way of revision of rates or otherwise.

13. TERMINATION:

RIGHT OF THE OWNER TO DETERMINE AND TERMINATE CONTRACT:

The owner shall at any time, be entitled to determine and terminate the Contract, should in the Owner's opinion, the cessation of the Works become necessary owing to paucity of funds or from any other cause whatsoever, in which case the cost of approved materials at the site and of the value of the work done to date by the contractor shall be paid for in full at the rates specified in the Contract.

TERMINATION OF CONTRACT OWING TO DEFAULT OF CONTRACTOR: If the contractor shall at any time:

- Becomes bankrupt insolvent or.
- Make an arrangement with, or assignment in favor of his creditors or agree to carry out the contract under inspection of a committee of his creditors or
- Being a company or corporation, go into liquidation or
- Have an auction levied on his goods or property on the works or
- Assign the Contractor or any part thereof, otherwise than as provided in the General Condition of the Contractor
- Persistently disregard the instructions of the consultant /Owner's Representative or contravene any provision of the contractor.
- Fail to remove materials from the site or pull down and replace any work after receiving from the Consultant a notice to the effect that the said materials or work have been rejected under the Contractor.
- Fail to take steps to employ competent or additional staff and labor as required.
- Fail to afford the Consultant /Owner proper facility for inspecting the works as required.

Then in any of the said cases, the Owner may determine and terminate the Contract after giving due notice and time. The Owner shall be entitled after giving due notice in writing under the hand of the consultant to remove the Contractor from, the whole or any portion of the Works thereby avoiding the contract or releasing the contractor from

any of his obligations or liabilities under the contract and adopt any or several of the following courses:

a) Rescind the contract in which case the security deposit of the Contractor shall stand forfeited by the Owner, without prejudice to the owner's right to recover from the Contractor any amount by which the cost of completing the work by any other Agency, shall exceed the value of Contract.

b) Carry out the work or any part thereof by the employment of the required labor and materials and to debit the Contractor with such cost.

c) Measure up the work executed by the Contractor and to get the remaining work completed by another Contractor at the risk and expense of the contractor. In the event of any several of the courses referred above, being adopted:

The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials, or entered into any commitments, or made any advance on account of or with view to the execution of work. The Owner shall be entitled to take possession of any materials, tools, machinery and to retain and employ the same in further execution of the work, without the contractor being entitled to any compensation for the use and employment thereof or wear and tear or destruction thereof.

14. NOTICES:

Any notice to be given to the Contractor under the terms of the Contract, shall be served by sending the same by post to or leaving the same at the Contractor's site office or principle place of business. Any notice to be given to the Owner under the terms of the Contract shall be served by sending the same by post to or leaving the same at the Owner's address.

15. ARBITRATION:

All disputes of difference whatsoever which shall at any time arise between the parties (other than the Central PSUs) hereto touching or concerning the works or the execution or maintenance thereof this Contract or the rights touching or concerning the works or the execution or maintenance thereof this Contract or the construction meaning operation or effect thereof or to rights or liabilities of the parties or arising out of or in relation thereto whether during or after completion of the Contract or whether before or after determination, fore-closure or breach of the Contract (other than those in respect of which the decision of any person is by Contract expressed to be final and binding) shall after written notice by either party to the Contract to the other of them and to the Appointing Authority herein after mentioned be referred for adjudication and shall be settled as per the Arbitration and Conciliation Act 1996 of the Govt. of India. In respect of disputes with the Central PSUs, they shall be settled as per the Guidelines of the Govt. of India.

16. VARIATIONS:

ALTERATION, ADDITIONS, AND OMISSION:

The Consultant, in consultation with Owner, shall make any variation of the form, quality or quantity of the works or any part thereof that may in his opinion necessary and for that purpose, or if for any other reason it shall in his opinion be desirable, he shall have power to order the Contractor to do so and the Contractor shall do any of the following as agreed by owner:

- Increase or decrease the quantity of any work included in the Contract.
- Omit any such work.
- Change the character or quality or kind of any such work,
- Change level, lines, position and dimensions of any part of the works.
- Execute additional work of any kind necessary for the completion of the Works and no such variations shall in any way vitiate or invalidate the Contract but the value, if any, of all such variations shall be taken into account in ascertaining the amount of the Contract.

ORDERS FOR VARIATIONS:

No such variations shall be made by the Contractor without an order in writing by consultant with the consent of the owner.

VARIATION IN QUANTITIES AND VALUE:

As the Bill of quantities contains estimated quantities and the nature of work being of rehabilitation, no extra claim from contractor shall be entertained for any variation in quantities.

EXTRA ITEMS:

All items not included in the Bill of Quantities are called extra items, and shall not vitiate the Contract. The Contractor shall inform the Consultant the change and submit rate analysis within 15 days of written order. The Consultant shall have a right to reject any claim made by the Contractor if in the opinion of the Consultant that such claims are covered under the contract. However, acceptance/rejection of this extra items shall be entirely depends on Owner/Company.

Mere forwarding of extra items approved by consultant does not prejudice the company/owner to accept the same. The decision of acceptance/rejection if any extra item by the owner is final & binding on consultant/contractor

17. MATERIAL QUALITY:

All materials for incorporations into the works shall be of the best quality of their respective kinds as specified herein and shall be obtained from sources and suppliers approved by Consultant and shall comply strictly with the tests prescribed hereinafter or, where tests are not laid down in this Specification, with the requirements of the latest edition of the relevant Indian Standards approved by the Consultant.

INSPECTION & TESTING

All materials before being incorporated into the Works shall be subjected to inspection and testing as provided in the Conditions of Contract and elsewhere in the Specifications. The cost of all samples for all tests required by this Specifications or approved Standards shall be deemed to be included in the Contract rates. No materials

shall be used in the Works unless they have first been approved by the Engineer or his Representative.

SAMPLE

Samples of all materials proposed to be used or incorporated in the works and to be supplied by the Contractor may be called for at any time by the Engineer or his Representative.

INDEPENDENT TESTS

Independent tests and analysis of any of the materials may be made from time to time by a Testing House or Analyst deputed by Consultant in order to check the supplier's works tests and analysis. The Contractor shall at his own expenses supply and deliver to a Testing house or Analyst such materials as may be directed by the Consultant. Should the result of any test be unsatisfactory to the Engineer or his Representative, the materials represented will be rejected. The costs of all successful tests & all other costs shall be borne by the Contractor.

18. EARTHWORK IN EXCAVATION AND FILLING

GENERAL

The Contractor shall furnish all labor, material, tools equipment and necessary service to complete all excavation and backfilling in accordance with the drawings and as per specification S.

The scope shall include.

a) Excavation for all new foundations footings, trenches pits, drainage, etc. in all types of soil, soft or hard murum which can be removed by a pickaxe and in boulders less than 0.15 cum. size.

b) Carrying out all fill and backfill to complete sub-grades, structures, etc. All fill and backfill shall be uniformly compacted to the satisfaction of the Consultant and shall contain sufficient moisture to ensure maximum compacted density. If materials from the excavation are not sufficient for the required fill or are unsatisfactory, the Contractor shall arrange for and obtain fill material from borrow areas shown by consultant and shall be of approved quality.

During excavation the control of surface, monsoon, subsoil and/ or seepage water shall be the responsibility of the Contractor.

c) The sides of all excavations 1.2M or more in depth shall be cut to slopes as directed by the Consultant. The sides of excavations shall be shored and braced, in addition, if directed by the Consultant.

19. DISPOSAL OF EXCESS MATERIAL

The Contractor shall dispose of off excess excavated/dismantled/ material/debris and unsuitable materials at dumping yard outside the premises of NACL which are Corporation approved dumping yards.

The contractor has to arrange such authorized disposal yard in such a fashion so that, Owners/Company is not subjected to explanation and /or financial liability to any statutory authority / body on this account.

EXCAVATION FOR STRUCTURES

Excavation for structures shall be carried out to the depths shown in the drawings or as directed by the Consultant in change and to specified widths. If there are any slips in the excavation they shall be removed by the Contractor at his own cost to provide correct dimensions required for foundations. All excess excavation shall be backfilled to grade with lean concrete 1:4:8 at Contractor's own cost.

BACKFILL

All backfill around footings, walls and structures shall be placed in 150mm layers and compacted at optimum moisture content. The backfilling operations shall not commence until permission has been granted by the Consultant.

CONTROL OF WATER:

The contractor shall furnish, install and operate all necessary machines, applications and equipment to keep the excavation free from water at all during construction and shall dispose of water as directed by the Consultant.

FILLING WITH MURROM OR SELECTED EARTH

Murrom or selected earth shall be of approved quality. Only freshly quarried earth shall be used on the works and in no case shall disintegrated material be used. On the specified site Murrom or selected earth shall be spread in 150mm thick layers compacted at optimum moisture content till full compaction is attained by mechanical tamping or other approved means. The finished surface shall be leveled and shall follow the gradient or levels of the base of the flooring. Following with water for consolidation will not be allowed.

FILLING WITH SAND

Sand required for filling plinths, ramps etc. Shall be clean and coarse and generally obtained from local sources unless found to be unsuitable. It shall not contain more than 10% of clay. The sand shall be filled as shown on the drawings and as directed by the Engineer. The sand shall be filled, watered and compacted in layers not exceeding 100 mm in thickness. The sand shall be compacted to the maximum density in layers with heavy hand rammer.

MEASUREMENT FOR PAYMENT

PAYMENT FOR ALL excavation shall be made for actual quantity of work done under the item limited to maximum quantity as calculated from dimensions in the drawings (with 450mm beyond the P.C.C. pad in plan) and to the required depth. Any excavation done by the Contractor beyond this shall not be paid for and backfilling of such excess excavation shall be done by the Contractor at his own cost. Payment for murrom or sand or selected earth shall be made for the compacted dimensions actually measured or as per the drawings.

RUBBLE PACKING / SOLING

GENERAL

The Contractor shall furnish all labor, materials, tools and services to complete all rubble packing/ soling, in accordance with the drawings and as specified herein.

MATERIALS

The rubble stones shall be sound, hard and durable. They shall have at least one dimension equal to the thickness of rubble packing /soling and shall in any case, not be less than 150mm in any direction. The stone shall be carefully hand packed with the longest side of each stone placed vertical with the smaller face of two ends at the top. All interstices between stones shall be filled in solid with well driven stone chips and the surface shall be made uniform with grit. The surface shall be formed to such slopes as directed by the Engineer. The concrete for flooring shall be laid after the Consultant or his Representative inspects the rubble packing/soling laid.

MEASUREMENTS

Actual dimensions inplan.

20. REINFORCED CONCRETE & ALLIEDWORKS

This specification covers the general requirements for concrete to be used in the works, on-site production facilities including the requirements regarding quality, handling, and storage of ingredients, proportioning, mixing pouring and testing of concrete. Requirements in regard to the quality, storage, bending and fixing of reinforcement are also covered.

The following specifications, standards and codes are made a part of this specifications all shall be the latest edition including all applicable revisions and additional publications. In case of discrepancy between this specifications and those referred to herein, this specification shall govern.

IS: 269 - Specification for ordinary, rapid-hardening & lowheatPortlandcement

IS: 455 -1989 - Specification for Portland blast furnace slag cement. IS: 1489-1991 - Specification for Portland- Pozzolanacemments (Part-1) IS: 4031 - Methods of physical tests for hydraulic cement. IS: 8112-1989 - Specification for 43 grade hydraulic cement IS: 12269-1987 - Specification for 53 grade hydraulic cement IS: 12330-1988 - Specification for sulphate resistant cement

IS: 10262 - Specification for concrete mix design

IS: 650- Specification for standards sand for testin go cement: IS:

2386- Methods of tests for aggregates for concrete.

(I-VIII)

IS: 516 - Methods of tests for

strengthofconcrete.IS:1199 - Methods of sampling and analysis ofconcrete.

IS: 3025 - Methods of sampling and test physical and chemical) forwater used

IS: 1139 - Specifications for hot rolled mild steel and medium tensilesteel

Deformed bars for concrete reinforcement.

- IS: 1786 - Specifications for cold twice steel bars for concrete reinforcement. IS:4990 - Specifications for plywood for concrete shuttering work.
- IS: 2645 - Specifications for integral cement waterproofing compounds. IS:4461 - Code worked steel bars for the reinforcement of concrete.
- IS: 456 - Code of practice for plain and reinforced concrete. (Revision year 2000) IS: 3395 - Code of practice for composite construction.
- IS: 2751 - Code of practice for welding of mild steel bars used for reinforcement Concrete Construction.
- IS: 2502 - Code of practice for bending & fixing of bars for concrete Reinforcement.
- IS: 2571 - Code of practice for laying in situ cement concrete flooring. IS:3414 - Code of practice for design and installation of joints in buildings.
- IS:3358 - Code of practice for use of immersion vibrators for consolidating Concrete.
- IS: 4014 - Code of practice for steel tubular scaffolding IS: 1791 - Specification for batch type concrete mixers. IS: 1200 - Methods of measurement of building works.
- IS: 3385 - Code of practice for measurement of civil engineering works

In the event that state or other government bodies have requirements more stringent than those set forth herein, such requirements shall be considered to be part of this specification and shall supersede this specifications where applicable.

The quality of materials and method and control of manufacture and transportation of all concrete work, whether reinforcement or not, and irrespective of mix, shall conform to the applicable portions of the specifications.

The Consultant shall have the right to inspect the material/s, the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment, and the quality control system. Such an inspection shall be arranged and Engineer's approval obtained prior to starting of concrete work.

The ingredients to be used in the manufacture of standard concrete shall consist solely of a standard type of Portland cement, clean sand, natural coarse aggregates, clean water and admixtures, if specially called for on drawings or specification.

CEMENT-OPC 43 Grade as per IS-8112 & 53 Grade as per IS12269.

Unless otherwise specified cement shall be ordinary Portland cement in 50 kg bags changing of brands or type of cement within the same structure will not be permitted. A certified report attesting to the conformance of the cement to I.S specifications by the manufacturer shall be furnished to the Consultant, if required.

Cement bags shall be stored in a dry enclosed shed, well away from the outer walls and insulated from the floor to avoid contact with moisture from the ground and so arranged as to provide ready access. Damaged or reclaimed or partly set cement will not be

permitted to be used and shall be removed from the site. Cement held in storage for a period of ninety days or shall be tested

CEMENT – PPC as per IS 1489 & GGBFS as per BS 6699 or Slag cement as per IS 4550R

Sulphate resistant cement as per IS 12330

For all plaster & finishing works other than structural member's new construction, Portland Pozzolana cement or granulated blast furnace slag cement shall be used to avoid shrinkage cracks in plaster during hydration & to reduce risk of alkali silica reaction as per consultant's approval. However, enhanced curing period must be observed as per standard practice & manufacturer's instructions.

WHITE CEMENT as per IS 8042:1989

White cement shall be used as a coat for protecting newly done plaster as well as primer to cement paint in single coat. The same may be used in double coat as paint itself with addition of polymer at specified dosage. Coverage shall be observed as per manufacturer specification.

AGGREGATES

All aggregates shall conform to IS: 383 (latest edition). Aggregates shall consist of natural sands, crushed stone and gravel from a known source and shall be chemically inert, strong, hard durable against weathering, of limited porosity and free from deleterious materials that may cause corrosion of the reinforcement or may impair the strength and / or durability of concrete. The grading of aggregates shall be such as to produce a dense concrete, of specified strength and consistency that will work readily into position without segregation and shall be based on the 'mix design' and preliminary tests on concrete.

All coarse and fine aggregates shall be stacked separately in stock piles near the works site in bins properly constructed to avoid inter mixing of different aggregates. Contamination with foreign materials and earth during storage and while heaping the materials shall be avoided. The aggregates must be of specified quality not only at the time of receiving at site, but more so at time of loading into the mixer. Aggregates having a specific gravity below 2.6 shall not be used without special permission of the Consultants.

FINE AGGREGATE (SAND)

Fine aggregates shall consist of natural or crushed sand to IS: 383. The sand shall be clean, sharp, hard, strong and durable and shall be free from dust, vegetable substance, adherent coating, clay, alkali, organic matter, mica salt or other deleterious substance, which can be injurious to the setting qualities, strength and durability of concrete

Sand shall be prepared for use by such screening or washing, or both, as necessary, to remove all objectionable foreign matter while separating the sand grains to the required size fractions.

The percentage of deleterious substance in sand delivered to the mixer shall not exceed the following.

