

PART-B

Major Component (Civil Work)

General Conditions

- 1 The order of preference in case of any discrepancy shall be as under:-
 - i) Nomenclature of items as per schedule of quantities.
 - ii) Particular specification and special condition, if any.
 - iii) Architectural Drawings
 - iv) CPWD specifications.
 - v) Indian standard specifications of B.I.S.
 - vi) Sound Engineering Practice as approved by the Engineer-in-charge.
2. In case there is any discrepancy between English Version and corresponding Hindi version, if provided, then the provisions in English Version will prevail.
3. The contractor shall quote their rates inclusive of all taxes, cartage, royalties etc. complete.
4. The contractors are advised to visit the site of work to have and acquaint himself with the site condition an idea of the execution of the work; failure to do so will not absolve their responsibility to do the work as specified in agreement.
5. Before bringing any material at site, the agency will intimate the source of material by submitting the invoice and will get approved the sample first and all the material to be used shall be got approved from the Engineer-in-Charge before Installation at site.
6. The bad workmanship will not be accepted and defects shall be rectified at contractor's risk and cost to the satisfaction of the Engineer-in-Charge. The electrical works are to be executed in coordination with the building work and no claim for idle labour will be entertained.
7. All the debris of the works should be removed and the site should be cleared by the contractor immediately after accumulating of debris. Similarly, any rejected material should be immediately cleared off from the site by the contractor.
8. The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the user and to the public in general and to prevent any damage to such properties and any pollution of smoke, streams and waterways. He shall make good at his cost and to the satisfaction of the Engineer-in-Charge, any damage to roads, paths, cross drainage works or public or private property whatsoever caused by the execution of the work or by traffic brought thereon by the contractor. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants/users of adjoining buildings.
9. Any damage caused to the fittings/switch gears/installation/machinery as a result of negligent execution of the work, shall be replaced/to be made good by the contractor at his own cost.
10. The Contractor will submit all the credentials of Staff to be deputed at site as per requirement of Agreement within 7 days from the start of Works to the Engineer-in-Charge. The deployed manpower will be police verified by the agency. Manpower once deployed will not be frequently changed. However, if necessary, the replacement of any staff will subject to approval of JE/AE in-charge and obtaining of police verification.
11. The character and antecedents of staff employed by the contractor shall be got verified from the police by the contractor. The contractor shall have to apply before concerned police station within 10 days from the date of start of work.

12. The staff engaged by the contractor should be well behaved, polite and courteous. Any complaints against staff misbehaviour should be taken very seriously and such staff should be removed by the contractor immediately from the site and arrange replacement for the same failing which the Engineer-in-charge has the power to cancel the contract and the contractor shall have no right to claim of loss/compensation.
13. The contractor has to work in restricted / occupied campus area and in restricted time (odd hours) due to security reasons. He shall be bound by the instructions of security staff and Engineer-in-Charge on the working and for moment of labour , material etc. and agency shall plan the worked to be carried out in such a manner so that the occupants are not inconvenienced in this respect.
14. Contractor shall provide name, father's name, residential address and other details i/c photo as may be required by the security staff or issue of photo pass to the labour engaged on work.
15. The Department shall arrange entry passes for site Complex.
16. The main/associated contractor shall have registration with Employee Provident Fund Commissioner and Employee's State Insurance Corporation for safe guarding the interest of his workmen. The contractor shall obtain all necessary approval from state/Local Body as per law in vogue.
17. The contractors shall pay the wages & allowances as applicable and revised time to time by the Govt. and the Contractor shall submit the proof of increased wages paid wages register and bank statement to the workers deployed with for re-imbursement/claim under Clause 10 C of agreement.
18. No claim for idle establishment & labour, machinery & equipment, tools & plants and the like, for any reason whatsoever, shall be admissible during the execution of work as well as after its completion.
19. ESI & EPF shall be reimbursed to the firm on actual basis paid by the firm on production of proper documentary evidence.
20. The contractor will hire separate labour for Civil & Electrical works and deposit ESI and EPF contribution(vide separate ECR and Challans) deducted from the employee and contribution on the part of employer paid by the contractor to the concerned authorities. For reimbursement of ESI & EPFO from the department the contractor shall submit an affidavit on stamp paper of Rs. 10 along with the duly paid challans stating "I have not claimed the reimbursement of this bill from anywhere else. I shall also not claim this from any other of office in future"
21. Safety of staff will be the responsibility of the contractor as per labour law. The department will not be a party in such litigation.
22. After the expiry of the contract, the firm shall have to hand over complete installation to the department in proper working order. All defects and deficiencies shall have to be rectified by the firm to the entire satisfaction of Engineer-in-charge failing which, the work shall be got done at the risk and cost of the firm.
23. The contractor shall have to arrange for issue of identity cards as per directions from the department for all staff engaged within two week of start of work at his own cost and also submit two extra photographs of each workers for record. If he fails to do so, the department shall recover Rs. 25/- per person per day for this default from the monthly bills.

24. Any Renovation Works carried out separately by any Agency during the currency of the Contract shall be maintained under the Scope of this Works but any major defects in the said works during the guaranty period is the responsibility of concerned agency who executed the work.
25. The contractor or his representative is bound to sign the site order book as and when required by the Engineer-in-Charge and to comply with the remarks therein.
26. Unless otherwise provided in the Schedule of Quantities/Specifications, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the work and nothing extra shall be payable to him on account of the same. Rates quoted will be applicable for the centering/shuttering up to height of 3.5 mtrs on all floors and nothing extra will be payable. Extra payment for centering /shuttering, if required to be done for floor heights greater than 3.5 m shall however be admissible at the rates arrived at in accordance with clause 12 of the agreement, if not already specified.
27. The contractor (s) shall give to the Municipality, Police and other authorities all necessary notices etc. that may be required by law and obtain all requisite Licenses for temporary obstructions, enclosures etc. and pay all fee, taxes and charges which may be leviable on account of these operations in executing the contract nothing extra shall be paid / reimburse for the same. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain light and other illumination on for cautioning the public at night.
28. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night speed limit boards red flags, red lights and providing barriers. He shall be responsible for all dangers and incidents caused to existing / new work due to negligence on his part. No hindrances shall be caused to traffic during the execution of the work.
29. **The contractor shall make his own arrangement for obtaining water and electric connection(s) if required and make necessary payments directly to the department concerned.**
30. If as per local Municipal regulations or any due to any other restriction, the huts for labourers are not to be erected at the site of work, the contractor shall be required to provide such accommodation at a place outside the campus as is acceptable to the local body and nothing extra shall be paid on this account.
31. It shall be ensured by the contractor that no electric live wire is left exposed or unattended to avoid any accidents in this regard.
32. The contractor shall maintain in perfect condition, all portions executed till completion of the entire work allotted to him. Where however phased delivery of work is contemplated these provisions shall apply separately to each phase.
33. The entire royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, metals, sand etc. Collected by him for execution of the work, directly to the Revenue authority or authorized agents of the State Government concerned or the Central Government, as the case may be.
34. If the work is carried out in more than one shift or during night no claim on this account shall be entertained.
35. Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or

otherwise occupy any part of the site in a manner likely to hinder the operation of such services.

36. The contractor shall bear all incidental charges for cartage, storage and safe custody of materials issued by department.
37. In the event of prolongation of agreement due to delay or reduction in the scope of work, no claim on account of reduction in the scope of work, loss of business, loss of profit consequently, overheads and any type of interest etc. will be entertained.
38. The contractor shall protect and indemnify the CPWD and its officials & employees against any claim and/or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts
39. The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the CPWD from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department CPWD against all claims in respect of patent rights, royalties, design, trademarks- of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.
40. The contractor shall also comply with the provisions of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time. Any failure to fulfil these requirements shall attract the penal provisions of the relevant act and in this contract.
41. The contractor as soon as possible but within 7 (seven) days of issue of letter of award of work shall submit a time and Progress chart to the Engineer-in-Charge.
42. Wherever any reference to any Indian Standard Specifications/ International standard occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued there-to or revisions thereof, if any, up to the date of receipt of tenders.
43. Samples for particular items of work shall be prepared, where so specifically desired by Engineer-in- charge, for prior approval of the Engineer-in-charge, before taking up the same on mass scale and nothing shall be payable on this account.
44. Wherever desired by Engineer-in-charge, the contractor shall also construct a sample unit complete in all respect within time specified by the Engineer-in-charge & this sample unit shall be got approved from the Engineer-in-charge before mass construction is taken up. No extra claim, whatsoever beyond the payment due at agreement rates, will be entertained to the contractor on this account.
45. In case of deliberate delay of recording and submission of measurements, MBs and RA bills as per clause 6 of the GCC. The Engineer-in-charge shall act and ascertain to record the measurements, MB and RA bills after issue of 7 days notice in this regard since Engineer-in-Charge has the responsibility to engineer the contract agreement and record the measurements during progress of work.

46. Unless otherwise specified in the schedule of quantities, the rate of all items of the work shall be considered as inclusive of pumping out or bailing out water, if required, for which no extra payment will be made. This will include water encountered from any source such as rains, floods, sub-soil water table being high or due to any other cause whatsoever.
47. The working drawings shall mean to include both architectural and structural drawings respectively. The structural and architectural drawings shall be properly correlated before executing the work. In case of any difference noticed between architectural and structural drawings, final decision, in writing of the Engineer-in-charge shall be obtained by the contractor before proceeding further.
48. The words “Equivalent”, “Approval” and authorized” in these specifications shall imply and require written approval of the Engineer-in-Charge.
49. Income Tax, Labour cess, GST and other taxes shall be recovered on the gross amount of the bills as per relevant rules.
50. The contractor will have to store material at a designated place in the Campus away from work site and thereafter bring material to work site as per requirement.
51. It is mandatory for the Agency to submit work program within one week of the award of Work failing which action may be taken as per terms and condition of the agreement.
52. Hindrance, if any, must be recorded through ERP only. Any entry through physical register will not be accepted.
53. RFI must be recorded/uploaded on daily basis/date of execution. RFI for older period will not be accepted. For older RFIs department will not be responsible for payment.
54. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants/users of building.
55. The contractor will intimate the Engineer-in-charge or his representative through RFI in ERP module in sufficient time before the covering of hidden items, so that joint measurement can be taken up jointly.

56. SAFETY MEASURES

a. Temporary Barricading

- ~~(a) — Proper temporary barricading by fencing with G.I. sheets, shall be carried out by the Contractor at the start of work to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent plots. It shall be done by providing, erecting, maintaining temporary protective barricading, 2.5 meters in height, made in panels, with each panel having MS frames / MS scaffolding pipes of suitable size and stiffness, with 24 gauge thick GI corrugated sheet or suitably~~

~~stiffened plain GI sheet fixed on frames. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 2 meters spacing, for the entire duration till completion of the work. He shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. Temporary protective roofing near the Entrance to the building, under construction, shall be made to protect the visiting officials from getting hurt by falling debris etc. Also, one or more coat of enamel paint of shade as approved and directed by the Engineer in Charge shall be applied on the panels and "CPWD" shall be painted over that in suitable sizes, shapes and numbers as directed by the Engineer in Charge. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer in Charge.~~

- (b) Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.

b. Warning / Caution Boards

All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

c. Sign Boards

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies. Nothing extra shall be payable on this account.

- d. Necessary protective and safety equipments shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and used at site.
- e. No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer -in- Charge in this regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

57. SETTING OUT

- a. The Contractor shall carry out survey of the work area, at his own cost, setting out the layout and fixing of alignment of the pile work, building in consultation with the Engineer-in-Charge & proceed further. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be allowed to be used for layout, fixing boundaries, centre lines, etc., along with theodolites. Nothing extra shall be payable on this account.
- b. The Contractor shall establish, maintain and assume responsibility for grades, lines, levels and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc. to the Engineer-in-Charge before commencing work. Commencement of work shall be regarded as the Contractor's acceptance of such grades, lines, levels, and dimensions and no claim shall be entertained at a later date for any errors found.
- c. If at any time, any error in this regard appears during the progress of the work, the Contractor shall, at his own expense rectify such error, if so required, to the satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.
- d. Though the site levels are indicated in the drawings the Contractor shall ascertain and confirm by him, the site levels with respect to benchmark from the concerned authorities. The Contractor shall protect and maintain temporary/permanent benchmarks at the site of work throughout the execution of work. These benchmarks shall be got checked by the Engineer-in-Charge or his authorized representatives. Nothing extra shall be payable on this account.