		Percent by Uncrushed	Weight Crushed
I	Material finer than 75 micron IS sieve	3.00	15.00
I	Shale	1.00	-----
I	Coal and lignite	1.00	1.00
I	Clay lumps	1.00	1.00
V	Total of all above substance (I to IV) for uncrushed	5.00	2.00

The apparatus required is 250ml glass measuring cylinder. (Slit contents determine by volume)

The glass cylinder is filled with salt water solution (contraction of the solution will be tea spoon full of common salt for every 570ml) up to 50 ml. Mark.

- 1) Add sand until the level of sand is up to 100 ml mark.
- 2) Add Salt water solution till 150 ml mark is reached.
- 3) Place the palm on the mouth of the cylinder and shake it vigorously.
- 4) Place the cylinder on the hard leveled surface and tap it all around so that sand is leveled.
- 5) Wait for 15 to 20 minutes, the silt will be collected on the top of sand.
- 6) Measure the height of sand & thickness of silt.
- 7) Calculate SILT content (%) = (thickness of silt layer) / (height of sand) multiply by 100.

TYPE OF SAND ZONE (IS 383) FINENESS MODULUS USE IN CONCRETE

FINE SAND	IV	2.2 TO 2.6	+ 1.5%	FOR ZONE 1
MEDIUM SAND	2 & 3	2.6 TO 2.9	- 1.5%	FOR ZONE 3
COARSE SAND	I	2.9 TO 3.2	- 3%	FOR ZONE 4S

AND HAVING F.M. MORE THAN 3.2 ARE NOT RECOMMENDED FOR CONCRETE.

Special sand like pozzosand containing fly ash etc. shall be used with OPC 53 or 43 grades & shall never be mixed with PPC/ GGBFS. Sand from Gujarat shall be used with techno commercial approval from consultant in writing.

COARSE AGGREGATES--KHADI /KAPACHI.

Coarse aggregates i.e. where most of it is retained on the 4.75mm IS sieve, shall conform to IS: 383. This shall be natural or crushed stone and gravel, and shall be clean and free from elongated, flaky or laminated pieces, adhering coatings, clay lumps, coal residue, clinkers, slag alkali, mica, organic matter or other deleterious matter. Natural gravel and crushed rock shall be screened or washed, or both, for removal of dirt or dust coating, if so required by the Consultant.

The grading of coarse aggregates shall be within the limits specified. The maximum size of the aggregates shall be the maximum size of the number, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corners of the form.

For heavily reinforced concrete members, the nominal maximum size of the aggregates shall be 5mm less than the maximum clear distance between reinforcement bars or 5mm less than the maximum cover to the reinforcement, whichever is smaller.

21. WATER.

Water used for both mixing and curing shall be free from injurious amounts of deleterious materials. Potable waters are generally satisfactory for mixing and curing concrete. Where water contains an excess of acid, alkali, sugar, oil or salt, the Engineer may refuse to permit its use. Underground / Bore well water needs to be checked before use for impurities & hardness.

22. REINFORCEMENT

A) reinforcement bars shall be either plain round mild steel bars Grade I as per IS:432 (part I) or cold twisted bars as per IS:1786, or hot rolled deformed bars as per IS

: 1139 as shown and specified in the drawings. Wire mesh or fabric shall be in accordance with IS: 1566.

B) The reinforcement shall not be kept in direct contact with the ground but stacked on top of an arrangement of timber sleepers or the like. If the reinforcement rods have to be stored for a long duration, they shall be coated with cement wash before stacking and / or kept under cover or stored as directed by the Consultant.

C) All steel shall be of Grade I quality unless specifically permitted by the Consultant. No re-rolled material shall be accepted. If demanded by the Consultant. The contractor shall submit the manufacturer's test certificate for the steel. Random test on the steel supplied by the contractor may be performed by the specifications as per the relevant Indian Standards. Steel not conforming to the specifications shall be rejected.

D) All bending shall be done closed to the dimensions shown on the drawings bars shall be accurately fixed by an approved means and maintained in the correct position shown on the drawings by means of spacing bars, necessary chairs and cover blocks, as per IS : 2502 to prevent displacement during placing and compaction of concrete. bars intended to be in contact at the crossing points shall be securely bound together at all such points with number 16 G annealed, soft iron binding wire. All protruding bars from columns, beams and slabs, to which other bars are to be supplied later, shall be protected from rusting by applying cement slurry.

E) Laps and splices shall be as shown on the drawings. Splices in adjacent bars shall be staggered and the locations of all splices, except those specified on the drawings, shall be approved by the Consultant.

F) Erected and secured reinforcement shall be inspected and approved by the Consultant prior to placement of concrete.

G) All steel used for reinforcement shall be free from loose scales, grease, oil, paint, dirt, loose rust, bituminous material or any other substance that will reduce the bond between the steel and the concrete.

H) For payment of work done, the actual quality of steel embedded in concrete as calculated and approved by the Consultant, irrespective of the level or the height at

which the work is done, shall be taken, the unit rate shall cover all wastage binding wire etc. for which no separate payment shall be made. Laps as shown on the drawings or as approved by the Consultant, and, minimum number of chairs and spacer bars to keep the reinforcement in place and approved by the Engineer, shall be measured and paidfor.

23 FORMWORK

- A) The formwork shall consist of shores, bracings, sides of beams and columns, bottom of slabs, sides of walls etc. including ties, anchors, hangers inserts, etc. which shall be completely designed and planned for the work. False work shall be so constructed that vertical adjustments can be made to compensate for take up and settlements.
- B) The design and engineering of the formwork as well as its construction shall be the responsibility of the contractor. If so instructed the design/ calculations for the design of the formwork shall be submitted to the Consultant for approval before proceeding with the work. The Consultant's approval shall not however, relieve the contractor of the full responsibility for the design and construction of the same. The design shall take into account all the loads- vertical as well as lateral, including live and vibration loads
- C) Formwork shall be of timber, metal, plastic, etc. For special finishes the formwork may be lined with steel sheets, plywood oil tempered hardboard,etc.
- D) Formwork shall be so designed and constructed that the removal will not damage the concrete. Where exposed, smooth or rubbed concrete finishes are required, the forms shall be constructed with plywood lining and with special care so that the resulting concrete surfaces require minimumfinish.
- E) The shuttering shall be braced, strutted, propped and so supported that it shall not deform underweight and pressure of the concrete and also due to movement of men and materials. Bamboos shall not be used as props or cross bearers.
- F) The contractor shall record on the drawings or a special register, the date upon which the concrete is placed in the form for each part of the work and the dates on which the shuttering is removed there from. In no circumstances shall forms be struck until the concrete reaches strength of at least twice the stress due to self-weight and any constructions / erection loading to which the concrete may be subjected at time of striking formwork.

24. CONTROLLED CONCRETE

All concrete in the works shall be 'controlled concrete' as defined in IS: 456, unless it is a nominal mix viz 1:4:8 or 1:2:4. Whether reinforced or otherwise, all controlled concrete works to be carried out shall be divided into the following specifications.

GRADE	Specified Characteristic Strength of 150 mm cubes	
	28 Days (N /Sq. mm)	07 Days (N/ Sq. mm)
M10	10	7.0
M15	15	10.0
M20	20	13.5
M25	25	17.5
M30	30	20.0

The characteristic strength is defined as the strength of material below which not more than 5 per cent of the test results are expected to fail. The tests shall be conducted in accordance with IS: 516

25 MIXDESIGN

The mix shall be so designed to produce the grade of concrete having the required workability and characteristic strength no less than appropriate values specified. This is a procedure to investigate the grading of aggregates, water cement ratio, workability and the quantity of cement required to give works cubes of the characteristic strength specified. The proportions of mix shall be determined by weight. Adjustment of aggregates proportions due to moisture present in the aggregate shall be made. Mix proportioning shall be carried out according to the ACI Standard designation ACI613 or 'Design of concrete Mixes' –Road Research Note No.4, Department of scientific and Industrial Research, U.K.

Whenever there is a change either in required strength of concrete or water-cement ratio or workability or the source of aggregates and / or cement, fresh tests shall be Carried out to determine the revises proportion of the mix to suit the altered condition. While fixing the water cement ratio for the mix, assistance may be derived from the standard graph relating 28 days compressive strength to different w/c ratios and the 7 days compressive strength of cement in accordance with IS:269

26 SAMPLING AND TESTING OF

A. Samples from fresh concrete shall be taken as per IS: 1199 and cubes shall be made, cured and tested at 28 days in accordance with IS: 516. In order to get relatively quicker idea of the quality of concrete, compressive strength tests at 7 days may be carried out in addition. For general guidance the values given in the table (see 09 above) may be used.

B) At least 6 cubes of each class of concrete shall be made for every 150 Cu M. Concrete or part thereof. Such samples shall be drawn on each day for each type of concrete. Of each set of 6 cubes, 3 shall be tested at 7 days age and 3 to 28 days age. The laboratory test results shall be

Tabulated and furnished to the Consultant. The Consultant will pass the concrete if average strength of the specimens tested is not less than the strength specified, subject only to the condition that not more than one of the 3 consecutive tests may give a value less than the specified strength and this value shall not be less than 90% of the specified strength.

C) Slumps test shall be carried out as often as demanded by the Consultant and invariably from the same batch of concrete from which test cubes are made. Slump test shall be done immediately after sampling.

27. ADMIXTURES

A) Admixtures may be used only with the approval of the Consultant and with the assurance that with the passage of time, neither the compressive strength nor its durability will be reduced. Calcium chloride shall not be used for accelerating set of cement for any concrete containing reinforcement or embedded steel parts. Admixtures shall be used as per the specifications and in the manner and with control specified by the Consultant.

B) Where specified and approved by the, Consultant, water reducing lignosulfonate mixture shall be added in quantities specified by the Consultant.

C) Where specified and approved by Consultant, waterproofing agent conforming to IS: 2645, shall be added in quantities specified by the Consultant.

D) Retarding agents shall be added in quantities specified, to the concrete mix where specified by the Consultant.

E) The Consultant may at his discretion, instruct the Contractor to use any other admixture in the concrete.

F) Admixtures like micro silica, fly ash in O.P.C. 43 or 53 grade cement, silica fume liquid or slag etc. shall be used with prior approval from consultant. Compatibility of all above admixtures with cement must be checked before its use.

28 OTHER TESTS

A) The Consultant, if he so desires, may order test to be carried out on cement, sand coarse aggregates or water in accordance with the relevant Indian Standard. This test would normally be ordered to be carried out only if the Consultant feels the materials are not in accordance with the specifications or if the specified concrete strength is not obtained. If the tests are successful, the Employer shall pay for all such additional tests, otherwise the Contractor shall have to pay for them.

B) In the event of any work suspected to be faulty – material or workmanship, or both, the Consultant requiring its removal and reconstruction may order, or the Contractor may request that it should be load tested.

The test load shall be 125 per cent of the maximum superimposed load for which the structure was designed. Such load test shall not be applied before 56 days after the effective hardening of the concrete. The test load shall be maintained for 24 hours before removal.

If within 24 hours of the removal of the load, the structure does not show a recovery of at least 75% of the maximum deflection shown during the 24 hours under load, the test loading shall be repeated after a lapse of at least 72 hours. If the recovery after the

second test is not least 75 percent of the maximum deflection shown the second test, the structure shall be considered to have failed the test.

C) Any other tests, e.g. taking out in an approved manner concrete cores, examination and tests on such cores removed from such parts of the structure as directed by the Consultant, sonic testing etc. shall be carried out by the Contractor.

29. PREPARATION, FINAL INSPECTION AND APPROVAL BEFORE CONCRETE PLACEMENT:-

a) Before the concrete is actually placed in position, the inside of formwork shall be inspected to see that are cleaned and well-oiled.

b) The various trades shall be permitted to install conduits, hangers, anchors, inserts, sleeves, bolts, and miscellaneous embedment to be cast in the concrete as indicated on the drawings or as is necessary for the proper execution of the works. The Contractor shall cooperate fully with the other agencies (if any), and shall permit the use of the scaffolding, formwork etc. at no extra cost.

c) All embedded parts, inserts, etc. supplied by the Contractor shall be correctly positioned and securely held in the forms to prevent displacement during placement and vibrating in therates.

d) All anchor bolts shall be positioned and kept in place with the help of properly manufactured templates. The use of all such templates, fixtures etc. shall be deemed to be included in the rates.

e) Opening, holes, pockets etc. shall be provided in the concrete work in the positions indicated in the drawings or as directed by the Consultant.

f) Reinforcement and other items to be cast in the concrete shall have clean surfaces that will not impairbond.

g) Prior to concrete placement, all work shall be inspected and approved by the Consultant. If found satisfactory, concrete shall not be poured until after all defects have been rectified at the Contractor's cost. Approval by the Consultant of any and all materials and work as required herein shall not relieve the Contractor from his obligation to produce finished concrete in accordance with the drawings and specifications.

h) Immediately before concrete placement begins prepared surface except formwork which will come in contact with the concrete to be placed shall be covered with a bonding mortar of cement and sand in the same proportion as for the concrete.

i)No concrete shall be placed in wet weather or on a water covered surface. Any concrete that has been washed by heavy rains shall be entirely removed, if there is any sign of cement and sand having been washed away from the concrete mixture. To guard against damage which may be caused by rains, the works shall be covered with tarpaulins immediately after the concrete has been placed and compacted before leaving the work unattended. Any water accumulation on the surface of the newly placed concrete shall be removed by approved means and no concrete shall be placed thereon until such water is removed. To avoid flow of water over or around freshly-placed concrete, suitable drains and sumps shall be provided.

30. TRANSPORTATION OF CONCRETE

A) All equipment used for mixing, transporting and placing of concrete shall be maintained in clean condition. These shall be thoroughly cleaned after each period of placement.

B) The means of conveyance of the mixed concrete from the mixer to the point of placement should be such that the concrete is placed in its final position before it becomes too stiff to work. The required consistency and plasticity shall be maintained without segregation or loss of slump. On no account shall water be added after the initial mixing.

31-. PLACING OF CONCRETE

A) Before any concrete is placed, the entire placing program, consisting of equipment, layout proposed procedures and methods shall be submitted to the Consultant for approval and no concrete shall be placed until approval has been received. Equipment for conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete during depositing without segregation of materials, considering the size of the job and placement location.

B) Concrete shall be placed in its final position before the cement reaches its initial set and the concrete shall normally be compacted in its final position within 30 minutes of leaving the mixer. Once compacted, it shall not be disturbed.

C) Concrete shall in all case be deposited as nearly as practicable directly in its final position and shall not be re handled or caused to flow in a manner which will cause segregation loss of materials displacement of reinforcement shuttering or embedded inserts or impair its strength . For locations where direct placement is not possible and in narrow forms the Contractor shall provide suitable drop and 'elephant trunks' to confine the movement of concrete. Special care shall be taken when concrete is to be Dropped from a height especially if reinforcement is in the way. In normal cases concrete shall not be dropped from a height more than 1 M or handled in a manner that will cause segregation.

D) Where it is necessary to use transfer chutes, specific approval of Consultant must be obtained to type, length & slopes, baffles, vertical terminals & timing of operations. Concrete shall not be permitted to fall from the end of the chutes by more than 1M. Chutes shall have slopes not flatter than 1 vertical: 3 horizontal & not steeper than 1 vert: 2 hour. Chutes shall be made of metal or metal lined and of rounded cross section.

E) Concrete once started shall be continuous until the pour is completed. It shall be placed in successive horizontal layers of uniform thickness ranging from 150 mm to 900 mm as directed by the Consultant. These shall be placed as rapidly as practicable to prevent the formation of cold joints or planes of weakness between two layers of the pour. The thickness of each layer shall be such that it can be deposited before stiffened. That pour and bending planes shall be approximately horizontal, unless otherwise instructed.

F) COMPACTION:

Concrete shall be compacted during placing, with approved vibrating equipment until the concrete has been compacted to the maximum practicable density, is free of

pockets of coarse aggregates and fits tightly against all form surface reinforcement and embedded fixtures. Concrete should be free from voids or cavities. The vibrators used shall conform to IS specifications and their use shall be consistent with the concrete mix and caution exercised not to over vibrate the concrete to the point that segregation results.

G) Bleeding or free water on top of concrete being deposited into the forms, shall be cause to stop the concrete pour and the conditions causing this defect corrected before any further concreting is resumed.