The work at different stages shall be checked with reference to bench marks maintained for the said purpose. The cost of carrying out lay outs at all stages including marking of reference points, center lines of the building etc. including construction/

ADDITIONAL CONDITIONS

- 1.1 The contractor shall take instructions from the Engineer-in-charge for stacking of materials at site. No excavated earth or building materials shall be stacked on areas where the buildings, roads, services or compound walls or any other structure are to be constructed.
 - 1.1.1 If ISI marked products are available, the contractor shall use only ISI marked products. In other cases, the materials shall conform to CPWD specifications. In case a materials/product is neither covered by ISI nor by CPWD specification, the work shall be carried out as per sound engineering practice, in such case, the decisions of the Engineer-in-charge shall be final & binding. In such cases Engineer-in-charge shall satisfy himself about the quality of such materials and give his approval in writing. Only articles classified as first quality by the manufacturers shall be used, unless otherwise specified. All materials not bearing ISI mark shall be tested as per relevant ISI specifications. The Engineer-in-charge may relax the condition regarding testing if the quantity of the materials required for the work is small. In all cases of use of ISI marked materials, proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the entire satisfaction of Engineer-in-charge.
- 1.2 Other agencies doing works related with this project will also simultaneously execute the work and the contractor shall afford necessary facilities for the same. The contractor shall leave such necessary holes, opening etc., for laying/burying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps etc. as maybe required for other agencies. Conduits for electrical wiring/cables will be laid in such a way that they leave enough space for concreting and do not adversely affect the structural members. Nothing extra over the agreement rates shall be paid for the same. The contractor shall extend necessary co-operation to other such agencies without any claim on this account.
- 1.3 Any cement slurry, required to be added over base surface for bond or for continuation of concreting, its cost shall be deemed to have been included in the respective items, unless specified otherwise and nothing extra shall be payable nor extra cement shall be considered in the cement consumption on this account.
- 1.4 Stacking of materials and excavated earth including its disposal shall be done as per the directions of the Engineer-in-Charge. Double handling of materials or excavated earth, if required, shall have to be done by the contractor at his own cost.
- 1.5 The building work will be carried out in the manner complying in all respect with the requirements of relevant bylaws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-charge and nothing extra will be paid on this account.
- 1.6 The contractor shall give a performance test of the entire installation(s), as per standing specifications, before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
- 1.7 The work pertaining to the items of internal finishing should be started in consultation and with prior approval of Engineer-in-Charge as soon as the structure of two floors is completed.
- 1.8 Any damage to work resulting from weathering conditions, defacing or from any other cause such as negligent act on the part of contractor, until the work is taken over by the Department after completion of work, shall be made good by the contractor at his own cost.

- 1.9 Dismantling of cement concrete floors shall be done with the help of mechanized vibratory hammer, drills etc. The work shall be carried out in such a way that there should be least disturbance to the occupants and work should be completed within least possible time. The contractor must ensure that there should be no damage to the supporting RCC members.
- 1.10 Any damage to the building, furniture, fittings of any other articles etc. done by the contractor or his workmen during the execution of work, shall be made good by the contractor, failing which the same shall be made good by the Engineer-in-charge or his authorized representative at the risk and cost of the contractor.
- 1.11 All doors, windows, floors, furniture, electrical fittings and other articles shall be protected from dust, splashes & damages sufficient covering for the day's work shall be shown to the representative of the Engineer-in-charge before the contractor is allowed to proceed with the work, splashes & droppings from whitewashing, colour washing, distempering painting etc. on walls, floors, doors and window, down take pipes, furniture shall be removed by the contractor at his own cost and surface cleaned simultaneously after the completion of the day's work is done, without waiting for the actual completion of the other items of work of the contract. In case the contractor fails to comply with this requirement the Engineer-in-charge or his authorized representative shall be the right to get this work done at the risk and cost of the contractor either departmentally or through another agency without issue of any notice to the contractor, departmentally or through another agency without issue of any notice to the contractor, on his account. The representatives of the Engineer-in-charge will however, mention about it in the site order Book employing the labour on the job at the contractor's cost.
- 1.12 **Full quantity of material such as paint plastic emulsion paint, oil bound distemper etc. shall be deposited in sealed container in advance and get it checked by Engineer-in-charge before use.**
- 1.13 Shifting of furniture such as sofa table, chairs, glass etc. and making necessary arrangements to protect the furniture, carpets, and floors etc. from any spillage during the execution of work shall be done by the contractor. Any damage if done, shall be made good by the contractor at his own cost, nothing shall be paid extra in this regard.
- 1.14 No labour huts shall be allowed inside the campus of above said work. The contractors shall arrange for the stay of labours outside the campus including transport and nothing extra shall be payable on this account.
- 1.15 **TESTING OF MATERIALS**
- a. Samples of various material required for testing shall be provide free of cost by the contractor. **All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The NIT shall have list of approved laboratories for testing as approved by ADG/SDG.**
- b. The contractor shall produce all the materials in advance so that there is sufficient time for testing and approval of the materials and clearance before use in work. The Engineer in charge shall be at liberty to test representative sample(s) of each item of schedule of quantity in any approved laboratory as decided by him. In case of any sample of particular lot fails in testing the contractor shall be bound to replace the entire lot with fresh material of prescribed specifications. The rejected lot shall be returned to the contractor only after fresh lot is supplied.

- c. With a view to avoid controversy about quality of cement concrete as revealed in the test results of 7 days cubes falling short of the prescribed standards by over 10% to 20% and pending testing of balance 3 cubes for 28 days as final confirmatory acceptance tests, crushed samples of cement concrete from the failed 7 days cubes should be preserved in a sealed bag.
 - d. In case of concrete and reinforced concrete work, the contractor shall be required to make arrangement for carrying out crushing strength tests at his own cost. He shall render all assistance for the preparation of cubes, safe custody of the same, proper curing and carriage upto the laboratory where the test is to be performed. The cube test can be performed at any laboratory approved by the Engineer-in-charge.
- 1.16 Malba received from site shall be removed to designated site (fixed by Engineer in charge) on same day, otherwise it will be removed and a penalty of Rs. 1,000/- shall be imposed on the contractor for each day of default.
 - 1.17 Before dismantling the structure / item the contractor shall bring the entire material required for particular job at site after getting the sample approved from the Engineer in charge.
 - 1.18 For mixing of mortar, M.S. sheet must be used over the brick platform. Mortar should not be mixed on road or floor or on garden. In case mortar / concrete is mixed on floor or on road etc., a recovery of Rs.1000/- shall be made for each default. Malba should not be dumped over green grass / plants.
 - 1.19 Splashes on the floors, walls, glasses & other places must be removed after completion of work. Glass panes must be cleaned after completion of works. In the event of failure to clean splashes the work of cleaning will be got done at the risk and cost of the agency.
 - 1.20 Before starting the work the contractor shall chalk out a programme in consultation with the Junior Engineer/Assistant Engineer in charge so as to inform the occupants in advance. The contractor shall have to adhere this programme, failing which he shall be held responsible for any inconvenience caused to the occupants. In order to ensure that the work is carried out according to the programme drawn up, the contractor shall ensure adequate supply of the material and employ required labour strength for execution of work. In case contractor fails to arrange / employ adequate labour and stick to the programme, the Engineer in charge may supplement the labour at the risk and cost of the contractor after issue of one day's notice to the contractor through site order book. No claim for idle labour shall be entertained. The contractor shall put his representative daily on site of work. His name & signature shall be attested by the contractor on the record for the department.
 - 1.21 The contractor shall prepare one sample quarter of all items which should be got approved from the Engineer in charge. Only after acceptance of sample work, contractor will be allowed to commence the work and sample is to be preserved by contractor till the whole work is completed. The quality of work should confirm to the approved samples.
 - 1.22 The contractor should note that the items of work in any room shall be undertaken at one time, one after the other and completed at one stretch in reasonable time allotted for the same by Engineer in charge and got noted by the Junior Engineer in charge. Any item left over in any building will be got done at his risk and cost without any further notice (other than one entry in the site order book) to the contractor after one day from the date of entry in the site order book.

- 1.23 Any damage done to the existing structure shall be made good by the contractor at his own risk and cost.
- 1.24 The contractor shall be responsible for behaviour and conduct of his worker. No worker with doubtful integrity or having a bad record shall be engaged by the contractor.
- 1.25 Anti termite chemical treatment – The work / job of anti termite treatment shall be got done through the specialized firms.
- 1.26 Other agencies may also be simultaneously executing some other work entrusted to them by the Engineer-in-charge and the contractor shall offer necessary co-operation wherever required to these agencies so as not to interfere with or hinder the progress or completion of the work being performed by other contractor (s). He shall as far as possible arrange his work and shall place and dispose off the materials being used or removed, so as not to interfere with the operations of other contractors, or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-charge. The contractor shall leave such necessary holes, openings etc. for laying/burying in the work, pipes cables, conduits, clamps, boxes and hooks for fan clamps etc. as may be required for the other agencies. Nothing extra over the Agreement rates shall be paid for doing these.
- 1.27 Water shall be arranged by the contractor at his own cost and shall be tested as per frequency mentioned in the CPWD specifications. The Agency will have to make arrangement for storage of water at site under renovation/upgradation, by keeping suitable size PVC tanks at appropriate place. The contractor must submit a written proposal along with the water source details and sample of water for testing prior to commencement of work. Upon receiving approval from Engineer-in-Charge, the agency must provide GST paid vouchers with each Running Account (R/A) & Final Bill as proof of water procurement. In case of failure of Agency to produce the same, a non-refundable deduction of 1% water charge will be applied to the gross work done. The Agency will be responsible for the storage & transportation of water at the site, and no extra payment will be made for these arrangements. The Engineer-in-Charge's decision regarding the approval of water source and procurement of water at site will be conclusive and binding on the contractor.
- 1.28 Samples of all materials and fittings to be used in the work in respect of brand manufacturer and quality shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work. Articles bearing BIS certifications mark shall only be used unless no manufacturer has got BIS mark for the particular material. Any material/fitting whose sample has not been approved in advance and any other unapproved material brought by the contractor shall be immediately removed as soon as directed. Unless otherwise specified in the schedule of quantities the rates for all items shall be considered as inclusive of pumping/baling out water, if necessary, for which no extra payment shall be made. Those conditions shall be considered to include water from any source such as inflow of flood, surface and sub-soil water etc. and shall apply to the execution in any season.
- 1.29 Letter for submitting sample(s) for testing of material shall be sent through e-mail to the Lab by authorized representative of Engineer-in-Charge or Engineer-in Charge of the work along with name(s) of test(s) to be done on the material'. The contractor shall collect the sample(s) from the site and submit it to the lab; make necessary Payment for the testing charges. He will inform on the same day through email to authorized representative of Engineer-in-Charge and Engineer-in-charge regarding submission of sample (s) and payment made to the lab. if he either fails to collect or submit the

- sample(s) to the lab within 03 days or in time as prescribed in the specifications, whichever is earlier, the Engineer-in-Charge shall collect and submit the sample(s) and make necessary payment for testing charges to the lab, In such case, Engineer-in-Charge shall make recovery on account of collection and submission of sample(s) to the lab and paid testing charges etc. from the next R/A bill / Final bill of the contractor. This action of Engineer-in-Charge shall be final and binding.
- 1.30 There shall be no deviation beyond contract amount without written communication from Engineer-in-Charge to the contractor.
- 1.31 The malba/building rubbish collected from dismantling and demolishing from any floor and for all lead and lift will be collected at designated malba Bin on daily basis. Nothing extra will be paid. If failed to do so, Rs. 1000/day recovery will be made from the bill. Collected Malba/Debris should be cleared timely from Designated malba bin as per scheduled item as per direction of the Engineer-in-charge. The Contractor is advised to quote his rates accordingly. Noting extra will be paid on this account.
- 1.32 All waste or superfluous materials shall be carried away by the contractor without any reservation entirely to the satisfaction of the Engineer-in- Charge.
- 1.33 In case of occurrence of Non Schedule Extra Item(s) , The contractor, shall within fifteen days of the receipt of order to execute extra item(s) or occurrence of the item(s), submit analysis of rate of extra item(s) based on the rate(s) of material(s) available in basic rate of Standard Schedule of Rate mentioned in schedule F and rate(s) of the material(s) based on tax paid bills which are not available in standard Schedule of Rate mentioned in schedule F. For this purpose, the basic rate of material(s) available in Schedule of Rate(s) mentioned in Schedule F will be enhanced or reduced by the applicable cost index, as the case may be. The rate(s) of the material(s) which are not available in Standard Schedule of Rates, mentioned in Schedule F, shall be based on, tax paid bill(s) for the material(s) as defined in manufacturer's specification. Material rate(s) from Standard Schedules of Rate(s) shall be given priority in the analysis of rate(s).
- 1.34 However provisional rate(s) on the basis of invoice will be allowed by the Engineer-in-Charge. Invoice shall be accepted only for material(s) not available in the Standard Schedule of Rates mentioned in Schedule F. The contractor while submitting the tax paid bill of purchased material(s) shall ensure that rate(s) of the materials are reasonable and lowest available in the market. If Engineer-in-Charge feels rates in tax paid bill(s) submitted by contractor are not reasonable then he can modify the rate(s) after giving a notice to the contractor. Engineer-in-Charge is the final authority to decide applicable rate(s) of material(s).