32 CONSTRUCTION JOINTS AND KEYS:

A) Concrete shall be placed without interruption until completion of the part of the work between predetermined construction joints. If stopping of concrete becomes unavoidable anywhere, a properly formed construction joint shall be made where the work is stopped. Joints shall be either vertical or horizontal, unless shown otherwise on drawings.

B) In a column, the joint shall be formed 75 mm below the lowest soffit of the beams including haunches, if any.

In a beam the joint shall be vertical and at the center or within the middle third of the span. In a slab the joint shall be vertical & parallel to the main reinforcement. Where it is unavoidably at right angles to the main reinforcement, the joint shall be vertical and at the middle of the span. In liquid retaining structures, vertical construction joints shall not be permitted, unless indicated on the drawings. Where a horizontal construction joint is required, to resist water pressure, special care shall be taken in all phases of its construction to ensure maximum water tightness.

C) On resuming concreting at the construction joint before concreting, the roughened joint surface shall be thoroughly cleaned and loose matter removed and then treated with a thin layer of cement grout of proportion specified by Consultant and worked well into the surface. The new concrete shall be well worked against the prepared surface before the grout mortar sets.

33 CURING AND PROTECTING

a) All concrete shall be cured by keeping it continuously damp for the period of time required for complete hydration and hardening to take place. Preference shall be given to use of continuous sprays or pounded water, continuously saturated coverings of sacking, hessian or other absorbent materials, or approved effective curing compounds applied with spraying equipment capable of producing a smooth, even textured coat. The quality of curing water shall be the same as that used for mixing.

b) Fresh concrete shall be kept continuously wet for a minimum period of 10 days from the date of placing of concrete, following a lapse of 12 to 14 hours after laying concrete. The curing of horizontal surfaces exposed to the drying winds shall begin immediately the concrete has hardened. Water shall be applied to unformed concrete surface within 1 hour after concrete has set. Water shall be applied to formed surface immediately upon removal of forms. Quantity of water applied shall be controlled so as to prevent erosion of freshly placed concrete.

c) Fresh concrete shall be protected from the elements from defacements and damage due to construction operations by leaving forms in place for an ample period. Placing tarpaulins shall protect newly placed concrete from rain, sun and winds.

34. REPAIR AND REPLACEMENT OF UNSATISFACTORY CONCRETE

- After the shuttering is removed, the surface of concrete shall be carefully gone over and all defective areas called to the attention of the Consultant who may permit patching of the defective areas or also reject the concrete unit either partially or in its entirety. Rejected concrete shall be removed carefully and replaced by the Contractor at no additional expense to the Owner.
- Superficial honeycombed surface and rough patches shall be made good immediately after of the shuttering in the presence of the Consultant. Mortar composed of 1 part cement to 1.5 parts of sand passing 2.36 mm sieve shall be used for patching. All loose stone and materials adhering to the concrete shall be removed completely. The mortar shall be well worked into the surface with a wooden float. Excess water shall be avoided.
- Holes left by form bolts etc. shall be filled up and made good as in (b) above
 - The use of epoxy for bonding fresh concrete use for repairs will be permitted upon written approval of the Consultant. Epoxies shall be applied in strict accordance with the instructions of the manufacturer.
 - Defective concrete shall be carefully cut as per the instructions of the Consultant and solid concrete is reached. This patch shall be roughened and cleaned and thoroughly soaked with clean water until absorptions tops.

A 5mm thick layer of grout (equal parts of cement & sand) shall be well brushed into the patch. This shall be followed immediately by the patching concrete. Which shall be well consolidated with a wooden float and left slightly proud of the surrounding surface. The concrete patch shall be built up in 10mm thick layers. After an hour or more (as per weather conditions), it shall be worked off flush with a wooden float and a smooth finish obtained by wiping with a hessian cloth. The mix for patching shall be in the same proportion as that used in the concrete being repaired, although some reduction in the maximum size of the coarse aggregates may be necessary and the mix shall be kept as dry as possible. The repaired area shall be kept continuously wet for not less than 10 days.

35. FINISHING

Exposed concrete shall mean any concrete, other than floors or slabs, exposed to view upon completion of job. Unless otherwise specified, the standard finish for exposed concrete shall be a smooth finish. A smooth finish shall be obtained with the use of lined or plywood forms having smooth and even surface and edges. Panels and form linings shall be of uniform size and be as large as practicable and installed with closed joints. Upon removal of forms, the joint marks reasonably smooth and unmarred. This specifications covers the general requirement for general building works viz. masonry plastering flooring protection, waterproofing, doors, painting and such other related works forming part of this job, which may be required to be carried out though not specifically mentioned above. The Contractor shall furnish all materials, labor, tools, plants, any and everything necessary for carrying out the work.

ANNEXURE-G

14.SPECIAL CONDITIONS OF THE CONTRACT:

1. The contractor shall depute one full time qualified, experienced degree / diploma holder engineer for full time supervision who is well conversant with repairs. The deployment of contractor's site engineer and supervisor shall be got approved from the Consultant. Presence of Site Engineer of the Contractor available all time is mandatory.
2. Effective Date of contract shall be considered as that date of issue of FOI / Letter of Intent.
3. Time is essence of the Contract and the contractor shall submit detailed program for completion and shall obtain approval from the Owner / Consultant.
4. **Liquidated damage shall be Rs.5,000/- per day, subject to a maximum of 5% of the total value of the contract.**
5. In accordance with the prevailing Income Tax regulation, the Owner shall deduct Income Tax from the running bills.
6. In case of any dispute, if the work is suspended, the site shall be handed over to the Owner and the Contractor shall remove scaffolding, tools and tackles etc., from the site at the direction of the consultant.
7. The Contractor shall bear in mind that he will have to carry out certain part of the work inside the premises. He shall take utmost care to see that.
 - a) Working area are kept clean,
 - b) Furniture or any other properties of the Company are not damaged.
 - c) No inconvenience / nuisance is caused during the work,
 - d) Plastic sheets are spread on the floor to save them from staining,(Except with P.O.P layer as specified)
 - e) Hessian cloth curtains are hanged over scaffolding.
 - f) Jute covering is provided over wooden windows and other windows wherever possible.
 - g) Staircase and passage area including access area shall be cleaned at the end of the day before closing the work for the day.

No extra cost shall be paid for the above mentioned safety measure. The Contractor shall replace all the broken glasses and any damage to the property. During breaking or damage during progress of the work due falling debris etc., shall be rectified by him at his own cost.

8. The Contractor shall be responsible for the Security of the Premises and flats and shall take necessary precaution against thefts of the company's materials.
9. The owner will recover from any money due to Contractor, subject to the recommendation of the consultant towards cost of any damage/ replacement / repairs that might occur to any property due to negligence on part of the contractor or his workers.
10. **The Owner shall supply electricity on chargeable basis to the contractor at one point. However, it will be contractor's responsibility to obtain permission for use of the electricity for construction purpose. The owner shall not supply water for the work and it will be responsibility of the contractor to procure water suitable for the work, storage and proper distribution. The contractor shall directly handle all Municipal, Corporation, Formalities VIZ. Malaria, water, sewage department etc. No extra shall be paid for the same.**
11. The contractor shall be responsible for disposing off the debris outside the owners premises. He will not dump the same on roads / garbage dumps in the area. He will be responsible to attend to complaints that might arise from improper disposing.
12. The rates shall be valid for working at all heights and depth. No extra payment shall be made for scaffolding, staging, ladders, etc. for transportation of labor and material to higher or lower level.
13. River sand to be used for the works & shall be thoroughly washed before using.
14. The contractor shall use materials approved by consulting engineer or his representative unless otherwise specified in tender document. Consulting engineer possess right to change/disapprove material specified without assigning any reason.
15. The contractor will be allowed to raise a minimum bill amounting Rs. 25,00,000/- (Rupees twenty five lakhs only) per bill. Payment shall be made within 30 working days from date of receipt of certified bill by consultant.
16. **The defects Liability period shall be 12 months** from the date of Completion.

17. Period of running bill measurement and certificate will be 15 days and period of final measurement and valuation shall be 2 months from the date of Completion.
18. The retention Money will be refunded after satisfactory completion of Defects Liability Period without any interest.
19. The contractor shall take adequate Third Party Liability Insurance cover for any one accident and the number of accident occurring during repairing period.
20. All sanitary installation, water supply and drainage works shall be carried out through a licensed plumber in a manner complying in all respect with requirements of by laws of B.M.C. Municipal Corporation.
21. Measurement of all items will be carried out on the actual area attended and as per IS 1200. However, when the tender specifies otherwise, the mode of measurement as specified in the tender shall be final. The decision of the Consultant/owner regarding mode of measurement shall be final. The Contractor shall take adequate precautions, to enter measurements of such items/ materials which cannot be checked subsequently, into Measurement Book on daily basis shall also obtain approval of the Owner/ Consultant's representative on the same day.
22. All Plumbing work shall be tested as directed by the Consultant .The cost of such testing shall not be paid extra.
23. Retention Money can be released after expiry of Defect Liability Period provided that there was no defect or the same have been properly attended and rectified by the Vendor and certified by the consultant. The amount of Retention money, which shall be deducted from each running bill, shall not carry any interest.
24. The contractor shall not put any signboard bearing any names without prior approval of the Owner.
25. The contractor shall provide following items at the site all the time:
 - Mixing tray for mortar;
 - Concrete cutter & mechanical breaker;
 - Mixing tray for polymer Modified mortar;
 - Breaking Machine (For Terrace waterproofing/Plaster/concrete);
 - Weighing machine;

- Measuring jars (100ml, 500ml);
- Measuring tapes 3 m, 30 m.
- Glass Silt jars for checking sand quality.
- Complaint register for members of the B&R House;
- Material register for record of material received & consumed at site.
- Triplicate book for receiving instruction from the consultant;
- Measurement book for recording measurements on regular basis.
- Daily report book to maintain for persons employed & work done with location
- Few chairs & a table for all paper work.

26. The company shall arrange to provide on chargeable basis to the contract, only the following facilities, materials & equipment's to the extent required for the execution of the works in pursuant to the contract.

- a) Construction Power at one point to be provided by owner. Necessary distribution to be done by contractor at his own cost. Removal of electrical wiring for facilitating civil works shall be done by contractor. Refixing shall be done by licensed electrician & shall be done by contractor at no extra cost.

27. The contractor shall within the quoted rates, make his own arrangement for the accommodations of all his workmen, supervisory staff and other persons outside the owner premises and their transport to site and back. No space for accommodation will be provided within/near the premises.

28. No advance on any account shall be payable to the contractor in pursuant to this contract.

Income Tax will be deducted from the contractor's all bills by cash at source as per latest income tax act and rules framed there under.

29. The contractor's scope of supply of materials/facilities shall, within his quoted rates include the following, but not limited to these:

- a. All the materials cement, sand, stone chips, reinforcement & all other material required for painting, finishing & other miscellaneous work, such as plumbing & sanitary, flooring, down comer etc. & machineries required to complete the job successfully.
- b. Required number of supervisors.
- c. All categories of laborer for carrying out the job as per bill of quantities & other documents of this NIT.
- d. Accommodation for all categories of laborers & supervisors.
- e. To & fro transportation for the workmen.

- f. Safety equipment like safety belts, safety nets, safety helmets, safety shoes, safety hand gloves, etc.
- g. **Only river Sand or packaged Pozzolanic sand to be used for Plastering (Unless premix plaster is specified)& concreting work.**
- h. **All materials (except construction power which will be given on chargeable basis) shall be arranged and supplied by contractor.**

30. Taxes and duties

30.01 GST on Works Contract

The contractor's rate shall be exclusive of GST on Works Contract and payable extra as applicable. The contractor should take registration under Maharashtra Goods & Service Tax Act.

30.02 Other Taxes

The Contractor shall be exclusively responsible for payment of any and all taxes, duties etc. now or hereafter imposed, increased or modified in respect of all materials supplied under the scope of work of the contractor covered in this tender.

ANNEXURE-H

15.SPECIFICATIONS FOR REPAIRWORK

Note: In case of any conflict between specifications / scope of work etc. decision of Consultant in consultation with the Owner is final.

A) ENABLING & GENERALWORKS

1.SCAFFOLDING:

Scaffolding shall be safe and erect. Under no circumstances will holes be allowed to be made in the walls to support scaffolding. Typing of scaffolding to the old pipes of the building may be disallowed. Temporary props between balconies or Chhajja to give lateral support to the scaffolding will be permitted where feasible. In general steel scaffolding will be preferred.

Steel scaffolding and its bracings, connections .etc. shall be as per relevant Indian Standards. Lateral tie to the building shall be done preferably using M.S. pipes and couplers. .Where access inside the building is not available connection shall be made using anchor bolts of approved quality. Unless otherwise mentioned no separate payment shall be made for lateral ties /supports / anchors.

2. PROVIDING PLY PROTECTION TO WINDOWS

The existing Aluminum / Wooden windows of all the flats should be covered carefully with minimum 6mm thick ply wood, so as to cause minimum damages to the windows. The plywood should be fixed properly with due care and should be fixed in such a fashion that the windows can be opened with ease. In case where the window is already damaged before fixing, the contractor should bring it to the notice of the concerned flat owner, but in case the contractor's men damage the windows then he will have to repair the same at his cost.

3 .BREAKING OF PLASTER

The coats of plaster over concrete and masonry walls will be removed carefully with chisel and hammer such that the masonry / concrete element underneath is not damaged. All coats of the plaster shall be removed along with visible traces of cement / lime and the surface thoroughly cleaned and hacked where required, to receive new coats of plaster. Chiseling and raking of masonry joints shall also be done where required especially between the RCC members and Masonry blocks for ease and neatness in working; the edges of the exposed portions shall be straightened .Provide burden cloth for safety all around the scaffolding and temporary 6mmthk. Ply for window protection. Remove the existing tree growth by uprooting along with the root completely and Acid treatment to be carried out by using the mixture of Sulphuric acid, Sodium Sulphate, Alum and Common Salt.

Measurement for breaking plaster shall be taken as the actual area exposed projected to the original surface of the element. Where the plaster is removed together with the chiseling or breaking of concrete no measurement shall be taken separately for this.

4. BREAKING OF REINFORCED CONCRETE:

Part of full reinforcement concrete element viz. slab, beam, wall, column, fin etc. will be broken carefully using chisel and hammer. For neatness of work, the edges of the broken portion shall be fairly straight. The broken surface shall be chiseled straight and cleaned so as to facilitate bond with new mortar /concrete. All highly deteriorated steel reinforcement shall be cut / removed as directed. Where insufficient lap length for new reinforcement is available, additional concrete may have to be broken in order to expose adequate length of the existing reinforcement as may be directed.

Measurement shall be taken as actual volume of concrete broken with the steel based on the original dimension of the concrete element. No separate payment shall be made for removing the reinforcement rods.

5. PROPPING

- a. Provide and put up in place Steel Props or Wooden Props with proper keys, wherever instructed by the consultant.
- b. The props should be put up in such a fashion, so as to relieve the load from the affected member, which has to be treated.

B. WATER-PROOFING ITEMS

1. APP MODIFIED MEMBRANE WATER-PROOFING

The surface to be waterproofed shall be dry, clean smooth and free from dust and loose particles.

For a seven layer treatment: bitumen primer shall be applied conforming to IS: 3384. Over the primer Coat, hot bitumen conforming to IS: 1580 shall be applied at a rate of 1.2 kg / Sq. M. Hessian based felt type 3 grade 2 conforming to IS: 1322 shall be spread and embedded in the previously laid of hot bitumen while hot. These two layers shall be repeated again before another layer of hot bitumen is again applied over the tar felt layer at the rate of 1.2 Kg. Per Sq. M. pea- size gravel or grit is to be then uniformly spread at the rate of .008 cubic M. per square M.. The end side laps of each sheet shall not be less than 75 mm and 100mm respectively; staggered and embedded in chases made in the wall and made good in plaster. The standard of the waterproofing shall comply with IS: 1346

This System is self-finished; joint less monolithic membranes provide excellent water tight and vapor barrier system.

High tensile & tear resistance

Can take thermal & structural stresses effectively, without any fatigue. Laid quickly & easily; safe & environment friendly.

Do not undergo early ageing, thus provide long life durable membrane.

Easy melting & fixing, thus saving on usage of expensive gases. Available in 1.5, 2, 3, & 4 mm thickness APP modified membrane rolls.