SPECIAL CONDITIONS

1. The contractor (s) shall make his own arrangements for electricity required for the execution of work.
2. Cement & Steel Reinforcement shall be arranged by the contractor himself.
3. All the malba or rubbish obtained from dismantling or otherwise during the execution of the work shall be brought down through the stair case. Lifts shall not be used for this purpose and shall not be thrown to the ground directly from first floor or second floor etc. Malba/ rubbish generated due to any operation from the building and there upon whatsoever shall be disposed off on daily basis by the contractor to the specified common disposal point. After the collection of full truck load of the said malba/rubbish (approx 4.5 cubic metres), the same shall be disposed off on same day by the contractor to the to “C & D waste management site nearest Municipal approved **(Payment of removal of malba/building rubbish etc. shall be made only on the basis of Local Civic Body receipt submitted by the agency & production of receipt of payment made to local body at dumping ground)**. Failing which the same shall be got removed by the Engineer-in-charge and the cost so incurred on the removal of the same shall be recovered from the contractor’s bill.
4. No residential accommodation shall be provided to any of the staff engaged by the contractor. The contractor shall also not be allowed to erect any temporary structure for staff/ store in the campus.
5. Contractor shall be fully responsible for any damages caused to govt. property by his or his labour in carrying out the work and shall be rectified by the contractor at his own cost.
6. All the materials, fixtures, fixtures, fittings etc. shall be of the best quality and shall be of approved make and manufacture (wherever specified) as defined in the item of work or defined anywhere in this document otherwise shall be of ISI mark as mentioned in the CPWD specifications duly approved by the Engineer-In-Charge.
7. All materials brought by the Contractor for use in work shall be got approved from the Engineer-in-charge of Civil work or his authorized representative of the work.
8. The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and clearance of the same before use in the work.
9. All the materials shall be got checked by the Engineer-in-charge or by his representative of the work on receipt of the same at site before use.
10. The contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight /dimensions as may be necessary for execution of work. The sealed samples are to be handed over to the testing lab by contractor in the presence of Junior Engineer-in-charge of work.
11. Samples for particular items of work shall be prepared, where so specifically desired by Engineer-in- charge, for prior approval of the Engineer-in-charge, before taking up the same on mass scale and nothing shall be payable on this account.

12. Sample of building materials, fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge before use in the work. The quality of samples brought by the contractor shall be judged by standards laid down in the CPWD Specifications or the relevant BIS code. All materials and articles brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. The list of approved makes of material is given for guidance.
13. BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the contractor shall, if required, by the Engineer-in-Charge, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material / procured by the contractor for incorporation in the work satisfies the provisions of specifications/ BIS codes relevant to the material and / or the work done.
14. Factory made shutter, as specified shall be obtained from factories to be approved by the Engineer-in-charge & shall conform to relevant Indian Standards. The contractor shall inform well in advance to the Engineer-in-charge, the names and address of the factory from which the contractor intends to get the shutters manufactured. The contractor will place order for manufacture of shutters only after written approval of the Engineer-in-charge in this regard is given. The contractor is bound to abide by the decision of the Engineer-in-charge & recommend a name of another factory from the approved list in case the factory already proposed by the contractor is not found competent to manufacture quality shutters. Shutters will, however, be accepted only if this meet the specified tests. The contractor will also arrange stage wise inspection of the shutters at factory to the Engineer-in-charge or his authorized representative. Contractor will have no claim if the shutters brought at site are rejected by Engineer-in-charge in part or in full lot due to bad workmanship and quality. Such shutters will not be measured & paid and the contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by Engineer-in-charge or his authorized representative.
15. **Condition for cement:-**
 - 18.1 Cement required for the work shall be procured by the contractor.
 - 18.2 The contractor shall procure 43 grade OPC conforming to IS: 8112-1989 or PPC conforming to IS: 1489 as required in the work from reputed manufacturers of cement having a production capacity of One million tones per annum as per approved make list. Supply of cement shall be taken in 50-kg bags bearing manufacturer's name, or his registered trade marks if any and grade and type of cement as well as ISI marking. The packing of the cement bags shall be as per CPWD specifications 2019.
 - 18.3 Every delivery of cement shall be accompanied by producer's certificate confirming that the supplied cement confirms to relevant specifications. These certificates shall be endorsed to the engineer in charge for his record.
 - 18.4 The cement shall be brought at site in supply of approximately 5 tonnes or more as decided by the Engineer-in-charge.

- 18.5 Cement store shall be provided with a single door with two locks. The keys of one lock shall remain with CPWD Engineer-in-charge or his authorized person and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both the parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed Proforma and signed daily by the contractor or his authorized agent in token of its correctness.
- 18.6 The contractor shall be responsible for the watch and ward and safety of the cement go down. The contractor shall facilitate the inspection of the cement go down by the Engineer-in-Charge at any time.
- 18.7 Samples of cement arranged by the contractor shall be taken by the Engineer-in charge and got tested in accordance with provisions of relevant BIS codes as and when testing required by Engineer-in- Charge. In case test results indicate that the cement arranged by the contractor does not confirm to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-charge to do so.
- 18.8 The contractor shall supply free of charge cement required testing. The cost of tests shall be borne by the contractor and test result should confirm to BIS code.**
- 18.9 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract
- 18.10 The theoretical, consumption of cement shall be worked out as per procedure prescribed in clause **38** of the contract and shall be governed by conditions laid therein. No payment for excess consumption of cement will be allowed.
- 18.11 Cement / steel brought to site and remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.
- 19 The contractor shall get the source of various raw materials namely aggregate, cement, sand, water etc. to be used on the work, approved from the Engineer-in-Charge and trial mixes for controlled concrete shall be done using the approved materials. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost.
- 20 Sand to be used for cement concrete work, mortar for masonry and plaster work shall be of standard quality and shall be obtained from the source approved by the Engineer-in-charge and screened, if required. The same shall consist of hard siliceous material. It shall be clean sand.**
- 21 Royalty at the prevalent rates shall have to be paid by the contractor on all the building metals, shingle, sand and bajari etc. collected by him for the execution of the work, directly to the Revenue authority or authorized agent of the state Govt. concerned or Central Govt.
- 22 All sub-standard material rejected shall be removed from the site immediately and department will not be responsible for the safe custody of the same. In case of failure the same will removed from the site of work at the cost of the contractor. **Nothing extra shall be payable for using extra mortar for achieving smooth and even surface for plaster**

- work and extra cement shall not be considered for cement consumption on this account.**
- 23 **Nothing extra shall be payable for using combination of marble, granite, kota, sand stone slabs & ceramic tiles etc. in the required pattern at various locations.**
- 24 **Nothing extra will be paid for the additional thickness of bed mortar that will be required to achieve uniform finished surfaces on account of difference in specified thickness of marble, granite, Kota stone, sand stone & ceramic tiles etc.**
- 25 Any cement slurry, required to be added over base surface for bond or for continuation of concreting, its cost shall be deemed to have been included in the respective items, unless specified otherwise and nothing extra shall be payable nor extra cement shall be considered in the cement consumption on this account.
- 26 Flooring in toilets, verandah, kitchen, courtyard etc. shall be laid to the required slope/gradient as per the directions of the Engineer-in-Charge.
- 27 The pattern, spacing and locations of joints shall be as per drawings and direction of the Engineer-in-Charge.
- 28 **The water proofing items shall be got done through the firms approved by the Engineer –In- Charge.**
- 29 The SCI/CI pipes and G.I. pipes, wherever necessary, shall be fixed to RCC columns, beams etc. with rawl plugs, or appropriate fasteners as approved by Engineer-in-Charge, and nothing shall be payable on this account.
- 30 No claim for idle establishment & labour, machinery & equipments, tools & plants and the like, for any reason whatsoever, shall be admissible during the execution of work as well as after its completion.
- 31 The contractor shall have to carry out the work according to approved programme duly approved by the competent authority. The contractor shall not carry out any work in any building without permission of the Engineer-in-Charge. The contractor shall have to adhere this programme failing which he shall be wholly responsible for any inconveniences caused to the occupants. No claim for idle labour on any account shall be entertained. The contractor shall depute his representative daily to the site of work. His name and signature shall be attested by the contractor for record in the department.
- 32 The contractor shall prepare one sample of item which shall be got approved from the Engineer-in-charge. Only on acceptance of sample, contractor will be allowed to commence the work and sample is to be preserved by the contractor till the whole work is completed. The quality of entire work should confirm to the approved sample.
- 33 Any damage to the building structure, fittings or any other articles etc. done by the contractor or his workman during the execution of the work shall be made good by the contractor at his own cost and nothing extra will be paid on this account. However, if contractor fails to attend the same, the same will be made good by the Engineer-in-Charge at the risk & cost of the contractor.

- 34 Any damage to work resulting from weathering conditions, defacing or from any other cause such as negligent act on the part of contractor, until the work is taken over by the Department after completion of work, shall be made good by the contractor at his own cost.
- 35 The paints/ other materials shall be issued by the Junior Engineer/ Assistant Engineer to the contractors after breaking the seal of the containers/ packing and quantity to be issued shall be as per the daily requirement at the site. After days use balance quantity of paints etc., if any left will be returned by the contractor to the Deptt. After use, the empty container shall have to be returned to the Department, and these shall be the property of Department. The empty container shall be preserved by JE of site-In-charge and will not be disposed of till the completion of the work.
- 36 Nothing extra shall be paid to the contractor for excess consumption of material.
- 37 **The contractor and/ or his authorized agent should see the site order book every day and get the compliance noted by the Junior Engineer/ Assistant Engineer/ Engineer-in-Charge.**
- 38 The theoretical consumption of materials like satna lime, distemper, paint, water proof cement paint etc. shall be computed, as per the consumption of co-efficient of DAR 2023. In case of variation between the actual and the theoretical calculations action shall be taken as below:
- (a) For the materials to be arranged by the contractor:- In case the materials used other than mentioned Schedule F under clause 12 is less than theoretical requirements the cost for the material used less shall be recovered from the contractor at the basic rate as given in D.S.R. 2023 plus carriage plus 1% W.C. plus 15% contractor profit and over heads plus contractors enhancement/abatment as per clause 12 of the agreement. For all excess use of materials over the theoretical consumption no extra payment shall be made to the contractor:
- 39 The contractor shall give a performance test of the entire installation(s), as per standing specifications, before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the test.
- 40 The work pertaining to the items of internal finishing should be started in consultation and with prior approval of Engineer-in-Charge as soon as the structure/other items of work are completed.
- 41 Before taking up demolition work, contractor has to arrange materials in advance and thereafter permission for dismantling/demolition work will be given.
- 42 **All materials required for work i.e Floor tiles, Wall tiles, cement, sanitary items etc shall be brought at site in full quantity by the agency and the bills/vouchers will be submitted by the Agency at the same time.**
- 43 **The contractor shall make all the wooden & steel door/windows functional in all areas wherever work is carried out, by checking & repairing of all existing doors, windows, ventilation cupboard etc. including fitting required for its smooth functioning. (only fittings like handle, tower bolt, sliding door bolt, hinges, glass panes, beading, if required/replaced shall be paid separately as per BOQ provision).**

- 44 **The contractor is required to submit all the purchase voucher/invoice, indicating the amount of GST paid, duly signed by him of all the materials like Cement, Steel, Paint, Putty, Distemper, C.I/G.I pipes, Granite, Flush door, Boards/Ply, Structural Steel, Tiles, Sanitary Installations, CPVC/PVC pipes etc. during the submission of R.A./Final bill or as directed by the Engineer-in-charge.**
45. **NGT guidelines during execution of work should be followed. Nothing extra shall be payable for this.**

List of Specialised Items (Civil) & Criteria for approval of Specialised Agencies

1. Structural repairs and rehabilitation/retrofitting work.
2. Items as decided by Engineer-in-charge
Procedure for Execution of the Specialised Items:

Such items should be got executed only through associated agencies specialised in these fields. The contractor shall indicate the name(s) of his associated specialised agencies those fulfilling the below mentioned eligibility conditions as early as possible and within 15 days of award of work to Engineer-in-Charge for approval of competent authority.

Specialised Agencies for relevant works shall be approved by the competent authority. The contractor shall quote the rates after careful study of contract conditions, specifications, drawings & schedule of quantities.

It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialised Agencies without any time & cost overrun to the Department. The main contractor shall be solely responsible for settling any dispute/ litigation arising out of his agreement with the Specialised Agencies. The contractor shall ensure that the work shall not suffer on account of litigation / dispute between him and the specialised agencies. No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialised Agencies.

The Criteria for approval of specialised agencies will be as under in respect of the relevant specialisation.

The specialised firms should satisfies the following eligibility criteria:

Experience of having successfully completed similar works during the last seven years ending last day of month previous to the one in which tenders are invited.

- a) Three similar completed works each costing not less than 40% of the estimated cost put to tender of the relevant specialised item / items, or
- b) Two similar completed works each costing not less than 60% of the estimated cost put to tender of the relevant specialised item/ items, or
- c) One similar completed work costing not less than 80% of the estimated cost put to tender of the relevant specialised item / items.