METHOD OF APPLICATION

STEP WISE METHOD OF APPLICATION OF APP MEMBRANE

- a) Check the base surface for its soundness before application of APP membrane
- b) Check the surface for the slope, the minimum slope shall be 1 in 100, if the slope is not there & stagnation is possible, it is advised to create the minimum slope required for best results
- c) Repair the loose / unsound portions of the surface by breaking and re doing the same patch by polymer modified mortar and allow it to cure.
- d) Open all cracks up to 5 mm width with the help of a grinder & fill them with the help of Acrylic non shrink crack filling compound, cracks above 5 mm shall be repaired with polymer modified mortar. Construction / expansion joints shall be filled first with Poly sulphide sealant before primer application
- e) Clean and wire brush the surface completely before application of Primer and check that moisture content is not more than 15 % in the substrate
- f) Apply solvent based bitumen primer on the dry - clean surface @ 3-5 Sq. Mtr. per liter and allow it to dry for 4-6 hours
- g) Start application of APP membrane from the lowest end to higher end below the drip mould of the parapet wall with the help of a gas torch
- h) Start application of 2nd roll by keeping an overlap margin of 100 mm at the overlap joints
- i) Over heat the membrane at the overlap joints to bleed out the bitumen for 10- 15mm and flush the same with good finish with hot trowel
- j) Finally apply two coats of bituminous aluminum paint @ 3-5 sq. Mtr. per liter on the top of the laid APP membrane for the non-trafficable roofs /area and or protect the membrane with a protective screed / BB Coba for the area subjected to heavy movements & wear & tear.

2 WATER-PROOFING TO TERRACE TOP BY TRADITIONAL METHOD WITH CHINA MOSAIC TOPPING

- a. Remove the existing Waterproofing layer completely up to the bare concrete with the help of **BOSCH Make Electric breaker (GSH 4 / GSH 7) or equivalent**, to be used for puncturing & subsequently chisel & hammer using chisel at an angle to ensure that the concrete does not get damaged. Dispose off the removed debris and clean the bare slab thoroughly.
- b. Open the visible cracks of the bare concrete in V groove & fill the cracks with a paste of Approved Polymer, cement & water. Apply a coat of Polymer Emulsion: Cement slurry of 1: 1.5 to the entire bare slab.
- c. Open the joint between the parapet wall and the slab in a 15mm to 20mm V groove and then fill the same with a 1:2 C.M. with addition of integral WP compound.
- d. Lay Brick Bat Coba **of average 4" thick** in 1:5 C.M. with addition of integral WP compound, with proper slope & alignment. Slope to be maintained at 1" per 10' length.

- e. Carry out pond test by ponding water on the brickbat Coba for a minimum 7days.
- f. Fill the gaps in the brickbats using a 1:4 C.M. with addition of integral WP compound. All gaps to be filled properly and the entire bricks should be completely covered.
- g. Provide & lay in place China Mosaic Topping with mixed colored chips in proper slope as the finishing coat.
- h. Coving (Vatta) height to be maintained at 9" or 230mm.

3 WATERPROOFING TO TERRACE TOP BY CHEMICAL COATING WITH CHINA MOSAICTOPPING

Open the visible cracks on the top surface in V groove & fill the cracks with a paste of Approved Polymer, cement & water.

Apply two coats of Polymer Emulsion: Cement slurry of 1: 1.5 to the entire bare slab. The second coat should be applied in a manner so that the brush is worked perpendicular to the direction of application of the first coat. (The minimum over coating interval between two coats should be 24hours.)

Carry out pond test by ponding water on the coated surface for a minimum 3 days.

Provide & lay in place China Mosaic Topping with mixed colored chips in proper slope as the finishing coat.

4 WATER PROOFING OF CHHAJJA / BALCONYTOP:

1. Breaking existing water-proofing treatment and Coba to expose RCC slab by sharp chisel and light hammer only so as not to damage existing RCC slab etc. Lowering and throwing out debris.
2. Clean surface of all particulars and dust washing the same.
3. Subsequently RCC slab should be inspected for hair crack loose surface which should be made good under consultant's instruction.
4. First at the junction of parapet wall and slab, a key of approx. 2" x 2" should be chipped at all length where metal packing will be done on cement paste and where vatta will be constructed (Not applicable for Chhajjawaterproofing).
5. Applying cement slurry with waterproofing compound on cleaned slab surface filling uneven surface dentsetc.

6. Laying brickbat Coba CM 1:3 with approved water-proofing compound with necessary slope for easy flow of water.

7. This portion should be thoroughly cured for 4/6 days and observe for leakage before IPS is done.

8. Providing Indian patent stone flooring in 1:2:3 in 12.5 chips 25mm thickness with additional of waterproofing compound to required finish slope and finished with round vatta on triangular brickbat Coba at junction of parapet wall and slab. Finally, the top surface shall be covered with joint less waterproof plaster in CM 1:3 in 15 mm thickness finished smooth trowel. Curing should be done continuously for 14 days with water remaining full in days prepared for the same.

Finish the entire Chhajja& Balcony top, including vatta, curing etc. complete.

5. CEMENT SLURRYGROUTING

Using expansive additive @ 225gm / bag of cement or as per mfrs. Specifications to ensure shrinkage compensation & better flow in capillary using P.V.C. perforated nipples & manual pump with pressure gauge having capacity of 140 P.S.I. Water content shall not exceed 30ltr/ Bag of cement. Polymer shall be added if specified & general alignment of hole making in concrete shall be 1 meter C/C. Nipples shall be cut & filled with fast setting plugging mortar once slurry come out of neighboring hole.

6. WATERPROOFING TREATMENT TOBATHROOMS

a. Break the existing waterproofing treatment to slab level, lower & cart away the debris.

b. Fill the cracks in the damaged slab by using approved sealant.

c. Provide & apply coating of slurry made of Polymer: Cement (1:1.5) to clean & treated slab plus at least 6-9" of the vertical walls.

d. Provide & lay Brick Bat Coba average 3"thick in 1:4 C.M. with addition of ICWPA, as directed with properslope.

e. Carry out pond test by storing water for 48hours.

f. Finish with Kotah stone of size 2' X 1-1/2', of minimum 1" thickness over a baseinC.M. 1:4

7. WATERPROOFING TREATMENT TOW.C.

a. Break the existing waterproofing treatment to slab level, lower & cart away the debris.

b. Fill the cracks in the damaged slab by using approved sealant.

c. Provide & apply coating of slurry made of Polymer: Cement (1:1.5) to cleaned & treatedslab

Plus at least 6-9" of the vertical walls

- d. Provide & lay Brick Bat Coba average 3"thk in 1:4 C.M. with addition of ICWPA, as directed with proper slope.
- e. Carry out pond test by storing water for 48 hours.
- f. Provide & fix white Orissa Pan 23" size including changing the flush connector pipe.
- g. Back fill the balance area to proper level, lay base 1"thk C.M. 1: 4 & finish with white glazed tiles 6" x6".

8. WATERPROOFING TO KITCHEN NAHANITRAP

- a. Break the existing waterproofing treatment to the sunk slab level, lower & cart away the debris.
- b. Fill the cracks in the damaged sunk slab by using approved sealant.
- c. Provide & apply coating of slurry made of Polymer: Cement (1: 1.5) to cleaned & treated sunk slab plus at least 6" of the vertical walls.
- d. Provide & lay Brick Bat Coba average 2"thk in 1:4 C.M. with addition of ICWPA, as directed.
- e. Carry out pond test by storing water for 48 hours.
- f. Provide & fix new PVC Nahani trap of 3" size including changing the connector pipe.
- g. Back fill the balance area to proper level, lay base 1"thk in C.M. 1:4 with addition of ICWPA & finish with white glazed tiles 6" x6".

C. STRUCTURAL ITEMS

1. EXTERNAL AND INTERNAL STRUCTURAL REPAIRS TO BEAMS & COLUMNS BY POLYMER BUILT UP TECHNIQUE.

- a. Break open the structural member to expose reinforcement steel & dispose of the debris arising from the same.
- b. Clean the exposed reinforcement steel thoroughly by removing rust / scaling by chiseling / tapping / wire brushing.
- c. Provide & apply rust converter to the exposed steel & allow to dry for 24 hours.

- d. Provide & apply protective coat of slurry of Polymer Emulsion: cement (1: 1½) to the reinforcement steel.
- e. Build up damaged RCC member to its original shape in layers of 3/4" each by polymer modified cementations mortar in the following proportion.

Approved Polymer

10Kg

Cement

50Kg

QuartzSand

150Kg

GradedMetal

50Kg

Water

As directed

- f. Before every layer a bond coat of slurry of Polymer Emulsion: cement (1:1 ½) to be applied to the entire section.

NOTE: - Polymer consumption will be strictly reconciled at 0.200 kg per Sq.Ft. Of the work carried out. Basic rate of Polymer to be taken as Rs.200/- perkg

NOTE: - The measurement of this item shall be made in Sq.Ft. which is inclusive of layers up to 25mm thickness & shall include cost of all operations viz. a - f. An additional layer of polymer to be applied to sections over and above 25mmthickness

NOTE: - Extra steel, if required, may have to be incorporated in the RCC structural member & will be paid extra at the mutually agreed rates.

2. APPLICATION OF RUST PASSIVATOR: The entire surface of the exposed reinforced concrete element should be thoroughly cleaned. The reinforcement rods must be thoroughly cleaned using a chisel, scrapper, wire brush and emery Paper. The rust Passivator is to be applied carefully on the exposed dry surfaces of the reinforcement rods with a brush or cloth. The Passivator must be applied as per the manufacturer specifications .Allow air drying for 24 hours before any further treatment is done on this after cleaning. Measurement shall be taken of the entire chiseled area where reinforcement rods are exposed and rust Passivator applied.

3. NON STRUCTURAL R.C.C. REPAIR USING NON POLYMER MORTAR (KHADI EMBEDDING)

4 APPLICATION OF MORTAR/CONCRETE

Preparation of surface:

A good base or foundation shall be prepared for successful application of mortar/concrete.

All unsound/weak concrete material shall first be removed by the contractor up to the required depth as directed by engineer. Chipping shall continue until there are no offsets in the cavity that will cause an abrupt change in the thickness of repaired surface. No square shoulders shall be at the perimeter of the cavity all edges shall be tapered. The final cube surface shall be critically examined to make sure that it is sound and properly shaped.

After it has been ensured that the surface which mortar/concrete is to be bonded is sound, it shall be cleaned off all loose and foreign material by means of sand blasting or stiff wire brushing as instructed by engineer. All dust and loose particles resulting from such pre-treatments shall be removed oil free airblast.

Bonding slurry and application:

The contractor shall wet down the surfaces ensuring that they are saturated but free of surface water. Bonding slurry shall be prepared by mixing thoroughly 2 parts of cement to 1 part of water to a lump-free consistency.

Application of cement mortar/concrete:

Cement shall be carried out in efficient concrete mixer. However, the engineer may allow hand mixing in case total weight of mix per batch is less than 50 Kgs. In case of hand mixing, the contractor shall mix 10% additional cement.

The mixer shall be charged with the required 4 quantity of coarse aggregate (where used); fine aggregates, cement and premixing shall be carried out for approximately half a minute. Required quantity of water shall then be added and further mixing shall be carried out for 1 to 1-1/2 minutes to obtain working consistency. Care shall be taken to avoid excessive water.

Rendering Cement mortar/concrete shall be done after applying bonding slurry to the prepared surface while the bonding coat is still tacky. After application of mortar/concrete the surface shall be closed using a wooden float and steel trowel giving it a smooth finish.

5. CURING:

New concrete shall be maintained damp for a period of 2 weeks minimum. . New plaster shall be cured at least 3 times a day for a period for a not less than 10 days. The 1st coat of plaster shall be cured for a period not less than 3days. If required the surface shall be maintained damp using a wet hessian cloth.

6. JACKETING OF COLUMNS

a. Break open the brickwork up to at least 2' around the structural member to be jacketed.

b. Provide necessary steel / wooden props with proper keys, so as to relieve the load from the structural member to be jacketed.

c. Excavate up to footing level & provide additional footing of 6" thickness in 1:2:4 PCC, as directed by the consultant

- d. Break open the structural member to expose reinforcement steel & dispose off the debris arising from the same.
- e. Clean the exposed reinforcement steel thoroughly by removing rust / scaling by chiseling / tapping / wirebrushing.
- f. Provide & apply rust converter to the exposed steel & allow drying for 24hours.
- g. Provide & apply protective coat of slurry of Polymer Emulsion: cement (1 : 1½) to the reinforcement steel.
- h. Provide necessary formwork around the damaged structural member, so as to increase the girth of the member by at least 3"
- i. Build up damaged RCC member to its revised shape by casting cementitious mortar in the proportion of **C: S: M: 1:1/2:3**.
- j. De-mould the formwork and carry out proper curing of the built up member by keeping the same continuously moist with the help of a wetcloth.

Note: Steel details will be provided on site.

7. MICROCONCRETE TO THE RCC MEMBERS

- a. Break open the structural members to expose the reinforcement steel and dispose off the debris arising from the same.
- b. Clean the exposed reinforcement steel thoroughly by removing rust / scaling by chiseling / tapping / wire brushing.
- c. Provide & apply rust converter to the exposed steel & allow to dry for 24hours.
- d. Provide & apply protective coat of slurry of Polymer Emulsion: cement (1: 1½) to the reinforcement steel.
- e. Provide necessary formwork around the damaged structural members to maintain the original size and plumb of the structural members.
- f. Pour ready-mix micro concrete in the formwork which is formed by mixing 12.5 % of water by weight of micro concrete till it forms a flowable consistency.

g. Ensure that only sufficient quantity of micro concrete is mixed which can be consumed in about 15 to 20minutes.

h. Cure the same for 3 days to achieve the adequateproperties.

8 CONCRETE REPAIRS USING SBR / POLYMER LATEX

Surface preparation of the area to be treated is very important. Mildly wet the concrete surface so that the concrete is saturated but the surface is free of water. Apply a bond coat of cement and SBR as per the manufacturer specifications. Whilst the bond coat is still wet, carefully apply and compact the desired SBR modified cementitious repair mortar as per the manufacture instructions in layer so as to reinstate the concrete element. The sand used in the mortar shall be washed clean and of the required fineness. On vertical surface coats shall be applied up to 25mm thickness provided slumping does not occur. On larger flat surface coats should not exceed 6mm in thickness though several coats may be applied in quick succession – each coat setting of before the next is applied. When slumping occurs scratch the firm surface and allow to dryovernight And then repeat the process finish off the final coats. Mildly moisture cures for 24 hours and then allow to air dry.

Measurement shall be taken for actual area covered by the repair mortar. In case the thickness is more than that specified in the Bill of Quantities, additional such measurement will be taken if the additional thickness is applied with a gap of 24 hours.

No measurement for additional bond coats shall be taken when required for layers to achieve the thickness specified in the Bill OF Quantities

9. LOW VISCOUS EPOXYGROUTING:

The concrete surface to be grouted must be thoroughly cleaned, wiped, dried and dust-free. The base and the curing agent are mixed in the specified proportions and gently stirred. The mix is sprayed / poured after 10- 15 minutes. The grouted surface shall be allowed to air dry for 3 days. For vertical surfaces the grout may be poured through muzzles / pipes embedded in the concrete element

10. CARBON FIBRE WRAP STRENGTHENING SYSTEM FOR SEVERE DAMAGED RCC MEMBERS

This systems offer major advantages over conventional repairs techniques, especially where uneven surfaces, irregular shapes or contours are involved. They consist of paper thin uni-directional fiber supplied in roll, rather than plate form. Such systems are ideal for repairing columns or other load bearing features. It is an externally bonded fiber reinforcement system for concrete and masonry structures. It is a uni-directional continuous fiber sheet (as opposed to a woven sheet); laminated with an epoxy matrix noted for its flexibility, ease of application and high strength. For an application to SEVERE damaged RCC members; very first to be removed all loose concrete cover & unsound concrete from the structural element, exposed reinforcement shall be cleaned and chemically de rusted & to be provided rust Passivator coating on exposed reinforcement.

A coat of epoxy resin primer shall be applied by brush on the cleaned concrete surface & followed by epoxy putty filler to level the substrate for the application of Carbon Fiber Wrap sheets. Next stage application of epoxy resin is applied on top of the epoxy putty/mortar treated concrete. Immediately after the application of this resin, the first Carbon Fiber Sheet shall be glued to the concrete surface. Afterwards, the sheet shall be impregnated again with the right mix of epoxy resin components. When the first layer would sufficiently harden, a second layer of sheet can be applied, and more as per the requirement of RCC member profile. Finally a coating of epoxy resin shall be applied to the hardened sheet.

11 RECASTING OF DAMAGED CHAJJAS / SLABS:

- a. Remove all the loose and damaged concrete.
- b. Clean all the exposed reinforcement steel using rusticide.
- c. Provide additional 8mm ϕ steel wherever directed, by drilling 5" deep holes and grouting the same using Cement + Polymer paste.
- d. Coat the cleaned old steel & the new steel also using a coating of Cement: Polymer slurry.
- e. Provide necessary formwork, so as to cast a Chhajja / slab of minimum 3" thick, using cementitious mortar in the proportion of **C:S:M :: 1:11/2:3**
- f. De-mould the formwork and carry out proper curing of the built up member by keeping the same continuously moist with the help of a wet cloth.

Note: Steel details will be provided on site.

Note: - Measurement for this item will be on per Sq. Ft. basis. Measurement for steel will be extra on actual weight.

12. RECASTING OF DAMAGED R.C.C. PARDIES:

- a. Remove all the loose and damaged concrete from the RCCpardies.
- b. Clean all the exposed reinforcement steel using rusticide.
- c. Provide additional 8mm ϕ steel wherever directed with proper lap length, by tying the new steel to the old steel with binding wire.
- d. Coat the cleaned old steel & the new steel also using a coating of Cement: Polymer slurry.
- e. Provide necessary formwork, so as to cast a pardi of minimum 3" thick, using cementitious mortar in the proportion of site mix **C: S: M: 1:1.5:3 or R.M.C. of grade M20.**
- f. De-mould the formwork and carry out proper curing of the built up member by keeping the same continuously moist with the help of a wet cloth.
- g. Note: Steel details will be provided onsite.

13. BRICK MASONARY WORK

- a) Bricks shall conform to the relevant Indian Standards. They shall be sound, hard, homogenous in texture, well burnt, table molded, deep red, cherry or copper colored, of regular shape and size and shall have sharp and square edges and parallel faces. They shall not absorb water more than sharp and square edges and parallel faces. They shall not absorb water more than $1/6^{\text{th}}$ of their weight when soaked in water for more than 24 hours. Bricks shall have a minimum crushing strength of 50 kg /Sq. cm unless otherwise Noted in the drawings. The classes and quality of bricks shall be as laid down in IS: 1077. If demanded, brick samples may be got tested as per IS: 3495.
- b) Mortar for brick masonry shall be prepared as per IS: 2250. The sand shall be free from clay, shale, loam, alkali and organic matter. If required the sand shall be washed till it is free of any contamination. The mortar once prepared shall be used within 45 minutes of mixing. Mortar left unused in the specified period shall be rejected.
- c) All bricks shall be thoroughly soaked in clean water for at least one hour immediately before being laid. Brick work 230 mm and over shall be laid in English Bond unless otherwise specified. 115 mm brickwork shall be laid with stretchers. Brick shall be laid with frogs uppermost. All brickwork shall be plumb, square and true to dimension shown. Vertical joints in alternate courses shall come directly one over the other and be in line Horizontal courses shall be leveled.
- d) Workmanship shall conform to IS: 2212.
Bricks shall be so laid that all joints are well filled with mother. The thickness of joints shall not be less than 6 mm and not more than 10 mm. The face joints shall be raked to a minimum depth of 12 mm when then mortar is still green, so as to provide a proper key for the plaster or pointing to be done.

14 CONSTRUCTING NEW BRICK MASONARY WALL

- a. Soak the bricks to be used for brickwork in water thoroughly for at least 4/5hours.
- b. The mortar for laying should be of **C: S: 1:5**.
- c. Build the wall with one face true to plumb, using full bricks only, taking care to see that the mortar joints do not exceed 1cm inthickness.
- d. For partition walls of 4.5 inches, provide a PCC course at about 4'height.

Note: - All the brickwork should be carried out in stages of 4' high, with a minimum time gap of at least 12 hours.

D PLASTERWORK

1 EXTERNAL SANDFACE PLASTER ON BRICK MASONRYWALLS

- a. Carefully break the damaged plaster preferably using an Electric breaker of BOSCH Make (GSH 4) or equivalent & chisel & hammer after properly covering the openings with6mm ply (This item will be quoted separately on Sq.ft. basis) & tying a screen of

hessian cloth to ensure that the flying debris does not damage any property. The collected debris should be removed from site on a regular basis to avoid inconvenience to themembers.

b. Remove the existing tree growth uprooting it up to the root & carry out acid treatment to avoid any future growth. (This item will be quoted separately on Lump sum basis)

c. Treat the separation cracks between RCC members & brickwork, wherever directed bytheconsultant,byrakingopenthecracksinVgroove&fillingthecrackswith1:2

C.M. using 3 mm down sand, with ICWPA @ as per the manufacturer's specification. This mortar should be pressed firmly in the gap by manual hand pressure and then toweled firmly and scratched, to receive the plaster. (This item will be quoted separately on R. ft. basis.)

d. Carry out proper surface preparation prior to starting the plasterwork, by soaking the brick walls completely with water, so that the walls are ready to receive themortar.

e. Check out the plumb level of the walls by making proper level markings (Dhadas) on the walls. In case the wall is highly out of plumb, then ensure that proper plumb is maintained by operating a leveling dash coat of plaster, wherever directed by the consultant only.

f. Provide & apply first coat of Cement Sand Plaster (1:4) with addition of ICWPA compound @ as per the manufacturer's specification. Mixing should be strictly carried out in ½ bag mortar mixer & the mixed mortar should be unloaded in a plaster tray. This coat should be firmly pressed in uniform plain & in proper plumb & to be roughened to receive second coat of plaster. After the first coat is cured thrice for 7 days, a second coat of Cement Sand Plaster in C.M. 1:4 with addition of ICWPA compound @ 2% by weight of cement, should be applied on the existing first coat. The surface is to be firmly sponge floated to remove the excess moisture & to bring the sand to the surface. The finished surface should have a uniform texture. The finished surface should be properly cured thrice for 7 days to avoid occurrence of cracks.

NOTE:-Please ensure that steel trowels are not at all used for the plasterwork, as this tends to cause a lot of undulations in the finishing of the plaster.

NOTE:- Depending upon the final decision Polypropylene Fibers will be added to the Sand

: Cement mortar.

Note:- All sand used for the plaster work shall be river sand only.

2 EXTERNAL SANDFACE PLASTER ON CEMENT CONCRETE BLOCKS / RCCWALLS

a. Erect safe & strong double bamboo scaffolding so as not to make any holes in the existing structure.

b. Carefully break the damaged plaster preferably using an Electric breaker of BOSCH Make (GSH 4) or equivalent & chisel & hammer after properly covering the openings with6mm ply (This item will be quoted separately on Sq.ft basis) & tying a screen of hessian.

Cloth to ensure that the flying debris does not damage any property. The collected debris should be removed from site on a regular basis to avoid inconvenience to the members.

c. Remove the existing tree growth uprooting it up to the root & carry out acid treatment to avoid any future growth.

d. Treat the separation cracks between RCC members & concrete block work / RCC walls, wherever directed by the consultant, by raking open the cracks in V groove & filling the cracks with 1:2 C.M. using 3 mm down sand, with ICWPA @ 4.0% of the cement content. This mortar should be pressed firmly in the gap by manual hand pressure and then troweled firmly and scratched, to receive the plaster.

e. Carry out proper surface preparation prior to starting the plasterwork, by carrying out a very thin spray coat of 1:3 C.M. using 3mm down sand with ICWPA. This spray coat is done as an alternative to the conventional cement slurry that is used for bonding of the plaster mortar to the concrete blocks / RCC walls. This coat should be carried out at least 2 days in advance to the work of plastering, and cured properly. This wall should then be dampened by soaking the wall completely with water, at every 4 hours interval, so that the wall is ready to receive the mortar.

f. Check out the plumb level of the walls by making proper level markings (Dhadas) on the walls. In case the wall is highly out of plumb, then ensure that proper plumb is maintained by operating a leveling dash coat of plaster, wherever directed by the consultant only.

g. Provide & apply first coat of Cement Sand Plaster (1:4) with addition of ICWPA compound @ as per the manufacturer's specification. Mixing should be strictly carried out in ½ bag mortar mixer & the mixed mortar should be unloaded in a plaster tray. This coat should be firmly pressed in uniform plain & in proper plumb & to be roughened to receive second coat of plaster. After the first coat is cured thrice for 7 days, a second coat of Cement Sand Plaster in C.M. 1:4 with addition of ICWPA compound @ 2% by weight of cement, should be applied on the existing first coat. The surface is to be firmly sponge floated to remove the excess moisture & to bring the sand to the surface. The finished surface should have a uniform texture. The finished surface should be properly cured thrice for 7 days to avoid occurrence of cracks.

NOTE:-Please ensure that steel trowels are not at all used for the plasterwork, as this tends to cause a lot of undulations in the finishing of the plaster.

NOTE:- Depending upon the final decision Polypropylene Fibers will be added to the Sand : Cement mortar.

3 GAP FILLING BETWEEN RCC MEMBERS & BRICKWORK

a. Rake the joint between the RCC members and brickwork / block work in a proper V groove and remove all the loose mortar.

- b. Fill the joint properly with 1:2 C: M, containing ICWPA @ 4.0% of the cement content. This mortar should be pressed firmly in the gap by manual hand pressure.
- c. Embed metal no.1&2 properly in the mortar & then trowel the same firmly and Scratch to receive the plaster.
- d. Cure this mortar properly.

4 LEVELING COAT (DASH COAT) OF PLASTER

- a. Wherever instructed by the consultant, provide a dash coat of plaster, of up to 1.5" thickness in **1:3 C.M.** with ICWPA, embedding small brick pieces in it so as to bring the uneven surface in level.
- b. Cure this dash coat at least **thrice** for minimum **5 days**.

5 SMOOTH (Wall putty/P.O.P) FINISH PLASTER TO THE INTERNAL STAIRCASE AREAS AND TO INTERNAL STRUCTURAL MEMBERS OF EACH FLOORS.

- a. Erect safe & strong bamboo scaffolding wherever required in the staircase areas so as not to make any holes in the existing structure.
- b. Carefully break the damaged plaster using chisel & hammer. The collected debris should be removed from site on a regular basis, and daily cleaning is to be carried out to avoid inconvenience to the members.
- c. Mixing of mortar should be strictly carried out in plaster trays to avoid damage to the flooring.
- d. Treat the separation cracks between RCC members & brickwork by opening the cracks in V groove & filling the cracks with 1:2 C.M. using 3 mm down sand, with ICWPA @ 4.0% of the cement content.
- e. **Provide & apply single coat of Cement Sand Plaster (1:4) with addition of ICWPA compound @ 2% by weight of cement. This coat should be firmly pressed in uniform plain & in proper plumb & finished with smooth finish, using either wall putty or P.O.P.**

E. ANTI TERMITETREATMENT

A comprehensive treatment around the building in the mounds and soil to create a chemical barrier between the ground from where the termites come and woodwork and other cellulose materials in the building

The treatment shall conform to the following.

IS: 6313 (Part I), 1971- Anti-termite measures in buildings

IS: 6313 (PartII), 1971- Pre-constructional chemicalTreatmentMeasures.

IS: 6313 (PartIII) 1971- Treatment for existing structures

The measurement for payment shall be the plinth area of all the building but will include for treatment to all doors, windows, battens and other wood work coming within the entire building. Contractor shall be a member of National Pest control Association.

F. PLUMBINGWORK

1 PROVISION OF TEMPORARY PLUMBINGLINES

- a. Remove the existing A.C. / C.I. drain pipes & fittings.
- b. Provide & lay in place temporary PVC drain pipes & PVC fittings of approved make, in proper line & level with proper spacers so as to locate the lines at least 2' away from the wall.

2 REPLACEMENTS OF DRAIN LINES (P.V.C. PIPES & FITTINGS)

- a. Remove the temporary drain pipes & fittings.
- b. Replace with the new **P.V.C drain pipes & fittings** of approved make, in proper line & level with proper spacers so as to locate the lines at least 2" away from the wall.
- c. Seal the joints properly with rubbersolution.

NOTE:- The G. I. Brackets to be provided so as to locate the lines at least 2" away from the wall. No separate charges will be paid for the M. S. Brackets.

3 REMOVAL & REFIXING OF OLD C.I. DRAINLINES

4 C. I. PIPE

The cast iron pipes shall conform to IS: 1536, 1967, IS: 1537, 1960. All fittings shall conform to IS: 1538-1969.

The socket shall be inlet end for soil or waste pipes. In vent pipes the socket shall face up. The spigot shall be carefully centered in the socket using laps of spun hemp yarn twisted into ropes of uniform thickness thoroughly soaked in hot coal tar

bitumen and dried before use. The hemp rope shall be well caulked into the back of the socket to leave sufficient depth for lead or cement mortar with fillet as the case may be. The exposed pipes shall be coated with one coat of red lead and two of good anticorrosive oil paint of approved shade.

- a. Remove the temporary drain pipes & fittings.
- b. Clean & refix the last 10' of the pipe with the old C.I. Line.

NOTE: - The M. S. Brackets to be provided so as to locate the lines at least 2" away from the wall. No separate charges will be paid for the G.I. Brackets.

5 SALT GLAZED PIPES

These shall conform to IS: 651, 1971. Jointing shall generally be done as per clause 5.6 of IS 1742, 1972, Spun yarn soaked in cement wash shall be passed round the spigot and then inserted into the socket. After caulking cement mortar 1:1 shall be pressed into the joints and finished at 450. The pipes shall be laid on an even bed of 1:4:8 cement concrete with perfect gradient.

6 REMOVAL & REPLACEMENT OF NEW PVC DRAIN LINES

- a. Remove the temporary drain pipes & fittings.
- b. Replace the last 10' of the pipe with the new PVC Line.

NOTE: - The G. I. Brackets to be provided so as to locate the lines at least 2" away from the wall. No separate charges will be paid for the G.I. Brackets.

7 KI-TEC WATER SUPPLY PIPES

Pipes having H.D.P.E. on both sides & aluminum sandwich layer in between with self-pressing fittings with brass in between shall be used for loop & down take with spring bending as per manufacturer specification.

8 REPLACEMENT OF WATER SUPPLY PLUMBING KI-TEC COMPOSITE PE- AL-PE PIPES WATER SUPPLY PIPE

- a. Dismantle all the existing G.I. plumbing lines of various diameters including fittings.
- b. Replace the same with new composite pipes & fittings of approved make using proper spacers so as to locate the lines at least 2" away from the wall.

Note: - The replacing of old lines by new lines should be done in such a manner that it causes the least inconvenience to the members.

9 CLEANING AND REFIXING OF G.I.PLUMBING

- a. Dismantle all the existing G.I. plumbing lines of various diameters including fittings.
- b. Clean the lines thoroughly, using mechanical means or manual means as well as acid treatment.
- c. Refix the same cleaned G.I lines & Replace the fittings with new fittings of approved make, using proper spacers so as to locate the lines at least 2" away from the wall.

NOTE: - This item will be measured in terms of R.ft.

NOTE: - The G. I. Brackets to be provided so as to locate the lines at least 2" away from the wall. No separate charges will be paid for the G.I.Brackets.

10 REPLACEMENT OF G.I. CONNECTORPIECES

- a. Remove all the existing Horizontal G.I. Connector pieces (Barrel Nipples) of $\frac{1}{2}$ " , $\frac{3}{4}$ " , 1" , $1\frac{1}{4}$ " and $1\frac{1}{2}$ " dia connector pipes.

- b. Replace the corroded & damaged Barrel Nipples (Wall Pieces) with C Class pipes and with PVC Sleeves, by making appropriate holes, making required connections, testing & refilling the holes to match with the plastered surface.

Note:- The rate for this item will also include the cost of the refixing of only the tiles inside the flat, which were broken as a result of this replacement. IN OTHER CASE OF STANDARD WHITE/COLOR 6" X 6" TILES, THE CONTRACTOR WILL SUPPLY & FIX THE SAME AT HIS OWN COST.

11 P & F NEW GATEVALVES.

- a. Provide and fix in place new Gate Valves made up of Gun Metal of ISI marking.

12 UNDERGROUND DRAINAGELINES

- a. Excavate a trench in any kind of soil to minimum width of 4' to enable proper laying of the SW Pipes. Proper shoring / shuttering to be carried out wherever required.
- b. Lay 4" thick PCC (1:3:6) in a proper gradient of 1" per 10', over proper rubble soling, to form a firm base for the SW Pipes.
- c. Lay SW Pipes over the PCC and fill the joints properly with (1:2) cement: sand mortar and check the line for leakages if any.