CONDITIONS FOR CEMENT & STEEL

- 1 The contractor shall procure Ordinary Portland cement 43 grade conforming to IS: 8112 or PPC conforming to IS: 1489 to required in the work as specified in the approved make list. Supply of cement shall be taken in 50 kg bags bearing manufacturer's name and ISI marking except for concrete from RMC producer where bulk cement can be procured. Samples of cement arranged by the contractor shall be taken by the Engineer in Charge and got tested in accordance with provisions of relevant BIS Codes. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer in Charge to do so. Only the cement with satisfactory test results shall be allowed to be used in the work.
- 2 The cement shall be brought at site in bulk supply of **5 tonnes** or as decided by the Engineer in Charge.
- 3 **The contractor shall make his own arrangement for storage of cement and will store the cement as per CPWD Specifications.** Double lock provision shall be made to the door of the cement go-down. The key of one lock shall remain with the Engineer in Charge or his authorized representative and the key of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement go-down.
- 4 The contractor shall supply free of charge the cement required for testing and shall also bear the packing, sealing, transportation & other incidental charges. The testing charges of approved laboratory shall be borne by the contractor.
- 5 The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test result have been received.
- 6 The day to day actual issue/receipt and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per the procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein.
- 7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer in Charge.
- 8 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract.
- 9 OPC 43 Grade cement should be used for integral water proofing work and separate entry in MAS / Cement Register should be maintained on different pages to regulate the actual issue and consumption of cement for work as provided in clause 10 of the contract.

STEEL REINFORCEMENT:

1. The agency shall procure and use Fe 550D CRS grade reinforcement steel bars confirming to relevant IS codes as presently applicable and any further amendments issued during & upto the period of execution/completion in compliance with relevant provisions contained in CPWD OM No. CSQ/SE(TAS)/Steel/2024/262-H dated 14.08.2024 (Appendix -VIII) – “ Guidelines for use of TMT steel / Low Alloy Steel reinforcement Bars in CPWD works and enlistment of the steel manufacturers in respect of TMT steal / Low Alloy / Corrosion resistant Steel Reinforcement bars in CPWD”. The producers of such Steel reinforcement bars shall be as per “Preferred makes of the

materials given in this tender document. For lapping of steel reinforcement bars above 12 mm diameter, mechanical couplers of appropriate make and design shall be used.

2. For reinforced cement concrete or pre-stressed concrete works, the reinforcement bars shall consist of the following grades conforming to IS: 1786 : 2008 (Indian Standard specification for high strength deformed steel bars and wires for concrete reinforcement of grade Fe 550D).
3. The contractor shall obtain manufacture's certificate stating the process of manufacture, chemical composition and test sheet giving result of each mechanical test applicable to the material purchased and submit it to the Engineer in charge. Each test certificate shall indicate the number of the cast to which it applies, corresponding to the number or identification mark to be found on the material.
4. The Engineer in charge or his authorized officer shall get each consignment tested for both chemical composition and physical properties (including bend and re-bend test) as specified in IS:1786 from NABL accredited laboratory or any Government Laboratory.
5. The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.
6. Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time or written orders from the Engineer-in- Charge to do so.
7. The steel reinforcement shall be brought to the site in bulk from manufacturers along with test certificate of each lot supply of 10 MT or more or as decided by the Engineer-in-Charge.
8. The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
9. For checking nominal mass, tensile strength, bend test, re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below:

Size of bar	For consignment below 100 tons	For consignment above 100 tonnes
Under 10 mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16 mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

10. All expenditure to be incurred for testing of samples e.g. supply of material, packaging, sealing, transportation, loading, unloading, etc. including testing charges shall be borne by the contractor.
11. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in the format provided in this document of the contract. The theoretical consumption of steel shall be worked out as procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment need to be made.
12. Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
13. The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be used in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.
14. The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, Steel Bars and T.M.T. bars into Standard Weight.
15. Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight. However, for the stipulated issue of steel reinforcement up to and including 10mm diameter bars, the actual weight of steel issued shall be modified to take into account the variation between the actual and the standard coefficients and the contractors' accounts will be debited by the cost of modified quantity.
16. (a) If the Derived Weight as in sub-para above is less than the Standard Weight as in Sub-para above then the Derived Actual Weight shall be taken for payment provided, if it is within the following tolerances specified in IS1786-2008, otherwise whole lot will be rejected.

Tolerances on Nominal Mass

Nominal Size in mm	Batch	Tolerance Nominal mass Percent	
		on Individual Sample*	Individual sample for coil**
Upto and including 10	± 7 %	-8 %	± 8 %
Over 10 upto and including 16	± 5 %	-6 %	± 6 %
Over 16	± 3 %	-4 %	± 4 %

* For individual sample plus tolerance is not specified.

** For coils batch tolerance is not specified.

- (b) If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the Standard Weight.
17. The contractor shall procure all the steel well in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
18. All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
19. The contractor shall also employ necessary watch and ward establishment for the safe custody of materials at his own cost.
20. Contractor has to produce manufacturers test certificate for each lot of steel procured at site.
21. The following procedure shall be followed in case of removal of rejected/sub- standard materials from the site of work.
- i) Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the site order book under the signature of the JE/AE/AEE giving approximate quantity of such materials.
 - ii) As soon as the material is removed, a certificate to that effect may be recorded by the JE/AE/AEE against the original entry, giving the date of removal a mode of removal i.e. whether by truck, carts or by manual labour. If removal is by truck, the registration number of the truck should be recorded.
 - iii) When it is not possible for the JE/AE/AEE to be present at the site of work at the time of actual removal of the rejected/sub-standard materials from the site the required certificate should be recorded by the Junior Engineer and the AE/AEE should countersign the certificate recorded by the Junior Engineer.

PARTICULAR SPECIFICATIONS FOR REPAIR WORK

1. Adequate care should be taken by the contractor while dismantling, chiseling, demolishing work, drilling etc. that impact/vibrations are minimum for considerations of structural safety and also for inconvenience caused to the users of the building. Perimeter of unsound concrete area shall be marked by making shallow cut on cover concrete with cutter machine to reduce the impact of chiseling. Rates shall cover cost of all inputs of material, labour; T&P etc. involved all the operations in the work.
2. Dismantling and repair work of any type like plaster, flooring, concrete, RCC, Brick work, GI/CI pipes, water proofing etc. shall be for all heights and all levels unless specifically mentioned in the item and no claim for extra cost shall be entertained on this account.
3. Sequence of strengthening work shall be as under:
 - a. Strengthening of beams of first floor and columns from top of grade beams/foundations up to middle of second floor.
 - b. Strengthening of beams of second floor and column from middle of second floor to middle of third floor.
 - c. Strengthening of beams of third floor and columns from middle of third floor to middle of the fourth floor.
 - d. Strengthening of beams of fourth floor and terrace beams and columns from middle of the fourth floor up to terrace level.
 - e. Guniting repaired structural members shall be allowed to attain at least 7 days strength before any load is transferred to that member.
- 1 For removal of all type of loose / delaminated / damaged / weak cement plaster from the surface of masonry or concrete, a cut normal to the surface all along the boundaries, in regular shape shall be made not to exceed plaster thickness. Then plaster shall be removed completely to expose the parent masonry or concrete surface so as not to have any traces of such plaster left. For brick work, the joints have to be properly raked and cleaned as per CPWD specifications. The plaster should be dismantled without causing any damage to brick work.

5 CHIPPING/ DISMANTLING OF UNSOUND/ WEAK CONCRETE & PREPARATION OF SUBSTRATE:

- 5.1 The perimeter of unsound / weak concrete / delaminated layer of guniting shall be sawcut to a minimum depth of 12 mm in square/rectangular shape at normal (orthogonal) to the surface of member. Then concrete shall be removed by chipping with standard power-driven percussion type or pneumatic chisel of standard make from the demarked area including tapering all edges, making square shoulders of cavities etc. complete (after properly supporting the member with false works). The chipping shall be done in regular shape, with sides parallel or normal to the direction of the reinforcement and minimum 50mm beyond the perimeter of the spall for single spall, the repair area should have a minimum width of 100 mm in direction. If a number of spalls are closely located to each other, these should be included in a single area marked for repair.

5.1.1 **Exposing of rusted/corroded reinforcement:**

Reinforcing bar must be further exposed if the remaining concrete is debonded from the reinforcing bar. Chipping around the reinforcing bar shall be continued to completely expose it, if more than half of reinforcing bar perimeter has been exposed. Concrete shall be removed from all around reinforcement including from behind the reinforcing bars to give an average 25 mm (but not less than 15 mm clear air gap) by using standard power-driven percussion type or pneumatic chisel of standard make.

- 5.2 Adequate care is to be taken not to cut the reinforcement steel and a cover meter could be used to estimate the depth of cover, for which nothing extra shall be paid.
- 5.3 Chipping should be done up to the required depth as decided by the' Engineer-in-Charge to reach sound concrete substrate to a near uniform depth for the repair areas.
- 5.4 Dimensions of area chipped off for RCC slabs, beams, columns etc. shall be measured in centimeters after the chipping / dismantling operation is completed. The area of the chipped / exposed RCC surface shall be measured in sq. m. correct to second place of decimal.
- 5.5 For the RCC members to be completely dismantled, pre-measurement of the dimensions of RCC member to be dismantled shall be recorded before taking up the dismantling operation and volume of concrete dismantled shall be worked out in cubic meters correct to second place of decimal.
- 5.6 Removal of concrete should begin at the interior of the repair areas and progress towards the boundaries. All edges and cavities shall be square shouldered.

6 **CUTTING OF EXISTING REINFORCEMENT**

- 6.1 The existing reinforcement bars to be cut shall be identified and approved for cutting by the Engineer-in-Charge.
- 6.2 The reinforcement shall be carefully cut with electrical cutter machine to minimize excessive vibrations or damaging the structure and the recovered reinforcement should be straightened, cleaned of concrete by wire brush scrapped and stacked properly with in a lead of 50 meters as directed by the Engineer-in-Charge.

7 **CLEANING OF EXISTING REINFORCEMENT**

- 7.1 Before re-casting/ jacketing of members or repairs to members with polymer modified mortar, the reinforcement has to be cleaned properly, as specified.
- 7.2 At first rust shall be removed from the surface of the reinforcement manually using chisels, wire brush, emery paper etc. as directed by Engineer-in-Charge at no extra cost, till the steel surface is cleaned off loose rust.

7.3 Then sulphate and chloride free chemical rust remover, as approved by the Engineer-in-Charge shall be applied with paint brush over the reinforcement surface thoroughly along the full length of rusted reinforcement. After 24 hours of its application the surface shall be cleaned with wire brush to remove all loose particles.

7.4 Rates shall include cost of all materials, labour, T&P etc. involved in all the operations.

8 **ADDITIONAL REINFORCEMENT BARS:-**

For introducing additional reinforcement bars for new structural connections or supplementing additional steel area to the existing RCC member, the cross-sectional area (diameter and no. of bars) and length required shall be approved by the Engineer-in-Charge. Also, the depth of embedment of reinforcement bar shall be approved by the Engineer-in-Charge. The holes of specified diameter and depth have to be bored with diamond or hammer drill machine in RCC. Diameter of the hole shall be 4mm larger than dia of dowel bar. The bored hole in dry state, shall be cleaned with round brush and by blowing air through a tube inserted in the hole and connected to hand operated blower. Depth of holes shall be checked by the field staff by inserting rod marked with standard length.

Then, epoxy shall be injected from foil pack with help of epoxy dispenser and epoxy cartridge holder and disposable PVC mixing nozzle inserted inside the drilled hole to fill it from bottom/end of hole and slowly withdrawing the pipe while injecting epoxy till mouth of hole to ensure no air void is left inside the hole. Then dowel bar shall be inserted by pressing and turning till end of the hole is reached and shall be allowed to remain undisturbed for minimum 24 hours for epoxy to be air cured.

Rates shall include cost of all inputs of material, labour and T&P etc. involved in all the operational except the cost of reinforcement.

8.1 **WELDING ADDITIONAL REINFORCEMENT:**

In case cross sectional area of an individual bar of RCC slab has been reduced by 20% or more, then additional reinforcement shall be welded with existing bar to ensure continuity of the reinforcement of equal strength of original bar as illustrated in the sketch. If any existing reinforcement bar is found displaced/loosened, same shall be secured at its design location.

9 **SHEAR KEYS :-**

Shear keys shall also be provided in similar manner as illustrated in para 8.0 above. The shear key bars cut and bent to the required shape shall be embedded in parent concrete to a minimum depth of 50 mm or longer as specified in the item. Rates shall include cost of all materials, labour and T & P etc. involved in all the operations.