- d. Inspection chambers to be provided at appropriate intervals as directed.
- e. Lay 3" thick PCC (1:3:6) over the pipes so as to encase these pipes.
- f. Backfill the entire trench with murum soil with proper compaction & cart away the extra soil / murum& clean the entire area.

13 INSPECTIONCHAMBERS

- a. Excavate a trench in any kind of soil to minimum dimensions of 4'x2'.
- c. Lay 4" thick PCC (1:3:6) over proper rubble soling, to form a firm base for the Inspection chambers. Construct an inspection chamber in 9" thick brickwork in 1:5 cement: sand mortar. Finish the same with neat cement finish from inside & top. Provide sand faced finish from outside, with the provision of a proper culvert at the bottom.
- d. After proper curing, fix a new RCC cover, of approved make.

14 GULLYTRAP

- a. Excavate a trench in any kind of soil to minimum dimensions of 2'x2'.
- b. Lay 4" thick PCC (1:3:6) over proper rubble soling, to form a firm base for the Gully trap.
- c. Fix a proper SW Gully trap & connect the same to the SW line. Construct an inspectionchamberin4"thickbrickworkin1:5cement:sandmortararoundthegully trap. Finish the same with neat cement finish from inside & top.
- d. After proper curing, fix a new **Cast Iron** cover, of approved make.

15 MANHOLECHAMBERS

- a. Excavate a round trench in any kind of soil to minimum depth of 8' and dia. of5'.
- b. Lay 4" thick PCC (1:3:6) over proper rubble soling, to form a firm base for the Manhole chamber.
- c. Construct a round manhole chamber in 9" thick brickwork in 1:5 cement: sand mortar in the form of an inverted cone. Finish the same with neat cement finish from inside & top. Provide sand faced finish from outside.

d. Fix a new frame fabricated from 5mm thick M.S. angles of 40mm x 40mm size, to encase the RCC lid, and finish the top area of the chamber with IPSfinish.

e. After proper curing, fix a new RCC cover, of approved make.

G. MISCELLANEOUS ITEMS /ADDITIONALITEM

1 PLINTH PROTECTION

a. Wherever necessary, excavate the sub soil to proper depth & 3' width around the periphery of the building & carry out ramming to compact the subsoil.

b. Provide & lay in place 9" thick rubble soling & fill the interstices with glass pieces & stone chips in order to fill the voids & compact the same.

c. Provide & lay in place average 4" thick & 3' wide 1:2:4 PCC using proper form work & compact with proper line level including broom finish & curing etc.complete.

2 DAMP PROOF COURSE

Damp proof course shall be approved at positions shown on the drawings or wherever indicated by the Engineer. In Masonry walls it shall normally be placed above the external ground level at positions specified by the Engineer. The brick or stone masonry shall be leveled and prepared to receive the damp- proof course.

Damp proof course shall mean a layer of cement concrete 1:2:4 with approved waterproofing compound and of a specified thickness. The top surface is covered with two generous coats of tar or bitumen of approved make and the surface then sprinkled with fine sand. All exposed surface of the damp- proof course shall be finished fair and smooth.

3 PAVING WITH PCC

a. Excavate the existing paving along with sub soil to proper depth & carry out ramming to compact the subsoil.

b. Provide & lay in place 9" thick rubble soling & fill the interstices with glass pieces & stone chips in order to fill the voids & compact the same.

c. Provide & lay in place average 4" thick 1:2:4 PCC using proper form work & compact with proper line level including broom finish & curing etc.complete.

d. Excavate the existing paving along with sub soil to proper depth & carry out ramming to compact the subsoil.

e. Provide & lay in place 9" thick rubble soling & fill the interstices with glass pieces & stone chips in order to fill the voids & compact the same.

- f. Provide & lay in place average 4" thick 1:2:4 PCC using proper form work & compact with proper line level including broom finish & curing etc.complete.

4 REMOVING VEGETATION PLANTATIONS

- a. Remove the vegetation / plantation which has grown in the plumbing duct areas.
- b. The roots should be removed totally and the area should be treated properly with a solution of Asafetida (**HING**) or 30% HCl acid & Calcium Carbonated concentrated solution as suggested by NIC.

5 REPLACEMENTS OF LOUVERED WINDOWS OF BATHROOMS /W.C

- a. Remove the existing wooden windows of the W.C. /Bathrooms.
- b. Carry out framing of the edges with 1' wide marble.
- c. Fix new adjustable Aluminum louvered windows using heavy aluminum section.
- d. Fix new glasses of 5mm thickness.
- e. Fix new M.S Grills, within the marble frame.

6. PROVIDING NEW REINFORCEMENT

- a. Provide & fix in place new reinforcement of appropriate dimensions, as per the instructions to be provided at site, at appropriate times.
- b. The new reinforcement should be tied to the existing reinforcement using binding wire.

7 WATERPROOF COATING

- a. Provide and apply two coats of slurry of Polymer: Cement (1:1.5), at any place indicated by the consultant.
- b. The first coat and the second coat should be applied at directions perpendicular to each other.

8 ELASTOMERIC PAINT:

Film thickness of 125 micron+ shall be achieved in two coats with a coat of primer by brush with water addition as per manufacturer specifications. Approved shade & make shall be taken in writing from client as per consultant's recommendation. Joint Warranty for 07 years shall be provided in specified format for no seepages from walls & area attended. Base of paint must be 100% acrylic. Formulations containing styrene butadiene rubber will not be allowed for use on external surfaces. Minimum crack bridging capacity expected is up to 1 mm.

STONE FINISH TEXTURE

Stone finish is a high-build acrylic texture & coating system trowel-applied to give a stucco-like 2mm texture which will be available in single and multi-colour systems. Trowel applied to give a stone-like 2mm texture which will be available in single and multi-colour systems. These finishes may be over coated with water based or solvent free PU clear lacquer. THE STONE LIKE ANCIENT LOOK ALONGWITH ITS STURDY LOOK IS THE HIGHLIGHT OF THE PRODUCT.

- These Texture finishes will give maximum water proofing to the structure because of its coating system.
- Stone finish is a convenient system for creating a protective and aesthetically pleasing texture finish for most cementitious substrates.
- This offers a choice of finishes which may be left in a matt texture or over coated by a clear lacquer.
- Being a spray applied texture or trowel applied finish, this allows some degree of inconsistency in the substrate texture and is readily suited to touch up both features resulting in savings of time and labor.
- This finish has a proven track record over many years of resisting extreme of weathering conditions.
- These finishes are water-based for applicator safety and ease of use.
- To achieve indicated performance, surface preparation must be carried out according to the company recommendations.
- The surface must be free from dust, dirt, grease, oil and other contaminants that may interfere with adhesion.
- Fresh cementitious substrates should be left for 14 days before coating.
- These finishes will be available in single and multi-colour systems. These finishes will minimize the degree of surface preparation required and allows some surface imperfections to be filled.

Property	Value
Adhesion on plaster/concrete	Excellent
Wash ability	Water Resistance and Washable
Moisture Control	Excellent, however the coating must not be subjected to hydraulic pressure
Abrasion Resistance	Excellent
Tensile Strength	Excellent
Semi Magic Resistance	Very High
Biological Resistance	Resistance to algae and Fungal growth
Property	Value
Coating System	2 / 3 Coat System
Colour	Available in large variety of shades
Application	By spray and Trowel
Film Thickness	2.00 to 2.50 mm
Surface Dry	12 to 24 Hrs.
Re-Coat	After 24 Hrs.
Hard Dry	7 Days.
Packing	30 Kgs. HDPE bag packing.
Material Density	1.6 - 1.8 Kg./Ltr.
Consistency	Thick Paste
Solid Contains	80 (+-) 2 %
pH Value	8 to 9
Texture	Depending on the spray or Trowel Techniques.
Gloss Level	Depending on the top coat.
Coverage	3 - 4 sq. ft. per kg per coat
Shelf Life	3 months if stored appropriately under cover, above ground, away from direct heat and moisture and in well-sealed containers

9 TEXTURE LAYER 2 MMTHICK

Over finished external surface, trowel applied layer containing white cement binder, quartz silica grains with powder polymer shall be applied in approved finish & shall be painted in two coats of acrylic premium paint of approved shade & make. 10 years warranty shall be provided for no peel off, leakages or cracking of product.

- c. Tie necessary bamboo scaffolding & clean the entire sand face plaster on the dead walls thoroughly using wire brushes in drycondition.
- d. Wash the cleaned surface with water. Scrub the entire surface thoroughly using wire brushes once again but with runningwater.
- e. Fill the deep grooves provided in the dead wall with the same SYNTHETIC PALSTER material.

- f. Apply one coat of **SYNTHETIC PLASTER** as per the manufacturer's specifications, to the entire dead wall of the building, as directed by the consultant.

- g. Clean the glasses of windowpanes & untie the scaffolding.

10. EXCAVATION

- a. Carry out excavation in any subsoil up to a depth of 5 feet, including carting away the excavatedmaterial.

- b. Backfill the excavated area using the same material.

11 GROUTING

• P & F MARBLE FRAMES FOR WINDOWS / DOORS.

- a. Remove the existing wooden frames of windows / doors along with theirholdfasts.

- b. Repair the damaged brickwork and fill up the holes & voids if any with Cement:Sand mortar.

- c. Fix a new frame in marble, with a proper step, for fixing of windows / doors, with proper line, level &finishing.

• CRACK FILLING IN THE WALLPLASTER.

- a. Open up all the visible cracks in the plaster, in a V groove fashion using an electric cutter machine.

- b. these cracks may be used with ready mix crack filling acrylic paste made by Perma/Roffe/Chryso/approved brand
- c. Finish the same so as to ensure that the filled crack matches the level of the plaster.

A. FIXING SPOUT PIPES IN BOX TYPE CHAJJAS/BALCONY.

- a. Make **two** necessary holes of 50 mm in the flower beds using proper electric hammer drill
- b. Fix **two** new nipples of 40 mm using PVC pipes using neat cement for proper anchorage.
- c. Seal the holes properly after the spout pipes have been fixed.

GENERAL

1. The Bill of Quantities shall be read in conjunction with Conditions of Contract and Specifications as these documents are jointly explanatory and descriptive of the works included in the contract.
2. Special Condition of contract Specifications and descriptions of work and materials given elsewhere in the contract documents are not necessarily repeated in the bill of quantities and form part of Bill of Quantities. Reference is to be made to the other documents for information.
3. The Contractor shall be deemed to have visited the site before preparing his Tender and to have examined for himself the conditions under which the work will be priced and all other factors affecting the execution of the work and the cost thereof.
4. The Quantities of work and material in the "Bill Of Quantities" are not to be Considered as limiting or extending the scope of work to be done and materials to be supplied by the Contractor. The quantities in the "Bill of Quantities" are an estimate of the amount of work but the work will be measured on complete and the contractor will be paid on the actual measurement of work approved by the Consultant.
5. Any special methods of measurements used are stated at the head of or in text of the Bills of Quantities for the items affected. All other items are measured net in accordance with instructions of the Consultant and no allowance has been made for wastage. Unless otherwise specified measurements shall be as per relevant Indian Standard.
6. A price or rate in figures is to be entered against the item in the Bill of Quantities, whether Quantities are stated or not. Item against which no price is entered will be considered as covered by other prices or rates in the Bills.
7. The Prices and rates inserted are to be full inclusive value of the works described under the various items, including all costs and expenses which may be required for the completion of the described, together with all cost and obligations set forth or implied in the Conditions of Contract and Specifications.
8. Some finishing items may have variations in quantities which shall not affect any rates quoted.
9. Where prices have been entered against Lump sum items, payment for such affected items shall be made in proportion to the extent of which at the time of billing, works have been done at the discretion of the Consultant.

10. Providing and fixing shall mean that the contractor has to provide such materials not being procured and borne by the Owner, but which are required for the items and if no material need be provided by the Contractor, the rate shall be only for fixing of the component covered in the item.

The acronyms used in the Bill of Quantities.

- a) Cu.Ft. : Cubic Feet
- b) Sq. Ft. : Square Feet
- c) R.Ft. : Running Feet
- d) Kg. : Kilogram
- e) LS : Lump sum
- f) Nos. : Numbers
- g) Q.R.O. : Quoted Rate Only
- h) C.E. : Consultant's Engineer

16.RECOMMENDED BRANDS: (ANNEXURE I)

Unless otherwise approved, the following brands shall be used for these works.

ITEM	BRANDS
CEMENT	ACC, BHARATHI, ULTRATECH(53 GRADE FORRCC CASTING& 43 GRADE OPC/PPC/GGBFS FOR REPAIRS & PLASTERING)
SAND	BAGGED POZZOLONA / SILPOZ SAND / GOOD QUALITY RIVER SAND
EPOXY RESIN +	CHRYSO/HUNTSMAN / DR. BECK / CIBATUL
ACRYLIC POLYMER/ LATEX	CHRYSO/PIDILITE/STP/PAR/PROTÉGÉ
RUST REMOVER/CONVERTER	CHRYSO/FEOVERT (KRISHNA CONCHEM) /PAR/PROTÉGÉ
RUST PASSIVATOR	CHRYSO/RUSKIL/ RUSTICIDE/PAR/PROTÉGÉ
CONCRETE ADMIXTURE	CHRYSO/PIDICRETE CF 101/ CONPLAST P509
INTEGRAL WATERPROOFING	CHRYSO/PIDIPROOF LW/ POLYPLAST MP/STP / CONPLAST X 421 IC/SHERWIN-WILLIAMS
GYPSUM PLASTER	GERMAN GYPSUM, INDIA GYPSUM, ST. GOBAIN
POLYSULPHIDE SEALANT	CHRUYO / PIDILITE
PLUMBING PIPES UPVC WATERSUPPLY	PRINCE (JAYANTIBHAI CHHEDA GROUP) / KISAN
PREMIX PLASTER	ULTINOVA, ROOFIT, WALPLAST
CPVC WATER SUPPLY PIPES SCHEDULE	PRINCE (JAYANTIBHAI CHHEDA GROUP) / ASTRAL

13-04-2018

COMPOSITE MULTILAYER WATER SUPPLY PIPES	KITEC, KISAN, VICTUS
PVC DRAIN PIPES TYPE	PRINCE (JAYANTIBHAI CHHEDA GROUP) / KISAN / FINOLEX
C. I. PIPES	NECO, KAPILANSH,
UPVC UNDERGROUND	SUPREME/PRINCE (JAYANTIBHAI CHHEDA GROUP)
NOISE REDUCING DRAIN PIPES	PRINCE SILENTFIT (JAYANTIBHAI CHHEDA GROUP) / ASTRAL VOVRIN
M.H. COVERS/	SUPREME/PRINCE (JAYANTIBHAI CHHEDA GROUP), THERMODRAIN
PLUMBING SEALANTS	PIDILITE MAKE, ASIAN PAINTS
UPVC VALVES	PRINCE BALL VALVES (JAYANTIBHAI CHHEDA GROUP)
CRACK FILLERS	PIDILITE, STP, FOSROC
CRYSTALLINE W/P COATING	PENETRON, STP, FOSROC
COLOURLESS SILANE SILIOXANE COATING	ZYCOSIL, STP, FOSROC
EPOXY/PU COATING (FLOOR/WALL)	S P CONCARE/JOTUN/CHRYSO/FOSROC/BASF
EXTERIOR TEXTURE/ STONE CHIP FINISH	JOTUN/TEXTURE CONCEPTS / ASIAN PAINTS
SEMI ACRYLIC PAINT	JOTUN/SHERWIN-WILLIAMS / AKZONOBEL/ASIAN
EXTERIOR 100% ACRYLIC PAINT	JOTUN/SHERWIN-WILLIAMS/ BERGER, AKZONOBEL/ASIAN
EXTERIOR PU COATING	JOTUN/SHERWIN-WILLIAMS/ BASF
ELASTOMERIC COATING	JOTUN/SHERWIN-WILLIAMS / NEW WORLD / STP/ PIDILITE
EMENT PAINT	NEROCHEM/ SWCEM (SHERWIN-WILLIAMS)/ SNOWCEM PLUS
ENAMEL PAINTS	JOTUN/ASIAN/ SHERWIN-WILLIAMS /AKZONOBEL

ANTIRUST COATING ON METAL	BERGER, FOSROC, SIKA
INTERNAL ACRYLIC EMULSION	JOTUN/ASIAN/ SHERWIN-WILLIAMS /AKZONOBEL
PREMIX MORTAR REPAIR	PIDILITE / CHRYSO/FOSROC
MICRO CONCRETE	PIDILITE / BASF/STP/ PAR
GLASS/CARBONFIBRE WRAPPING	SIKA/S P CONCARE/BASF
FIBRES	FIBRE MESH (ONLY POLYPROPYLENE)OR EQUIVALENT
STONE FINISH TEXTURE	TEXTURE CONCEPTS, ASIAN, BERGER,AKZONOBEL
APP MEMBRANE	TIKIDAN/PIDILITE/STP

ALL OTHER SPECIFICATIONS ARE AS PER TECHNICAL DATA SHEET OF MANUFACTURER OR AS RECOMMENDED BY CONSULTANT.