- 10 **CLEANING OF EXPOSED RCC/ CONCRETE SURFACE, INSERTING NIPPLES AND INJECTION GROUTING: -**
- 10.1 The final chipped off concrete surface and exposed reinforcement, if any of the affected structural member should be cleaned off all loose and foreign materials by free air blast and then with water and allow it to dry.
- 10.2 For the honey combed portion of the concrete or cracked concrete, drill holes at least 18 mm in diameter and depth up to 60 mm or behalf the member thickness whichever is less, at the required spacing, as directed by the Engineer-in-Charge.
- 10.3 For cracked surface open up cracks by making V notch or groove of size 12 mm x 12 mm as directed by the Engineer-in-Charge.
- 10.4 Remove coarse debris and dust in opened up cracks and drilled holes by blowing air with hand operated blow out pump. Concrete surface required to be grouted shall be free from all loose and unsound material. The prepared surface should be clear of dust which could obstruct free flow of grout material and also impede its bonding with concrete surface. Saturate the concrete in vicinity of crack / honey combed concrete surface with water (but without excess water) only if the cementations / polymer admixed grout to be injected.
- 10.5 Insert 12 mm diameter specified injection nipples in holes drilled along cracked lines or in honey combed area of concrete and fix them by sealing on its sides with or polymer modified mortar, as directed by the Engineer-in-Charge.
- 10.6 Seal the crack or the honey combed surface between the nipples by means of epoxy mortar or polymer modified mortar, as approved by the Engineer-in-Charge. The polymer used shall be of approved grade and polymer modified mortar shall be applied as per specifications mentioned separately for polymer modified mortar. The polymer modified mortar shall be moist cured for 3 days and allowed to gain strength before actual grouting commences.
- 10.7 To inject grout in nipples, the cementitious grout shall be prepared from cement (OPC-43 grade), sand (sharp, washed well graded generally conforming to zone IV of IS: 383) and water conforming to IS: 456 mixed in specified proportions as directed by the Engineer-in-Charge.
- 10.8 The emulsified acrylic polymer shall be as specified and shall conform to manufacturer's specification. The physical and mechanical properties of polymers shall conform to manufacturer's specification. One test shall be carried out mandatorily for every lot of acrylic polymer supplied at site, before use in the work.

- 10.9 The grouting equipment shall be capable of supplying mixing, stirring and pumping grout to the satisfaction of Engineer-in-Charge. It shall have capacity to inject grout at a pressure up to 7 kg / sq. cm measured at grout connections. It shall be capable cement ratio ranging from 0.5 to 1.0.
- 10.10 Wherever epoxy is to be used the surface of the concrete shall be dried with air blast, before grouting or applying epoxy.
- 10.11 The cementious grout in proportion as directed by the Engineer-in-Charge shall be prepared. It should be lump free of creamy consistency, thoroughly blended and shall be continuously stirred to keep the cement particles in suspension to retain uniform consistency in grout is injected.
- 10.12 In case of vertical cracks the injection shall be started at the lowest nipple and continued until the injected grout begins to flow out at the next higher nipple. The first nipple shall then be closed and injection continued from second until grout flows out at the third and so on. The process shall be repeated until the whole surface is treated. As soon as the system is cured, the nipples shall be suitably cut.
- 10.13 In case of honey combed concrete, each grout hole shall be grouted individually. The sequence of injection shall be as per the directions of the Engineer –in-Charge.
- 10.14 The measurement of grout material shall be on the basis of only the weight of cement consumed in kg.
- 10.15 Pre measurements of the quantities of such grouting materials brought at site and balance quantities remaining at the end of grouting application shall be recorded separately which will determine the quantity of grout material actually injected. Adequate care is to be taken by the contractor as not to waste the grout. The quantity which can be consumed immediately within the prescribed time only shall be prepared in batches.
- 10.16 The quantity of grout material wasted, discarded, hardened shall not qualify for payment and shall be recorded for deduction at the end of each operation.

11. **BOND COAT**

- 11.1 Bond coat is required to be applied for adhesion of applied repair concrete or mortar to the parent concrete. For this, the surface should be thoroughly cleaned by brushes and by blowing air from hand operated pump. The surface shall then be saturated with water minimum 1 hour before application of bond coat and allow surface to attain saturated surface dry condition (SSD).

11.2 PREPARATION OF BOND COAT:

The components of bond coat shall be weigh batched and mixed in specific proportions as indicated in the item. Area of chipped concrete surface shall be assessed roughly. Accordingly required quantity of acrylic polymer for bond coat shall be taken in a plastic bucket/mini drum then proportional quantity of OPC cement by weight (as per

manufacturer's specifications) shall be blended slowly under continuous stirring with low speed (500 – 800 rpm) electric stirrer for minimum 2 minutes till a homogenous and lump free slurry is formed. In no case bond coat slurry shall be prepared without electric stirrer at site.

- 11.3 The specified bond coat shall be applied by stiff nylon bristle brush. The bond coat shall be worked well onto the concrete surface of the parent concrete including reinforcement surface ensuring that no pinholes are left. The polymer modified bonding cement slurry shall be applied to a thickness not more than 2mm. Bond coat shall be allowed to reach tacky condition before applying polymer modified mortar or pouring concrete jacket. (Area of exposed RCC unit shall be measured in sqm correct to two decimal places for the purpose of payment).
- 11.4 Prefabricated shuttering shall then be erected immediately. Fresh concrete / mortar shall be placed / applied while the bond coat is still tacky and well within pot-life / setting period. If adhesive cures to the extent of loosing its tack or has set before concrete / mortar is placed / applied, the same shall be removed or slightly abraded and another coat of adhesive / bond coat shall have to be applied by the contractor at his own cost.
- 11.5 Freshly placed concrete shall be thoroughly consolidated to ensure full bonding of the fresh concrete with the parent concrete. If there is a failure of bond of fresh concrete/ plaster with parent concrete surface and it sounds hollow on tapping, the repair work shall be dismantled and redone by the contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. CPWD specifications for manufacture and placing and curing of concrete shall, in general, be followed unless specified otherwise.

12 **ADDITIONAL REINFORCEMENT FOR GUNITING/ JACKETING WORK:**

- 12.1 The existing reinforcement bars in the R.C.C. member to be gunited shall be cleaned properly to remove all scales and rust by wire brushing and by rubbing with sand paper, sandblasting wherever possible etc. complete as directed by the Engineer-in-Charge.
- 12.2 The additional reinforcement shall be provided to hold gunited material/concrete in position and shall be so fixed that it is creased in succeeding layer.
- 12.3 The additional reinforcement, if required, as per the directions of the Engineer-in-Charge, shall be placed in position including cutting, straightening, binding and fixing. in position by fixing into the existing concrete by fastening to shear keys and should be secured rigidly so that it does not belly out or get displaced during guniting jacketing work. The mesh reinforcement shall be fixed in a manner so that it is firmly held at least 12mm away from the parent concrete as well as final finished surface. Also clear spacing between the reinforcement bars shall not be less than 50mm.

- 12.4 Additional reinforcement if required shall be tied with required lap using G. I. binding wire or welded to the parent reinforcement and also to the shear keys is directed by the Engineer-in-Charge.
- 12.5 Additional vertical reinforcement shall be anchored to the base of the column by boring hole of diameter 4 mm larger than the dia of reinforcement bar for a depth of 12 times the dia of the bar and secured it in the hole with epoxy as per standard procedure described in para no – 8

13 ANTI CORROSIVE TREATMENT:

After cleaning off rust from reinforcement bar, coat of passivating slurry shall be applied on surface of reinforcement bar. Length of reinforcement bar to be treated with passivating coat shall be assessed roughly in advance. Accordingly required quantity of anticorrosive polymer shall be taken in a plastic bucket/mini drum and specified proportion of OPC cement by weight (as per manufacturer's specifications) shall be blended slowly under continuous stirring with electric stirrer for minimum 2 minutes till a homogenous and lump free slurry of creamy thick consistency is formed. One /Two coats of passivating slurry (as per manufacturer specifications) shall be applied on reinforcing bar by stiff nylon bristle brush ensuring no pinholes are left. In case application of two coats, the second coat shall be applied minimum six hours after application of 1st coat, The passivating coat shall be allowed to set for minimum 24 hours before operating next item. In no case passivating slurry shall be prepared without electric stirrer.

14 POLYMER MODIFIED MORTAR: -

14.1 Preparation of polymer modified mortar at site (PMM):

Polymer modified mortar shall be prepared with OPC cement and graded quartz sand admix with acrylic polymer. The graded coarse sand shall be obtained from mixing of 3 different grade of quartz sand at site in following proportion by weight/volume.

Quartz sand of grade 8 x 16 (coarse) = Z1

Quartz sand of grade 16 x 30 (medium) = Z2

Quartz sand of grade 30 x 80 (fine) = Z3

Desired proportion of Z1:Z2: Z3 = 8:3:4

Sufficient quantity of graded quartz sand shall be prepared before mixing of mortar. The same ratio shall be maintained throughout the execution of structural repair work. Area of chipped concrete surface shall be assessed roughly. Accordingly required quantity of acrylic polymer mortar shall be prepared for repair of RCC which can be applied within half an hour. Quantity of all components shall be found out as per theoretical consumption given in the item as per different manufacturers' specification. Calculated quantity of graded coarse sand and specified proportion of OPC cement shall be mixed in dry stage uniformly on GI mortar mixing tray. Quantity of polymer shall be taken in specified proportion of cement as per manufacturer's specifications in plastic bucket/mini drum. 85%

of required quantity of water shall be taken in a bucket/mini drum (not more than 30% capacity of the bucket), then dry PMM shall be blended slowly under continuous stirring with low speed (500 – 800 rpm) electric stirrer for minimum 2 minutes and mortar shall be allowed to remain undisturbed for three minutes to dissolve polymer in the mortar. Balance quantity of water shall be added in the similar manner to form homogenous cohesive mortar of dough like consistency. Right consistency of mortar can be checked by making medium size ball of green mortar with hand. The ball should retain its shape when held on palm and at the same time it deforms easily without being cracked when it is pressed with palm.

14.2 Application of polymer modified repair mortar

The quantity of mortar shall be prepared at site it can be used up within 30 minutes after mixing dry mortar with water. Small balls of green mortar shall be pressed with palm applying small force against the concrete substrate primed with bond coat (wet on wet) for a thickness not more than 12mm. Next layer of mortar shall be applied over the first layer minimum after 6 hours to build up thicker section. The surface of repaired area shall be roughly finished with trowel upto the level of original RCC surface of the structural member. In no circumstances PMM shall be applied by trowel by increasing water in the mix.

- 14.3 Pre measurement of thickness shall be taken just after the surface preparation is completed. Area under repair shall be measured correct to a centimeter.

14.4 Curing: -

Curing shall be started after 24 hours of application of PMM. The repaired RCC member preferably wrapped with damp hessian cloth wherever feasible. Otherwise, repaired member shall be kept damped by spraying water over it with spraying machine without causing any dripping to prevent leaching of polymer content from mortar. The repaired surface shall be moist cured for 3 days followed by air curing at ambient temperature; steam curing shall not be permitted.

- 14.5 Testing: One mandatory test of the polymer modified mortar for every 250 sqm of plaster or part there of shall be conducted. The test shall be conducted on cube of size 70 mm, made from cement and graded quartz sand in ratio 1:3 admixed with approved polymer in specified proportion as per manufacturer specification. The test result should conform to the following strength parameter.

- i) Minimum compressive strength after 28 days: 20 N/mm²
- ii) Minimum flexural strength after 28 days: 2 N/mm²

15. **Particular specifications for premixed single component polymer modified repair mortar: (PMRM)**

Prior to applying premixed single component polymer modified repair mortar (PMRM) to RCC substrate, other repair items i.e. rust removal from reinforcement, anti corrosive treatment, providing additional reinforcement shall be completed in advance. Only bond coat shall be applied five minutes before applying PMRM.

15.1 Preparation of polymer modified repair mortar

PMRM shall be prepared in a plastic bucket/mini drum. 85% of required quantity of water shall be taken in a bucket/mini drum (not more than 30% capacity of the bucket), then dry PMRM shall be blended slowly under continuous stirring with low speed (500 – 800 rpm) electric stirrer for minimum 2 minutes and mortar shall be allowed to remain undisturbed for three minutes to dissolve polymer in the mortar. Balance quantity of water shall be added in the similar manner to form homogenous cohesive mortar of dough like consistency. Right consistency of mortar can be checked by making medium size ball of green mortar with hand. The ball should retain its shape when held on palm and at the same time it deforms easily without being cracked when it is pressed with palm.

15.2 Application of polymer modified repair mortar

The quantity of mortar shall be prepared at site it can be used up within 30 minutes after mixing dry mortar with water. Small balls of green mortar shall be pressed with palm applying small force against the concrete substrate primed with bond coat (wet on wet) for a thickness not more than 12mm. Next layer of mortar shall be applied over the first layer minimum after 6 hours to build up thicker section. The surface of repaired area shall be roughly finished with trowel upto the level of original RCC surface of the structure member. In no circumstances PMRM shall be applied by trowel by increasing water in the mix.

15.3 Curing

Curing shall be started after 24 hours of application of PMRM. The repaired RCC member preferably wrapped with damp hessian cloth wherever feasible. Otherwise, repaired member shall be kept damped by spraying water over it with spraying machine without causing any dripping to prevent leaching of polymer content from mortar. The repaired surface shall be moist cured for 3 days followed by air curing at ambient temperature; steam curing shall not be permitted.

15.4 Testing

One mandatory test of the polymer modified mortar for every 250 sq. m of plaster of part thereof shall be conducted. The test shall be conducted on cube of size 70 mm, made from polymer modified repair mortar. The test result should conform to the following strength parameter.

- i) Minimum compressive strength after 28 days at w/p ratio 0.16:40 N/mm²
- ii) Minimum flexural strength after 28 days at w/p ratio 0.16: 4 N/mm²

16 PARTICULAR SPECIFICATION FOR PREMIXED READYMADE CEMENT MORTAR

The brands as specified in the preferred material / makes list are only to be used in place of traditional cement-sand mortar for readymade plastering.

1) Surface Preparation

The surface needs to be cleaned and made free from grease, dust and loose particles to ensure proper binding. The surface needs to be pre-wetted with clean water before plastering.

2) **Process of mixing**

- i) Required quantity of dry mix shall be taken in a mortar mixing tray.
- ii) Measured quantity of potable water shall be added to dry mix as per manufacturer's specification. (6-7 litre of water is required per 40kg bag of and 7-8 litres of water is required per 40kg bag). Correct ratio of water and dry mix is essential for better result.
- iii) The mortar shall be mixed well for 5 to 10 minutes to achieve homogenous and cohesive mix. (Use of mechanical mixer / electrical stirrer is recommended for better results.)
- iv) The prepared mix shall remain undisturbed for 5 minutes to dissolve polymer additive in mortar and shall be mixed once again without adding any water just before use.

3) **Method of Application**

- i) Pre wetting of surface is required before applying plaster.
- ii) The mixture should be applied within one hour of preparation of mix. This will ensure that the thin layer can be applied without cracking problems and proper cement hydration.
- iii) If the concrete surface is smooth and dense, it is recommended to apply a bond coat of acrylic polymer of any approved make.
- iv) Readymade mortar shall be applied manually using trowel and care should be taken that it does not expose to direct sunlight, wind and rain during its application.

4) **Curing**

Curing shall be started after 24 hours of plastering in normal weather condition. After the plaster is completely dried, curing shall be done 2 to 3 times for 2 to 3 days. In abnormally dry weather conditions, curing for 5-7 days is required.

17. **JACKETING BY CEMENT CONCRETE**

17.1 All care for casting, curing etc. shall be taken as per CPWD specifications (Ingredients of concrete have to be tested before use. Requisite number of test specimens shall be casted and tested).

17.2 Concrete for jacketing shall be prepared strictly in drum mixture machine (electric /diesel operated) 80% of gauging water for particular batch shall be poured in the mixer drum. Measured quantity of super plasticizer shall be mixed with remaining 10% part of gauging water and then it shall be added to the pre-wetted concrete mixed. Then dry aggregate and cement in specified proportion in sequence shall be added in the mixer drum as per CPWD specifications. Balance water should be added in such a manner to produce homogeneous high slump flowing yet very cohesive concrete without bleeding and segregation. Before pouring concrete in the shuttering mould other repair items i.e. rust removal from reinforcement, anti-corrosive treatment, providing additional reinforcement and shear key etc. shall be completed in advance. Only bond coat shall be applied five minutes before pouring concrete. Concrete shall be poured in the shuttering mould when bond coat reaches tacky condition. There shall be no gap between shuttering and existing concrete surface. Thermocol sheet may be used to plug small irregular gaps.

- 17.3 While doing jacketing with cement concrete it should be ensured that dropping height of cement concrete should not be more than 60 cm.
- 17.4 **Testing:** One mandatory test for every 2.5 cum of concrete or part thereof shall be conducted. The test result should conform to the following strength parameter.
- i) Minimum compressive strength: 42 N/mm² in 28 days
 - ii) Minimum flexural strength: 4.42 N/mm² in 28 days
18. **PARTICULAR SPECIFICATION FOR MICRO CONCRETE**
- 18.1 Preparation of mix at site:
85% to 90% of required quantity of potable water shall be taken in a clean plastic bucket/mini drum or in a Pan of a Pan mixer. Proportional quantity of micro concrete (as per manufacturer specification) in dry state shall be blended slowly under continuous stirring electric stirrer or in rotating pan of pan mixer for 2 minutes. Then balance quantity of water shall be added to the mix and shall be stirred for another 2-3 minutes to form a homogeneous, free flowing lump free mix. 10 mm down coarse aggregate in the range of 25% - 40% by weight can be mixed where thickness of repair is more than 75 mm depending on site condition. Plastic bucket / Mini drum shall be used where volume of repair is less than 1 cum, otherwise pan mixer shall be used for preparation of micro concrete at site.
- 18.2 **Application of Micro Concrete:**
Primary repair items i.e. chipping, rust removal for reinforcement and anticorrosive treatment to reinforcement shall be operated well before jacketing of RCC members. Only bond coat shall be applied five minutes before pouring concrete. Micro Concrete shall be poured in the shuttering mould when bond coat reach tacky condition. There shall be no gap between shuttering and existing concrete surface. Thermocol sheet may be used to plug small irregular gaps. Gaps in the shuttering shall be effectively sealed with masking tape to prevent leakage of fluid concrete through joint of shuttering or gaps between shuttering of RCC members at contact point. Repair surface shall be hacked immediately after removal of shuttering if it shall be finished with plaster later stage.
- 18.3 **Curing:**
Curing should be started after the shuttering. The repaired RCC member preferably wrapped with damp hessian cloth wherever feasible. Otherwise repaired member shall be kept damped by spraying water over it with spraying machine without causing any dripping prevent leaching of polymer content from mortar. The repaired surface shall be moist cured for 3 days followed by air curing at ambient temperature; steam curing shall not be permitted.
- 18.4 **Testing**
One mandatory test of Micro concrete for every 2.5 cum of concrete or part thereof shall be conducted. The test shall be conducted on cube of size 75 mm, made from micro concrete. The test result should conform to the following strength parameter.
- i) Minimum compressive strength: 42 N/mm² in 28 days
 - ii) Minimum flexural strength: 4.42 N/mm² in 28 days

SPECIFICATION AND SPECIAL CONDITION FOR FURNITURE

1. The Contractor shall be required to produce samples of all materials sufficiently in advance to obtain approval of the Engineer-in-charge within 15 days of award of work. Subsequently the materials to be used in the actual execution of the work shall strictly conform to the quality of samples approved. In case of variation, such materials shall be liable to rejection.
2. All materials to be of approved manufacturer by the Competent Authority.
3. Wherever any reference to any Indian Standard Specifications occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revision thereof; if any, up to the date of receipt of tender.
4. The procurement of furniture items should be planned as per the schedule approved by the Engineer-in-charge depending upon stage of completion of the building and its flooring and finishing status etc. The contractor should submit a procurement schedule for approval as per the direction of CPWD.
5. An undertaking from the Original Furniture Manufacturer from the approved make stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty and after sale service should be submitted. The same to be submitted before execution of works. (SAMPLE UNDERTAKING TO BE PREPARED)
6. Committee comprising three members one from Client may visit the manufacturing center to examine the production manufacturing capacity of the firm.
7. The Bidder or Original furniture manufacturer should submit manufacturer Test Certificate for all its quoted products.
8. Acceptance/ Rejection of furniture articles: The Department reserves the right to reject any or all offers without assigning any reason.
9. Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.
10. The contractor shall supply furniture as per size, shape and specification mentioned in the schedule of items. However, if he wants to supply furniture of higher sizes, richer specification, and minor changes in shape then acceptance of furniture is on the discretion of Engineer-in-charge without any extra cost as per availability of space. The specifications given in schedule of furniture are broad in nature and bidder has to collect and correlate all additional information on its own to arrive at his bidding cost.
11. The safe custody of the furniture before its fixing at site, shall be the responsibility of the agency. Nothing extra shall be paid for the same.
12. All expenditure to be incurred for testing of samples e.g., packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.
13. All hardware items shall be of first quality from reputed manufacturers as per approved make list and shall be got approved from Engineer-in-charge before actual execution.
14. The complete partitions and all the individual basic elements / modules / units shall meet structural stability / rigidity requirements to the satisfaction of the Engineer-in-charge.
15. All hardware components like clamps nut / bolt / washer, screws, gasket, fitting and fixture, brackets, roller/guide / slide, casters, hardware etc. as may be required or are forming integral part of the system / basic elements / modules / units for construction / installation shall meet relevant structural and other requirements and be provided without any extra cost to the department, unless otherwise provided in item.
16. All the materials used for the works shall meet relevant BIS or other applicable standards (latest revision). All particle boards / MDF board shall be of Exterior grade having lamination of approved colour on exposed face and balancing lamination on the unexposed face.

17. All basic elements / module / units shall be factory made/ shop fabricated and only assembly/ Erection / installation shall be done at site.
18. All the materials brought to site shall be protected suitably, duly wrapped/ packed and stored so as to avoid any damage during loading/ transportation unloading/ handling/ installation/ erection or due to weather conditions etc. at any stage.
19. The contractor shall provide necessary cut outs for computer, telephone and power outlets as per the approved sample / shop drawing without any extra cost to the department. Shop drawings of the furniture (if required by Engineer-in-charge) shall be submitted by the agency. Nothing extra shall be paid for the same.
20. The material supplied shall be of make approved by Engineer-in-charge only.
21. The rates of the item shall include cost of material, Labour required in all the operation, including all taxes and the rate quoted shall be net. Nothing extra shall be paid towards GST, Income Tax, Labour Cess etc.
22. The rate quoted shall be inclusive of taxes, packing charges and transportation from the factory to the NABARD premises at Sterling Center, Worli, Mumbai and shall be placed in ready to use condition on the respective floors of the office building as per the directions of the Engineer-in-charge.
23. The Quantity stipulated in the agreement may be modified according to the site requirement and the rate quoted by the agency shall hold good for the increase and decrease in quantity.
24. Bidders / Manufacturers should be an ISO certified organization and considering growing concern on environment and human resource, the Furniture Manufacturer should also have Environmental Certificate. All these should be submitted with the bid. The following supporting documents should be NABCB accredited agency. For ISO 9001:2015 (For Quality Management System- QMS), ISO 14001:2015 (for Environment Management System- EMS), ISO 50001:2018 (Energy management system), ISO 45001:2018 (For Occupational Health and Safety Management System). Manufacturer must be BIFMA compliance Certificate GRIHA or Green Co Gold Certificate (Issued by CII - Confederation of Indian Industries. While delivering material all these certificates should be produced failing which payment will not be made.
- 24 a. The wood used shall be from sustainable source hence FSC certificate of OEM or his supplier to be submitted.
25. The materials supplied shall be free from cracks, breakages, defects, damages etc. If defects are noticed, it shall be replaced with new one & nothing extra shall be paid in this regards.
26. The Engineer In Charge shall approve all materials like brand of MDF/Particle board, brand and colour of lamination, all hardware's before execution.
27. The approved furniture manufacturer shall provide telephone number, email ID, detail and location of service station etc .
28. The warranty period shall be for the period of Five (5) years. 5% of the work done value to be deducted proportionately from each bill shall be withheld for a period of 5 (Five) years from the date of completion. 50% of the withheld amount shall be released after 30 months in case there are no defects received or defects successfully rectified to the satisfaction of Engineer-in- Charge. The Balance 50% to be released after 60 months of completion if there are no defects found or defects rectified to the satisfaction of Engineer In Charge.
29. DEFECT LIABILITY PERIOD
 - The period of defect liability as per schedule F shall be 05 years reckoned from the date of completion recorded by Engineer-in-charge for the work. Sufficient staff and materials/Equipment etc. will be arranged by the contractor to enable to

carry out the repairs/ rectifications immediately whenever pointed out by department free of cost. During the defect liability period, the contractor shall be liable to remove all the defects. All defects noticed during the currency of the Contract and also during the defect liability period shall be completely and satisfactorily rectified and repaired by the Contractor without any extra payment for the same. In case the Contractor fails to rectify these defects within 7 days of lodging of written complaint with the Agency satisfactorily and completely, department reserves the right to get the rectification work done at the risk and cost of the Contractor. The decision of Department in this regard shall be final and binding on the Contractor and shall be beyond the purview of the dispute settlement clause 25 of General Conditions of Contract. The Security Deposit during defect liability can be released in full, if bank guarantee of equivalent amount, valid for the duration of defect liability period, is produced and deposited with the Department.