ANNEXURE-J

17.QUALIFICATION CRITERIA:

NOTE: - PLEASE FURNISH ALL THIS INFORMATION IN THE SAME FORMAT FOR ALL THE SECTIONS OF THESE SCHEDULES ON YOUR COMPANY'S LETTERHEAD. DO NOT FILL THE DETAILS IN THESE PAGES.

A COMPANY PROFILE (STRUCTURE OF ORGANIZATION)

- i) Name of the firm & Address :
- i) Year of Incorporation :
- i) Status of the firm :
(Proprietorship / Partnership/ Pvt. Ltd. Co.)

iv) Names of the Owners / Partners / Directors with addresses and qualifications

v) PAN No.

vi) VAT No.

viii) Service Tax / GST no. :

B FINANCIAL STATUS OF THE ORGANIZATION:

- i) Name of the bankers & branch PH.NO :
- i) Annual Turnover for last 3 years :
2014 - 2015
2015 - 2016
2016-2017
- i) Valid I.T.C.C. for last 3 years/PAN :

- C]** (i) Details of technical personnel employed by the bidder.
(ii) Details of technical personnel proposed to be deployed for this job.

D] PROJECT EXPERIENCE

- i) Name of Project
- ii) Address
- iii) Nature of Work
- iv) Value of Work
- v) Time Span
- vi) Whether completed in Scheduled time span
- vii) Name of Consultant & his Contact no.
- viii) Name of the Secretary / Chairman & Contact nos.
- ix) WO/LOI copies /Completion certificates or any documents substantiating the contractor's experience as described in the Tender document.

E] WORKS IN HAND

Name of Project

Address

Nature of Work

Value of Work

Time Span

Name of Consultant & his Contact no

Name of the Secretary / Chairman & Contact nos.

F] WORKS TENDERED FOR

Name of Project

Address

Nature of Work

Value of Work

Name of Consultant & his Contact no

ANNEXURE-K

18. PERFORMANCE GUARANTEE FOR TERRACE W/P

We hereby guarantee that the Terrace Waterproofing work carried out by us as a part of the entire tender of the work of Major Repairs & Rehabilitation of your society building, as per our Bill No. _____ dated

_____ will remain entirely water-tight.

However, due to any unforeseen or unintentional defect left out in the work carried out by us at the time of its completion, should there be any leakage during the period of the next TEN YEARS from the date of its completion i.e.

_____, the same shall be rectified by us without any extra cost to the owners.

This guarantee shall automatically be nullified and become void if our treatment is tampered with or altered for whatsoever reason by any other agency except us, or if the body of the structure is damaged due to sinking, cracking, and/or by some external agency and/or by acts like

War or Hostility

Riot or Civil commotion or any such national emergency

Earthquake, Flood, Tempest, Lightning, or any other such natural disaster.

Accident, Fire or Explosion on the site, not caused by the negligence of the contractor.

HOWEVER, OUR GUARANTEE IS STRICTLY LIMITED ONLY TO LEAKAGES IN OUR WORK AND DOES NOT COVER ANY DIRECT / INDIRECT / IMPLIED / UNIMPLIED DAMAGES AND / OR CONSEQUENCES OR COSTS THEREOF, RESULTING FROM SUCH LEAKAGES.

THIS GUARANTEE IS STRICTLY LIMITED TO THE PERFORMANCE OF THE TERRACE WATERPROOFING WORK ONLY.

This Guarantee is valid strictly only if our full and final payments are released to us for the above work including contingency work carried out against above referred order or any subsequent order placed upon on us by you up to the date of this guarantee.

Thanking you,

For _____

ANNEXURE-L

19.PERFORMANCEGUARANTEE FOR EXTERNALPLASTERWORK

We hereby guarantee that the External Plasterwork carried out by us as a part of the entire tender of the work of Major Repairs & Rehabilitation of your society building; as per our Bill No. _____ dated _____ will remain entirely water-tight, and free from any other defects. However, due to any unforeseen or unintentional defect left out in the work carried out by us at the time of its completion, should there be any leakage during the period of the next FIVE YEARS from the date of its completion i.e. _____, the same shall be rectified by us without any extra cost to the owners.

This guarantee shall automatically be nullified and become void if our plasterwork is tampered with or altered for whatsoever reason by any other agency except us, or if the body of the structure is damaged due to sinking, cracking, and/or by some external agency and/or by acts like

War or Hostility

Riot or Civil commotion or any such national emergency

Earthquake, Flood, Tempest, Lightning, or any other such natural disaster.

Accident, Fire or Explosion on the site, not caused by the negligence of the contractor.

HOWEVER, OUR GUARANTEE IS STRICTLY LIMITED ONLY TO LEAKAGES IN OUR WORK AND DOES NOT COVER ANY DIRECT / INDIRECT / IMPLIED / UNIMPLIED DAMAGES AND / OR CONSEQUENCES OR COSTS THEREOF, RESULTING FROM SUCH LEAKAGES.

THIS GUARANTEE IS STRICTLY LIMITED TO THE PERFORMANCE OF THE PLASTERWORK ONLY.

This Guarantee is valid strictly only if our full and final payments are released to us for the above work including contingency work carried out against above referred order or any subsequent order placed upon on us by you up to the date of this guarantee

Thanking you,

For _____

ANNEXURE-I

20.CHECK LIST / CONFIRMATIONS

BIDDER SHALL SUBMIT THIS CHECK LIST/ CONFIRMATIONS DULY FILLED UP FOR EACH SL. NO. ALONG WITH THEIR OFFER

S R . N O .	SUBJECT: DETAILS TO BE SUBMITTED	BID DER 'S R E P L Y
1	<p><u>CONSENT LETTER:</u></p> <p>PLEASE CONFIRM THAT CONSENT LETTER HAS BEEN SUBMITTED WITHIN ONE WEEK OF RECEIPT OF LIB/ TENDER</p>	YES NO
2	<p><u>BID SUBMISSION:</u></p> <p>(1) CONFIRM THAT YOUR BID HAS BEEN SUBMITTED IN FOLLOWING MANER:</p> <p>PART - 1 -EMD PART</p> <p>PART - 2 -UNPRICED BID</p> <p>PART - 3 - PRICED BID</p> <p>(2) CONFIRM THAT PRICE HAS BEEN SUBMITTED EXACTLY AS PER SCHEDULE OF RATES.</p> <p>(3) CONFIRM THAT THERE IS NO CONDITION IN PRICE BID.</p>	<p>Y E S</p> <p>Y E S</p> <p>Y E S</p> <p>YES NO</p>

(4) CONFIRM THAT PRICE HAS BEEN SUBMITTED IN SEPARATELY SEALED COVER. YES NO

(5) CONFIRM THAT UNPRICED BID HAS BEEN SUBMITTED IN SEPARATE ENVELOPE MARKED AS PART-II UNDER SEPARATE PRESENTABLE FILE COVER. PAGE NUMBERED IN SEQUENTIAL MANNER. YES NO

(6) CONFIRM THAT EMD HAS BEEN SUBMITTED AS PER NIT S YES NO

DD NO:.....
NAME OF THE BANK:.....
DATE:.....

3	<p><u>BID VALIDITY:</u></p> <p>CONFIRM THAT THE OFFER IS VALID FOR 3- MONTHS FROM THE FINAL BID DUE DATE</p>	Y E S	N O
4	<p><u>FIRM PRICE:</u></p> <p>CONFIRM THAT RATES QUOTED BY YOU SHALL BE FIRM FOR ENTIRE EXECUTION OF THE CONTRACT.</p>	Y E S	N O
5	<p><u>TAXES, LEVIES ETC.:</u></p> <p>CONFIRM THAT QUOTED PRICES ARE INCLUSIVE OF ALL COSTS, EXPENSES, CHARGES, ROYALTIES, LEVIES, TAXES (EXCLUDING GST), INCLUDING SUPPLY OF MATERIALS AS PER TENDER. GOODS&SERVICE TAX WILL BE REIMBURSED AT ACTUALS AGAINSTSUBMISSION OF DOCUMENTARY EVIDENCE.</p>	Y E S	N O
6	<p><u>POWER OF ATTORNEY OR AUTHORISATION TO SIGN THE DOCUMENT:</u></p> <p>PLEASE CONFIRM THAT A POWER OF ATTORNEY OR AUTHORISATION FROM C&MD/ DIRECTOR TO SIGN THE BID, HOLDING DISCUSSIONS AND SIGNING THE MINUTES OF MEETING AND CONTRACT AGREEMENT, IS ATTACHED IN THE UNPRICED PART OF OFFER.PROPRIETARY ORGANISATION SHALL SUBMIT THE DECLARATION AS PER CLAUSE 1.2 OF ITB.</p>	Y E S	N O

	<u>REGISTRATION CERTIFICATES:</u>		
	PLEASE CONFIRM THAT YOU HAVE SUBMITTED ALL CERTIFICATES AS REQUIRED/ SPECIFIED IN CLAUSE NO 1.2 OF ITB.		
7	a)Copy of PAN card.	Y E S	N O
	b) Copy of Service Tax Registration	Y E S	N O
	c) Copy of vat & GST Registration.	Y E S	N O

	<p>d) Copy of partnership deed for partnership firm or Memorandum of understanding (MOU) and Article of Association (AOA) including Certificate of Incorporation for YES NO change in name, if any, for limited/ private limited company.</p> <p>e) Work order and completion certificate of similar work along With the statement of past experience and present commitment.</p> <p>f) Any other documents, which are specifically asked in ITB /Technical Specification/ General Terms and Conditions YES NO included in the Bidding Document, in duplicate.</p>	YES	NO
	<u>BID COMPLAINCE STATEMENT:</u>		

8 PLEASE CONFIRM THAT YOU HAVE SUBMITTED BID COMPLAINCE STATEMENT DULY FILLED, SEALED AND SIGNED YES NO

LIQUIDATED DAMAGES:

9 Please confirm the acceptance of LD (Liquidated Damages) Clause as per tender condition YES NO

10 All insurance Policies in force required for this project YES NO

ANNEXURE-II

21.BID COMPLIANCE STATEMENT

We hereby confirm that our office complies with the total techno-commercial requirements/ term and conditions of the bidding document and subsequent addendum/ corrigendum (if any) without any deviation/ exception/ comments/ assumptions.

We also confirm that we have quoted for all items of schedule of rates and prices have been filled without any condition and deviation.

SIGNATUREOFBIDDER : _____

NAMEOFBIDDER : _____

COMPANYSEAL : _____

ANNEXURE - III

22.FINANCIAL REQUIREMENTS

A. ANNUAL TURNOVER STATEMENT

The Bidder shall produce the turnover certificate of preceding 3 years duly certified by external chartered accountant in the format enclosed as Annexure IV (A) herewith. Further bidder must enclose copy of the audited balance sheets & profit & loss account statement.

Notes: Enclosed copies of audited balance sheets, including all related notes, and income statement for the last audited financial years (as indicated above), complies with the following conditions.

- All such documents reflect the financial situation of the bidder and not sister or parent companies.
- Historic financial statements must be audited by a certified accountant.
- Historic financial statement must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statement for partial periods shall be requested or accepted)

B. Bidder shall work out & provide the NET WORTH on following basis on their letterhead.

C. Net Worth = Reserve + Capital – Accumulated losses

D. Copy of Income Tax return file within last 12 months is enclosed.

E. Copy of Service Tax registration and Challans/Payment thereto to be enclosed.

	PAN No. (Given by Income Tax)	Service Tax/GST Registration No.

F. Details of Bank particulars (All details as per format attached as Annexure-V)

(Seal & Signature of Bidder)

(Seal & Signature of C.A.)

ANNEXURE-IV

23.TURNOVER CERTIFICATE

(To be submitted duly certified by external chartered accountant)

TO WHOM SO EVER IT MAY CONCERN

This is to certify that we have verified the Books of Accounts of M/s. _____, a company having registered office at _____.
The Annual turnover for last three financial years is as under:

FINANCIAL YEAR	ANNUAL TURNOVER (IN RUPEES)
2014 - 2015	
2015- 2016	
2016-2017	

The above figures are certified on the basis of audited Balance Sheets produced before us for our verification.

(Seal & Signature of C.A.)

ANNEXURE – V

24.BANK ACCOUNT PARTICULARS

- a) BIDDER'S NAME:
- b) ADDRESS OF BIDDER:
- c) PARTICULAR OF BANK ACCOUNT:
- d) NAME OF THE BANK:
- e) NAME OF THE BRANCH:
- f) BRANCHCODE:
- g) ADDRESS OF THE BANK:
- h) 9 DIGIT CODE NUMBER OF THE BANK & BRANCH:
 - i. (as appearing in MICR Cheque issued by the Bank)
- i) TYPE OF ACCOUNT (SB, CURRENT, CASH,CREDIT):
- j) ACCOUNT NUMBER:
- k) WHETHER BRANCH IS RTGS/INTERNET ENABLED:
(if yes, then Bank's IFSC Code number)

I hereby declare that the particulars given above are correct and complete and accord our consent for receiving payment through electronic mechanism.

(_____)

Signature of the authorized signatory (ies) & Designation

Place:

Date:

Official seal of the company

BANK CERTIFICATION

Certified that the particulars furnished above are correct as per our records

Place:

Date:

Signature of the authorized official of the bank
with Bank's Stamp

25.SCHEDULE OF RATES

The Schedule of Rates should be read with all the other sections of this tender document.

The tenderer shall be deemed to have studied the drawings, specifications and details of works to be done within the time schedule and to have acquainted himself of the conditions prevailing at site.

The quantities shown against the various items are only approximate rate and may vary subject to the provisions of Terms and Conditions of Contract.

No claim shall be entertained at a later date towards any items due to the above including where low / high rates have been quoted by the successful tenderer.

The NICL reserves the right to interpolate or extrapolate the rates for any new item of work not covered in Schedule of Rates from the similar items already available in schedule of rates. All the works item wise shall be measured upon completion and paid for at the rate quoted and accepted in the schedule of rates. In case any activity though specifically not covered in Schedule of Rates descriptions but the same is covered under scope of work / specification / drawings etc. no extra claim on this account shall be entertained, since SOR is to be read in conjunction with all other documents forming part of the .contract.

The quoted rates shall be inclusive of all taxes and duties like income tax, works contract tax, excise duty, sales tax, Octroi, on bought out items except GST.

GST shall be reimbursed at actuals against submission of documentary evidence. Tenderer must submit his Goods & service tax registration number in the unpriced offer.

All items of work mentioned in the Schedule of rates shall be carried out as per specifications, drawings and instructions of Consultant and the rates are inclusive of material consumable, labor, supervision, tools & tackles and detailing of construction / fabrication drawing isometric wherever required as called for in the details specification and conditions of the contract.

If some discrepancies are found in rates/amount indicated in schedule of rates in figures and words the rates indicated in words with full description shall prevail and shall be considered for evaluation.