30. Approval for Layout of Furniture's for every room of NABARD premises at Sterling Center, Worli, Mumbai office building should be taken from the Engineer-in-charge before initiating/ commencing the production and fabrication.
31. The Engineer-in-charge or his Authorized representative can visit factory / shop where manufacturing / assembling of furniture's are taking place. The contractor has to facilitate the Engineer-in-Charge or his authorized Representatives for this purpose whenever he has been asked to do so. Without extra payment.
32. All hardware items shall be of first quality from reputed manufacturers as per approved make list and shall be got approved from Engineer-in-charge before actual execution.
33. Open plan office arrangement (OPEA) shall comprise of basic elements / modules/units the partition, work surfaces, storage units, accessories, fixtures and fittings etc. arranged in desired configurations for office purpose. The basic elements shall be one of standard custom made sizes/shapes for specific requirements. The system shall offer flexibility to make subsequent changes/ modifications and shall have in- built wire management system separately for electrical, computer data networking and telephone cables.
34. All wood/ wood-based material shall be given appropriate anti-termite treatment. All the exposed surfaces of all the aluminum/MS section/ covers etc. shall be epoxy powder coated with 50 micron or as specified thick coating in desired shade.
35. All the edges of the particle boards / MDF board except those which are post formed shall be sealed with PVC edge banding tape of 2mm thickness. The edge banding tape shall be rounded to a radius of 2mm to 3mm at edges and shall be hot melt glued on edge banding machine.
36. Testing of materials should be got done through the following Testing laboratories.
 - All Government Institutes having testing Laboratory facility.
 - Indian Institute of Technology.
 - National Test HOUSE Mumbai.
 - Central Government/ State Government Research Centres.
37. Specification of Powder Coating.
 - Powder coating shall be with Epoxy powder of a standard shade or as required.
 - The specific gravity of powder should be such that it gives DFT (Dry Film Thickness) of 50 -60 micron.
 - It should withstand salt spray test of not less than 1000 hrs as per ASTM- B-117.
 - SCRATCH HARDNESS TEST as per DIN 53153 shall be conducted and

results should be such that no scratch shall show bare metal with a load of 3 kgs.

- The following seven step phosphating process treatment shall be conducted before powder coating.
 - a. Hot water rinse.
 - b. Knock of Degreasing.
 - c. De-rusting.
 - d. Cold water rinse.
 - e. Activation.
 - f. Nano Coat.
 - g. Passivation

42. Guarantee for Custom made Furniture.

The work of Custom made furniture work shall be guaranteed for a period of 5 (Five) years as per enclosed guarantee bond against manufacturer's warranty, workmanship and defective finishing. On notification by the Engineer-in-Charge of any compliance to be performed under this guarantee by the contractor, the contractor shall immediately supply labour/ material and rectify all the defects notified by the Engineer-in-Charge. If contractor failed to attend the defects notified by the Engineer-in-charge in guarantee period same shall be attended from the market and on the risk and cost of the contractor and double recovery shall be effected from the security deposit withheld by the department. Security deposit shall be released after completion of defect liability period if no defects are observed in the guarantee period and defects have been rectified in pursuant in the agreement to the entire satisfaction of the Engineer-In-Charge.

- 43. All hardware items shall be of first quality from reputed manufacturers as per approved make and shall be got approved from Engineer-in-charge before actual execution.
- 44. All exposed edges are sealed with 2mm PVC edge banding pressed at 200° C with hot melt glue on special machines.
- 45. The complete system shall have facility to remove element / module / unit individually without affecting adjoining element / module / unit for maintenance/ replacement purpose or subsequent changes.
- 46. If the contractor or his working people or servants shall break, deface, injure or destroy any part of furniture or building in which they may be working, or if any damage shall happen to the furniture work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within sixty months after a certificate final or otherwise of its completion shall have been given by the Engineer-in- Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of sixty months after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later.

47. Furniture Specifications :

- a. Bidders / Manufacturers should be an ISO certified organization and considering growing concern on environment and human resource, the Furniture Manufacturer should also have Environmental Certificate. All these should be submitted with the bid. The following supporting documents should be NABCB accredited agency. For ISO 9001:2015 (For Quality Management System- QMS), ISO 14001:2015 (for Environment Management System- EMS), ISO 50001:2018 (Energy management system), ISO 45001:2018 (For Occupational Health and Safety Management System). Manufacturer must be GRIHA or Green Co Gold Certificate (Issued by CII - Confederation of Indian Industries. Valid certificate should be uploaded along with the bid.

The certificates of above compliance shall be given while submitting the technical data sheet/ model no. etc. to Engineer-in-Charge before supply or manufacturing the furniture at the factory. The decision of Engineer-In-Charge shall be final and binding to the contractor.

- 47.1 General: Furniture shall be of sizes, section details as shown on the Photographs and as mentioned in schedule of quantity. The details shown and mentioned indicate generally the sizes of the component parts and general standards. These may be varied slightly to suite the standard adopted by the manufacturers. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and fixing drawings for approval of the Engineer- in-Charge and no work shall be performed until the approval of these drawings is obtained.
- 47.2 Shop Drawings: The contractor shall submit the shop drawings of furniture, based on the photographs and schedule of Quantities to the Engineer-in-Charge for his approval. The shop drawing shall show full size sections of component parts etc. thickness of members details of construction, sub frame/rough ground profile, anchoring details hardware, jointing etc.
- 47.3 Samples: Samples of material such as Boards, Beadings etc. and fittings/ fixture such as hinges, sliders, nuts, bolts, locks etc. of available colours, shades etc. shall be submitted to Engineer- in-Charge for his approval. They shall be of sizes, types etc. as decided by Engineer-in- Charge. All samples shall be provided at the cost of the contractor.
- 47.4 Handling and Stacking: Fabricated materials shall be carried in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carried out with utmost care. On receipt of material at site, it shall be carefully examined to detect any damaged pieces. Arrangements for expeditious replacement of damaged pieces/ Materials found to be acceptable on inspections shall be repacked in crates and stored safely.
- 47.5 Acceptance Criteria: The entire responsibility for the quality of work will rest with the contractor only. The furniture work shall carry Five years guarantee after completion of work against unsound material, workmanship and defective epoxy powder coating as per Guarantee Bond. Five years guarantee in prescribed Performa attached under must be given by the contractor, in token of his overall responsibility. 5% (Five percent) of the cost of these items would be retained as additional security deposit and the amount. 50% of the additional security deposit so deducted will be released after two years from the date of completion of the entire work under the agreement and remaining 50% will be released from the date of completion of the entire work under the agreement, if the

performance of the items is found satisfactory. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in full if bank guarantee of equivalent amount having validity guarantee period plus Six months is produced and deposited with the Department.

Note: Colours/Shades/combination of colours of the material/ furniture, tapestry etc. shown in the photographs are for suggestions only. Engineer-in-Charge reserves the right to choose from available Colours/Shades/combination of colours and nothing extra will be payable on this account.

ADDITIONAL CONDITIONS FOR FURNITURE :

1. The Contractors are advised to get acquainted with the proposed work and its site and also study the Architectural Drawings, specifications and special conditions carefully before tendering. No claim of any sort shall be entertained on account of any site conditions and ignorance of specifications and special conditions.
2. The rates quoted by the contractor shall be taken as net including GST and other taxes and nothing extra shall be paid on any account i.e. royalty, cartage, taxes and stacking at required places and protection from damages while stacking etc.
3. The Contractor will submit the shop drawings of all the furniture items except chairs within time stipulated in schedule-F of the NIT. The contractor will also prepare furniture layout plan of all the floors for obtaining the approval of Engineer-in- Charge before placing the furniture.
4. Unless otherwise provided in the schedule of quantities, the rates tendered by the firm/agency shall be inclusive of all materials, labour, Machinery charges, taxes etc. as on date of opening of tenders including incidental expenses, packing charges, transportation to site & fixing in position at various places/floors in the building. The materials will not be allowed to be taken through the Mechanical Elevators installed in the building, the same have to be carried through the staircases. No claim what so ever on this account shall be entertained afterwards.
5. Any damage done by the contractor to any existing work during the course of execution of the work shall be made good by him at his own cost or shall be made good by Engineer-in-Charge at the risk and cost of contractor.
6. Articles manufactured by the reputed firms and approved by Engineer-in-Charge shall only be used. Only articles classified, as "first quality" by the manufacturer shall be used unless otherwise specified. In case articles bearing ISI certification are not available in the market, quality of samples brought by the contractor shall be judged by standards laid down in the relevant CPWD specifications. For the items not covered by CPWD specifications relevant BIS standards shall apply. The sample of materials to be brought to site for use in work shall be got approved from the Engineer-in-Charge before actual execution of work.
7. Samples of materials required for testing shall be provided free of cost by the contractor. Testing charges, if any, shall be borne by the agency in case the test results are satisfactory except where- ever specifically mentioned otherwise in the NIT. All other expenditure to be incurred for taking samples, conveyance, packing etc. shall also be borne by the contractor..

8. The quantities of each item shall not be exceeded beyond the agreement quantities without prior written permission of Engineer-in-Charge.
9. Statutory deductions on account of GST, income tax and surcharge as applicable shall be made from the gross amount of the bill.
10. The contractor shall make his own arrangement for getting the permission to ply the trucks from the traffic police.
11. No payment shall be made to the contractor for any damage caused by rain, snow fall, floods or any other natural causes whatsoever during the execution of work. The damage caused to work shall have to be made good by the contractor at his own cost and no claim on this account shall be entertained.
12. Co-ordination with other Agencies:
Other agencies may also simultaneously be executing the Civil work, Electrical/ Mechanical, Horticulture or external services and other building works for the same building along with this work. The following services shall be extended by contractor to other agencies for carrying out their work.
 - i. Access to various works of site.
 - ii. Make available clear site
13. The Contractor shall co-ordinate with all other agencies involved at the site of work so that the work of other agencies is not hampered. Where activity of contractor is directly affecting the progress of other agencies, the same shall be given priority. Contractor is required to note the milestones of other agencies and plan his activities to facilitate so as to avoid any hindrance to other agencies. In case of any conflict with work schedule of any other agency at site, decision of Engineer- in-charge shall be final and binding. Contractor has to co-ordinate with other contractor in such a fashion so that they get reasonable time to take up their work. During execution of work Department may desire for completion of certain areas on priority, in such cases contractor shall modify his plan accordingly.
14. The cost of Co-ordination/facilities extended to other contractors shall be deemed to be included in the quoted amount of contractor and nothing extra shall be payable.
15. Some restrictions may be imposed by the security Agencies / Building Society etc. on the working and or movement of labour and materials, etc, the contractor shall be bound to follow all such restrictions / instructions and nothing shall be payable on this account.
16. The Contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work by storing materials on the road.
17. The Contractor shall be fully responsible for the safe custody of the material issued or brought by him to site for doing the work.
18. The Contractor shall make his own arrangement of water for construction and drinking purpose as well as for electricity and its distribution at his own cost. The department will render only assistance to the contractor for making application to water supply authority / Authorized electric supply agency, if required. All the fees and charges including consumption charges shall be borne by the contractor.
19. The malba /garbage generated at site due to construction activities shall be removed from the site immediately & shall be disposed off by the contractor to the approved dumping site identified by the Engineer-in-charge.
20. The Contractor shall clean the site thoroughly of scaffolding materials, rubbish, equipment left out of his work and dress the site around the building to the complete satisfaction of the Engineer-in- charge before the work is treated as completed.

21. The labour welfare cess @ 1% of gross work done shall be deducted except furniture recovered from OEM / reseller directly.
22. The Department shall be at full liberty to get the installation inspected by the third party and the contractor shall have to make all modifications in the designing and installations as communicated to it by the department inter-alia advised by the third party.
23. Furniture items shall be fabricated in the workshop only on State of Art the Modern Machines. No fabrication will be allowed at the site. Fabricated items shall be transported to site in proper packing & assembled/erected in position as per approved layout.
24. All the materials brought to site shall be protected suitably, duly wrapped/ packed and stored so as to avoid any damage during loading/ transportation unloading/ handling/ installation/ erection or due to weather condition etc. at any stage
25. The firm/agency shall keep the Engineer-in-charge informed about progress of work during manufacturing. All the units of furniture shall be got inspected by Engineer-in-charge or his representative before any filling and final polish. Only after their satisfaction filling and polish is to be done. The uninspected furniture units will not be acceptable at site.
26. The firm/agency will have to work according to the program decided by the engineer-in- charge for which purpose the firm/agency should submit a tentative program of the work within seven days from the date of start of the work. The firm/agency shall prepare and put up Mock up of the furniture for each items for the approval of Engineer-in-charge within 15 days at a place decided by Engineer-in-charge from the date of start. Only after the approving of sample units, full items of the schedule shall be fabricated and installed at site.
27. The Engineer-in-charge shall have full access to the manufacturing units & will be at liberty to collect samples of various materials being used in the fabrication to have effective quality control.
28. The firm/agency shall also have to produce manufacturers test certificate for various materials such as Metal Sections, wood and wood based material, hardware, boards, fabric etc. in case of demand being raised by the Engineer-in-Charge.
29. All prefabricated components & other materials brought at site shall be subject to inspection & approval out from the lot of finished product brought at site by the firm/agency or authorized dealer. In case any material is found unsatisfactory/unacceptable, the same shall be removed from the site within 48 hours from the time of intimation, failing which it may get removed by the Engineer-in-charge from the site at the risk & cost of the firm/agency.
30. DISCREPANCY BETWEEN THE NOMENCLATURE OF ITEMS, SPECIFICATIONS, AND / OR THE DRAWINGS.
The following specifications are applicable for the work. In case of discrepancy between the nomenclature of items, specifications, and /or the drawings or in case no specifications are specified (Refer clause 28 of the General Conditions of the Contract-2023 (Construction work) the following order of preference shall be observed:
 - Nomenclature of items including the scope of work as given in Schedule of Quantities of this tender.
 - Technical/ Particular Specifications, Special Conditions and other provisions of this tender.
 - Drawings.