SCHEDULE OF RATES PART-A (ENABLING & GENERAL WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES					
MODULE A: ENABLING & GENERAL WORKS					
No	Description	Unit	Qty.	Rate	Amount
1	Providing Steel scaffolding (H Frame) for Building External Area. Making of working platform, wherever required using heavy duty structural steel members capable of taking entire steel scaffold load. Metal plate & all other materials as required included in item.	Sq.Ft	30000		
2	Providing bamboo scaffolding in staircase area	Sq.Ft	5500		
3	Providing full proof Vertical nylon net for protection around scaffolding	Sq.Ft	30000		
4	Providing & fixing horizontal double safety net as directed by C.E.	Sq.Ft	3000		
5	Providing 6mm thick ply for protection of openings during works	Sq.Ft	5000		
6	Working Platform: ground floor to Terrace: Providing, erecting & fixing the working Platform on 6th floor for erection of scaffolding by Steel props & pipes, etc. Covering the bottom with GI Sheet for safety as required to external wall during repairs to avoid any debris falling, etc. complete.	Sq.ft.	5000		

7	Removing loose damaged plaster/ Concrete from wall, column, beam, slab, chajja, cleaning and preparing the surface as directed including the joints of masonry junction ; wherever absolutely necessary as in the form of major cracked, deboned, etc. (External & internal patch plaster) . Rate include cutting edges of marked areas using cutter/grinder as directed by C.E.	Sq.Ft	21000		
8	Providing M. S. props at passage area during structural repairs	Nos.	10		
9	Carefully breaking & removing existing waterproofing layer from top of chajjas top etc. using light hammer without causing damaged to slab including the cleaning of the concrete surface of dirt / dust, carting away debris, etc. comp	Sq.Ft	6500		
10	Debris Removal per truck/lorry 2 brass each	Nos.	50		
Sub Total (A) :					

SCHEDULE OF RATES PART-B1 (WATERPROOFING WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES					
MODULE B1: WATERPROOFING WORKS (MAIN TERRACE)					
No	Description	Unit	Qty.	Rate	Amount
1	Providing & IPS layer in cement mortar admixed with integral waterproofing compound over the prepared / cleaned existing brick bat top after applying cement slurry to the required slope and with proper round watta the junction slab with wall incl. water drip mould. Providing and fixing china chips top finished incl. ponding, curing etc. complete. For building terrace top (Patch work).Breaking existing waterproofing topping & debris removal included in item.	S q. Ft .	1500		
2	Parapet wall top existing plaster breaking & making new plaster with china mosaic.	S q. Ft .	500		
3	Providing & Laying cement based waterproofing IPS approx. 50mm thick over chajjas or terrace top in cement mortar in ratio 1:3 admixed with integral waterproofing compound over the prepared / cleaned slab to the required slope and with proper round.	S q. Ft .	6500		
4	Providing & applying chemical coating over chajjas top using approved polymer modified coating in 2 coats & sprinkling quartz sand for mechanical Bonding of Koba	S q. Ft .	6500		

5	Providing & fixing of P.V.C. perforated nozzles of 10-12mm dia. By drilling the holes in concrete to a depth of 100mm (plugging the hole by cement: polymer) and injecting polymer modified cement slurry grouts through the nozzles using Grout pump at terrace & chajjas	N o s.	250		
6	Providing & laying 4 MM thick APP on entire cleaned & prepared terrace floor along with watta for terrace top including parapet wall inside. Silver top coat 2 layers included in rates	S q. Ft	7000		
7	Providing & applying PU/Silicone sealant at periphery of windows as per Rft. Specifications as directed by Consultant. Rate includes masking tapes on sides & removing the same post sealant application.	R ft.	1500		
Sub Total (B1):					

SCHEDULE OF RATES PART-B2 (WATERPROOFING WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD, FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES					
MODULE B2 : WATERPROOFING WORKS (MINI TERRACE)					
No	Description	Unit	Qty.	Rate	Amount
1	Providing & laying 4 MM thick APP on entire cleaned & prepared terrace floor near canteen along with watta for terrace top including parapet wall inside. Silver top coat 2 layers included in rates	S q · F t.	1800		
2	Providing & IPS layer in cement mortar admixed with integral waterproofing compound over the prepared / cleaned existing brick bat top after applying cement slurry to the required slope and with proper round watta the junction slab with wall incl. water drip mould. Incl. ponding, curing etc. complete. For building terrace top at near canteen (Patch work).Breaking existing waterproofing topping included in item.	S q · F t.	450		
3	Providing & fixing of P.V.C. perforated nozzles of 10-12mm dia. By drilling the holes in concrete to a depth of 100mm (plugging the hole by cement:polymer) and injecting polymer modified cement slurry grouts through the nozzles using Grout pump at terrace &chajjas	N o s	90		
Sub Total (B2)					

SCHEDULE OF RATES PART-C (STRUCTURAL REPAIR WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWERS, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES					
MODULE C: STRUCTURAL REPAIRS					
No	Description	Unit	Qty.	Rate	Amount
1	Polymer Modified Mortar treatment to RCC for external & internal area				
	Providing & applying ready to use polymer modified mortar from STP Ltd. or equivalent as per manufactures specification for vertical & overhead applications in layer over prepared RCC column/ beam/slab as directed and levelling upto old profile of concrete including curing complete. Concrete breaking, rust cleaner & rust Passivator coat, bond coat etc. as directed by C.E. as per manufacturer specifications included in rates.	K g s	30000		
2	Non Polymer treatment for Ext. Elevation Finish, Staircase pardi wall & Chhajja ceiling & Staircase ceiling for external & internal area as directed by C.E. Concrete breaking, rust cleaner & rust Passivator coat, bond coat etc. as directed by C.E. as per manufacturer specifications included in rates	S q . F t .	10000		
3	P& F HYSD bars including cutting, bending, and tie using binding wire in position completed for all dia. For main/ ancillary rebars. INCLUDING WELDING for external & internal area.	K g s	1500		
4	Jacketing Pour ready-mix micro concrete in the formwork which is formed by mixing 12.5 % of water by weight of micro concrete till it forms a flow able consistency with shuttering at badly damaged basement, internal toilet/bath side & duct side columns	K g s	5000		

	/ beams				
5	Carbon Fibber wrapping on str. Members 900 GSM incl. epoxy bonding adhesive & saturant coat at basement slab, & internal toilet/bath side columns & beams to add on bending moments & flexural strength around micro concreted columns / beams	S q . F t .	1000		
6	Epoxy bonding adhesive with long pot life for old to new concrete bonding before micro concreting	S q . F t .	400		
7	Shear connector with epoxy mortar fixing before fixing shuttering for micro concrete using L shaped tor steel bar to hold new reinforcement at every ring level on all exposed sides of structural member	N o s .	100		
8	Anchor fastener for rebar fixing to avoid lap length at top & bottom portion of new reinforcement meeting RCC str. Member & at joineries of rebars as directed by C.E.	N o s	40		
9	Demolition of brick work For columns jacketing.	S q . F t .	100		
10	Construction of 9"thk brick work.	S q . F t .	100		
Sub Total (C):					

SCHEDULE OF RATES PART-D (PLASTERING WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES**MODULE D: PLASTERING**

No	Description	Unit	Qty.	Rate	Amount
1	Providing & Applying sand faced plaster approximately 25 to 35 mm thick in 2 coats of cement mortar including addition of as approved fibbers in 1st coat @125 gm / cement bag and waterproofing compound in 2nd coat @200 ml/ cement bag included. Premix bagged plaster for external area in patches	Sq. Ft.	21000		
2	Plaster Dash coat in cement mortar in premix plaster of average 12mm thick for extensive damaged brick masonry or additional thickness of mortar.	Sq. Ft.	5000		
3	Providing & Applying single coat GYPSUM plaster up to 25 mm thick as per mfrs. Specifications. Breaking plaster & removing debris at designated place included in item	Sq. Ft.	2000		

Sub Total (D) :

SCHEDULE OF RATES PART-E (PLUMBING WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES**MODULE E: PLUMBING**

Sr. No.	Description	Unit	Qty.	Rate	Amount
1	Removing existing & New fixing PVC Class B plumbing pipes with necessary fittings, clamps, solution, including scaffolding etc. complete as per instruction. Of size as under.				
a	100 mm dia RW pipe and fittings.	R.Ft.	900		
b	75 mm dia Bath. Pipe and fittings.	R.Ft.	400		
c	100 mm dia W.C. pipe and fittings.	R.Ft.	400		
d	Temporary PVC Lines during replacement of all dia pipes	R.Ft.	250		
2	Water supply Down take lines with removal of existing damaged line and Providing & fixing with New multi-layer composite Pipes with fittings, etc. complete.				
a	2" dia	R.Ft.	240		
b	1 1/2" dia	R.Ft.	480		
c	1" dia	R.Ft.	600		

d	3/4" dia	R.Ft.	240		
e	Providing wall pieces for water supply line to insert through PVC sleeve of 2" dia	Nos.	50		
3	Water supply Loop lines with removal of existing damaged line and Providing & fixing with New multi-layer composite Pipes with fittings, etc. complete.				
a	2" dia	Rft.	300		
4	Providing & fixing fabricated G.I. Spacers for 2" gap between wall & pipes for water supply & loop & External drain down take.	Nos.	600		
5	Providing & fixing A.C.P. sheet Rat Guard for drain line pipes at 6 TH floor level as directed by C.E.	Nos.	20		
6	New PVC Pipe fixing 2" dia with flexible pipes to be connected to air conditioners as directed by C.E. Only linear main pipe measurement shall be paid.	R.Ft.	1000		
7	Service/ delivery Line 2" with New CPVC Pipe with all fittings & fixtures as directed by C.E.	R.Ft.	350		
Sub Total (E):					

SCHEDULE OF RATES PART-F (PAINTING WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES**MODULE F: PAINTING WORKS**

No	Description	Unit	Qty.	Rate	Amount
1	Providing and applying of aliphatic colour less solvent free PU coating over one coat of primer over 2 to 2.5 mm thick texture Applying 1 coat of Sealer Primer Applying Acrylic Texture Base coat Marking the grooves in desired colour Applying Stone Texture as per design required on base coat Applying Highlight colour on select bricks as per approved design Applying clear aliphatic PU sealer coat in 2 coats as per manufacturer specifications Cleaning and touch up. As per attached image. as directed by C.E.	Sq.ft.	26000		
2	Crack filling using premix acrylic paste of approved make as directed by C.E.	Rft.	5000		

3	Providing & Applying Two coats of Acrylic Paint in approved shade / make over one coat of primer for duct wall surface including cleaning scaffolding etc. complete. as per manufacturer's specification.	Sq. Ft.	3000		
4	Staircase Area Painting.				
	Providing & Applying Two coats of acrylic emulsion with full acrylic wall putty in approved shade / make over one coat of primer for wall & Ceiling surface including cleaning the surface, filling white cement putty in undulations & holes, scaffolding etc. complete. as per manufacturer's specification. Inside Staircase wall & ceiling	Sq. Ft.	10500		
5	Melamine polish for wooden handrail	R.Ft	750		
6	Anti-corrosion painting of entire M.S.Staircase using a coat of zinc rich epoxy flowed by 2 coats of PU solvent free system with finishing etc. Complete	Sq. Ft.	4,000.00		
SUB TOTAL (F)					

SCHEDULE OF RATES PART-G (ADDITIONAL WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES**MODULE G: ADDITIONAL WORKS**

No	Description	Unit	Qty.	Rate	Amount
1	Providing average 50 mm thick Ferro Cement chajja on top floor entire bldg. & above on staircase midlanding Windows as directed by CE. Waterproofing coating using flexible polymeric coating included in item	Sq. Ft.	1200		
2	Lift Machine Room flooring removing & fixing new tiles over cement mortar bedding of 20 mm thick and 15 mm thick unpolished kota stone.	Sq. Ft.	100		
3	Green marble double Patti framing around aluminium window frames including removal of old broken frames	Rft	1500		
4	Window & Split A.C. outer unit Removing refixing at any height & location as directed by C.E.	Nos	85		
5	A.C. Ply protection at any height & location as directed by C.E. using 6 mm ply during civil works & painting. Item will be paid only once per unit.	Sq. Ft.	1000		
6	Removing vegetation growth using chemicals as directed by consultant. Rate should include patching up civil work, stucco etc. complete.	Nos	15		
7	Removing old M.S./aluminium windows & stacking at designated place of the buildings directed by C.E... Old windows shall be client's property.	Sq. Ft	2500		

8	New aluminium window anodised with approved heavy sections using 5mm clear toughened glass as directed by C. E.	Sq.Ft	2500		
9	Removing existing broken glass for window at any height & fixing New 5mm clear glass in metal Frame incl. repair/fabrication at frame & all tools, tackles, sealant etc. complete in entire building at wherever required	Sq.Ft	500		
10	Cable removal & refixing from parapet wall wherever required as directed by C.E.	Rft.	400		
11	Breaking of mosaic skirting upto 5" height at both sides from passage & midlanding.	Rft	800		
12	Providing skirting upto 6" height at both sides from passage & midlanding using granite of 12 mm thickness as directed by C.E.	Rft	800		
13	Removing of existing mosaic steps & providing 12 mm thick Kota stone by removing existing stone & fixing in cement.. Tread & riser will be considered as one step. Rate to include 3 anti-skid grooves @ 3 mm deep each. Size: Tread - 3' X 11" & Riser - 3' X 6"	Nos.	360		
14	Providing of existing mosaic staircase midlanding to 12 mm thick Kota stone by removing existing stone & fixing in cement.	Sq.ft	300		
15	Removing of existing passage flooring with debris removal	Sq.ft.	1200		

16	Replacement of passage flooring using upto 18 mm thick composite Quartz Granite stone of approved shade & design as directed by C.E.	Sq.ft.	1200		
17	Tiling 1mtr on both the side to entire staircase side wall & pardi upto terrace (Tile size: 2'0"x2'0")	Sq.ft.	3200		
18	Water meter existing removing/fixing with new one				
a	40mm	Nos.	2		
b	25mm	Nos.	1		
19	Black granite cladding around lift doors. (Except 6th, 7th & 11th floor)	Sq.Ft.	150		
20	Providing and fixing Pigeon net to duct using non corrosive J hooks to be fixed on alum. Sections window as directed by C.E.	Sq.Ft.	350		
21	Green marble framing around aluminium frames including removal of old broken frames	Sq.Ft.	1100		
22	Removal of existing aluminium composite panel at canopy & refixing post repairs incl. Replacing damaged ACP	Sq.Ft.	800		
23	Providing and fixing powder Coated aluminium work for doors, windows, ventilators and partitions, glazing and similar, with extruded built up or standard tubular and other sections of approved make conforming to IS:733 and IS:1285, powder coating shall be of minimum 50 microns, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides	Sq.Ft.	2500		

	with required PVC/neoprene felt, etc., Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, complete as per architectural drawings and the directions of the consultant and Engineer-in-charge. All the consumables are included under this item. Cleats or other small pieces required for fabrication of the structure shall be included in the rate and will not be paid separately) (Glazing, Hard ware Fittings and panelling, rubber beading, bearing of windows will be quoted separately under respective Item of BOQ.).				
24	Providing 18 gauge Aluminium Tray for flower pot with opening having filter of PVC Jalis to avoid soil entering pipe.	Sq.Ft.	250		
25	Providing & Fixing M.S. Cage using 50 X50 X 6mm M.S. Angles & 25 X 5mm M.S. Flats with necessary structural members to carry outdoor spilt A.C. units by fixing the same on existing walls using Hilti anchor fasteners by drilling & using epoxy with all safety precautions at various levels of building as design approved by C.E. with all safety precautions etc. complete. Cage internal width from @ 600 up to 900 mm & height @ 600 to 750 mm with open top. Width & height will be measured as one unit & will be	Sq.Ft.	5000		

	multiplied with length to arrive at measurement.				
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Sub Total (G) :

SCHEDULE OF RATES PART-H (FABRICATION WORKS)

**TENDER FOR REPAIR & RENOVATION AT OUR
NATIONAL TOWER, STERLING CINEMA BUILDING,
65, MURZBAN ROAD,FORT, MUMBAI.**

UN-PRICED

SCHEDULE OF QUANTITIES**MODULE H : FABRICATION WORKS**

No	Description	Unit	Qty.	Rate	Amount
1	Removing old & fixing new M.S. Emergency exit staircase. Replacement of structural steel chequers plate, channel, angle, pipes & other sections of all sizes	Kgs	6500		
Sub Total (H)					

SUMMARY AT A GLANCE

A	ENABLING & GENERAL WORK			Rs	
B 1	WATERPROOFING WORKS (MAIN TERRACE)			Rs	
B 2	WATERPROOFING WORKS (MINI TERRACE)			Rs	
C	STRUCTURAL REPAIRS			Rs	
D	PLASTERING WORKS			Rs	
E	PLUMBING WORKS			Rs	
F	PAINTING WORKS			Rs	
G	ADDITIONAL WORKS			Rs	
H	FABRICATION WORKS			Rs	
	GRAND TOTAL				
GST WILL BE PAID EXTRA AS APPLICABLE					

26.STONE FINSH APPROVED IMAGE