- CPWD Specifications (latest edition) with upto date correction slips issued upto the last date of the month prior to month of submission of tender.
 - BIS Codes with latest revisions issued upto the last day of the month prior to month of submission of tender.
 - International standards and accepted international practices as approved by Engineer-in- Charge
 - Sound Engineering Practice as per directions of the Engineer-in-Charge.
 - If there are varying or conflicting provisions made in any document forming part of the contract, the Engineer-in-Charge shall be the deciding authority with regard to the intention/interpretation of the tender and his decision shall be final and binding on the contractor.
31. The contractor shall submit the relevant test certificate at the time of supply of furniture.
32. The successful tenderer would be required to submit the following drawings after award of work for approval before commencement of installation.
- All general arrangement drawings.
 - Shop drawing of the complete furniture item including accessories details and installation system to be used with make for approval and manufacturer "specification.
 - Complete layout dimensions for every unit/group of units with dimensions required for erection purposes.
 - Any other drawing/information not specifically/mentioned above but deemed to be necessary for the job by the contractor.
33. **DURING INSPECTION AND TESTING**
- All Furniture items shall be offered for initial inspection by the Engineer-in-Charge or Officer authorized by him at manufacturer's works in India. The department may or may not inspect the material at its discretion. The contractor will intimate the date of testing of furniture's / equipment's at the manufacturer's works before dispatch. Contractor shall make all arrangements for inspection of material at works. The department reserves the right to get the equipment inspected by third party inspection also. Such inspection shall be of following categories:
- Inspection of materials/ equipment to be witnessed at the manufacturer's premises/ at its authorized works in India, in accordance with relevant BIS/ Agreement Inspection Procedure.
 - To receive material at site with manufacturer's Routine & Type Test certificates.
 - To inspect material at the authorized dealers godown to ensure delivery of genuine material.
 - To receive material after physical inspection at site.
 - Adequate care to ensure that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall ensure that:
 - Material will be ordered and delivered at site only with the prior approval of the department. The contractor shall, however, be responsible for timely delivery of material. (a) As and when the order is placed for the items, it shall be endorsed to the Engineer-in-Charge along with details of Agency, model no. and other delivery details.

34. **COMPLIANCE WITH REGULATIONS AND INDIAN STANDARDS**
Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.
35. Placing at final location the contractor shall examine the final locations for placement of furniture items. He will take the measurement of door widths to pass. The furniture items. If assembled furniture item does not pass through the door then the contractor has either to disassemble the furniture item or to bring the furniture item in de-assembled condition from the manufacture's work. The furniture item in this case would be reassembled at final location for placement & nothing extra shall be paid on this account.
36. In the event of prolongation of agreement due to delay or reduction in scope of work, no claim on account of reduction in scope of work, loss of business, loss of profit consequently overheads and any type of interest etc. shall be entertained.

SCOPE OF WORK :

1. It includes providing and fixing of customized furniture & fixture as required for NABARD.
2. The quantities of furniture mentioned in Schedule of Quantities are to be placed at locations as per approved furniture plans or as per direction of Engineer-in-Charge.
3. It is the responsibility of the bidder to take necessary approvals/ entry passes/ vehicle permit/ driving permit to complete the work. Any payment which needs to be made in this aspect needs to be borne by the bidder.
4. The bidder shall ensure that the personnel deployed for the work are well experienced. The bidder shall keep the site neat and clean to avoid any accident or hazard.
5. Bidders are advised to visit the site well before submitting their bids at their own cost.
6. All packaging materials brought while supplying the goods, shall be disposed of from the premises for which nothing extra is payable.
7. The successful bidder has to supply all essential accessories required for the successful installation and commissioning of the goods supplied.
8. The Buyer reserves the right to increase/decrease the order quantities by upto 100% for all or any of the items mentioned in the tender.
9. The bidder shall supply the increased quantity at their quoted rates only.
10. The buyer reserves the right to delete any item of the order based on the requirement. The vendor will not have any claim whatsoever on account of deletion of item by Engineer-in-charge. The work has to be executed as per final decision of the Engineer-in-charge.
11. **SCOPE OF SUPPLY:** (Bid price to include all cost components): Design, Manufacturing, supply and Fixing of Furniture.
12. **Timely Servicing / Rectification of defects during warranty period:** After having been notified of the defects / service requirement during warranty period, bidder has to complete the required Service/ Rectification within 7 days' time limit. If the bidder fails to complete service / rectification within defined time limit, a penalty of 0.5% of the Unit Price of the product shall be charged as penalty for each week of

- delay from the bidder. Bidder can deposit the penalty with the Buyer directly else the Buyer shall have a right to recover all such penalty amount from the Security Deposit. Cumulative Penalty cannot exceed more than 8% of the total contract value after which the department shall have the right to get the Service/ rectification done from alternate sources at the risk and cost of the bidder besides forfeiture of Security Deposit. The Security Deposit shall be valid throughout the warranty period. Bidder shall be liable to reimburse the cost of such service /rectification to the department.
13. Bidder has to submit an undertaking that all the items are covered under 5 year warranty. Undertaking has to be signed by OEM.
 14. Delivery Schedule: All furniture items to be supplied within 120 days of award of contract and it is the responsibility of supplier to contact Engineer-in-charge immediately after award of contract and collect schedule of Supply and furniture layouts.
 15. Any other obligation mentioned in the bid document including the Terms and Conditions.

Mandatory Terms and Conditions

1. Bidders should quote for all the items mentioned in the order. Partial quote will not be considered for evaluation.
2. Evaluation will be done on overall lowest basis (LI).
3. The Manufacturer Agency/Firm (OEM) shall have its own factory for metal and wood furniture plant. Complete details of manufacturing unit with technical capabilities to accomplish desired job of required furniture mentioned in tender along with machinery equipment/ tools & photographs, client list, to be submitted along with the photographs, failing which bidder will be considered disqualified for participating in the tendering process. Manufacturer should submit the Below List of Machinery and department has the right to visit factory and validate machinery details.
 - Computer Controlled multi station through-feed edge banding machine.
 - Router Machine
 - Power Press Machine
 - Pipe Cutting Machine
 - Hydraulic Brake Press
 - Lazer Sheet Processing Machine/ CNC Lazer Cutting Machine
 - Hot Press for Laminate Pressing
 - Sliding Panel Saw Machine
 - Spindle Modular Machine
 - Multi Boring Machine
 - Sliding Panel Saw Machine
 - Multi Boring Machine
 - **MIG/ TIG** Welding
 - Robotic Welding Machine
 - Spot Welding Machine
 - 9 I 10 tank In House Powder Coating Line with baking oven and powder application
 - Automatic Powder Coating Booth

- CNC Tube/Pipe Bending Machine
 - Welding Machine
 - Facia Folding Machine
 - FTT Drilling Machine
 - HKL 380 angular saw/ CNC Beam Saw Machine
 - Mechanical Press 80T
 - Metal Sheet Cutting Line
4. The bidder should submit plant and machinery photographs with Geo tagging location in their manufacturing unit which are required for manufacturing the BOQ material. The illustrative list of machinery is given in point no 4 as given above.
 5. Raw Material to be used in product for steel shall be from the following reputed manufacturer: Tata Steel, JSW Steel, Sail, Jindal Steel, Essar Steel and material used for Powder coating shall be from Kansai Nerolac, Berger Paints and Asian Paints. Bidder needs to submit the quality / test report of purchases done from above suppliers only 3rd party / agency certificate will not be entertained. It should mention that raw material is supplied by these reputed Steel manufactures. All relevant certificate of raw material to be used will be furnished to the client at the time of supply of products. If certificates are found false /forged, bidder will be debarred for participating in all tendering process.
 6. One or more products of the OEM should be certified as BIFMA Complaint and an official product link/ screenshot of the product listing's must be provided from www.bifma.org in each case.
 7. The OEM products should be approved by All India Occupational Therapist Association (AIOTA) indicating that the products are designed ergonomically, and Valid certificate should be uploaded along with the bid where ever applicable.
 8. Manufacturers must agree to undertake a warranty for Minimum 05 year for all the items supplied. The warranty would be starting from the date of completion of all scope of work mentioned in the bid. Manufacturers should have the capability to attend repair works of the Furniture within the time mentioned in this bidding document. Bidder should also submit service escalation matrix for service support.
 9. The dimensional tolerance upto $\pm 5\%$ shall be acceptable subject to approval of the Engineer-in-Charge.
 10. The manufacture/ Bidder should have own testing lab set up to perform testing for raw material and finished goods by following test methods. The details of these testing lab machines has to be attached in the tender as mentioned below. The same will be shown during the plant visit if any. Manufacturer/Bidder shall submit the Below Test machine details.

- Flexibility & salt spray test for powder coating.
 - Scratch hardness and impact test.
 - Impact/ Drop test (For Gloss and Matt Finish Both).
 - Locking Mechanism (No structural breakage and no loss of serviceability should be observed).
 - Door Usage Test (No structural breakage and no loss of serviceability should be observed).
 - Dry film thickness test (50 microns minimum).
15. OEM to provide in-house testing certificates for all the products at the time of supply of products. Bidders participating with multi brands products will not be accepted. Only bids with single brand product will be qualified.
 16. OEM Should have In-house foam manufacturing facility along with Product Testing Laboratory. Department can verify the details by visiting the factory of OEM if required. (Images with Geo tagging location to be attached in the tender).
 17. The bidder should not be under liquidation, court receivership or similar proceedings and should not be bankrupt. Bidder to upload undertaking to this effect, with the bid.
 18. If required the bidders will be asked to submit the product sample / mock up at the time of technical evaluation. If required, sample of material will be tested from selected Govt. or other approval Testing Laboratory at the cost of bidder and if it is found that material supplied is sub-standard from the tender specification, then the bidder will be disqualified for further processing.
 19. Even though the bidders meets the above qualifying criteria, they are liable to disqualified at any stage of the tender process, if they have:
 - made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; (Authority, in this regard reserves the right to verify from any person, banker of the applicant or companies issuing credentials in favor of the applicant) and/or
 - If vendor will quote unreasonably high/low bid prices and could not furnish rational justification to the client/ Engineer-in-charge inviting these bids.
 20. Bidder's offer is liable to be rejected if they don't upload any of the certificates /documents asked in the Bid Document, in the Mandatory Terms & Conditions and in the Corrigendum, if any.
 21. Final acceptance of the firm to execute the project shall be made based on conformity to technical specifications, appropriateness of the products offered, capability of the bidder to execute and service the project and appropriateness of financial offer from the point of view of cost effectiveness.
 22. Joint Ventures are not allowed for bidding.
 23. Images shown are for illustration purpose only. Any brand or name of the product is not associated to these images.

**SPECIAL CONDITION FOR WATERPROOFING WORK
GUARANTEE FOR WATER PROOFING TREATMENT:**

All water-proofing work shall be carried out through approved specialist agency as per method of working approved by the Engineer-in-charge. However, the Contractors shall be solely responsible for waterproofing treatment until the expiry of the above guarantee period. 5 years guarantee in prescribed proforma attached shall be given by the contractor for the water proofing treatment. Towards that 10% (ten percent) of the cost of these items of water proofing under this sub head shall be retained as guarantee to watch the performance of the work executed. If any defect is noticed during the guarantee period, it should be rectified by the contractor within seven days of issuing of notice by the Engineer-in-Charge and, if not attended to, the same shall be got done through other agency at the risk and cost of the contractor and recovery shall be affected from the amount retained towards guarantee. In any case, the contractor and the specialist agency, during the guarantee period, shall inspect and examine the treatment once in every year and make good any defect observed and confirm the same in writing. The security deposit can be released in full, if bank guarantee of equivalent amount, valid for the duration of guarantee, period, is produced and deposited with the Department.

MAINTENANCE OF RECORDS BY THE CONTRACTOR

- 1. Maintenance of Material at Site (MAS) Register–**
 - (i) All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-charge.
 - (ii) Each of the entry of receipt of material at site shall be 100% test checked by JE or by AE if there is no JE. Each MAS Register shall be checked by JE at least twice a week and at least once a week by AE. If there is no JE then MAS registers will be checked by A E at least twice a week.
- 2. Copy of all test registers and Material at Site Register with each alternate Running Account Bill and Final Bill shall be submitted by the contractor.**
- 3. MAS register of the key materials including Cement, Steel Bitumen, Paint, Primer, Distemper, Varnishes, Tile Adhesive, Admixture, Anti termite chemical, Water proofing compound material and other items as required by Engineer-in-Charge, and shall be maintained as per proforma in Appendix-XX of GCC. All the entries in the MAS registers are to be made by the designated staff of the contractor and same is reviewed weekly by the authorized representative and fortnightly by the Engineer-in-Charge. However, contractor is responsible for maintenance and safe custody of MAS registers.**
- 4. The self-attested copies of tax paid bill of all the materials entered in the MAS register shall be submitted by the contractor at the time of review by representative of Engineer-in-Charge. In case of any doubt, genuineness of the tax paid bills; it can be verified by the representative of the Engineer-in Charge or the Engineer-in-Charge, however, onus of genuineness of tax paid bills rest with the contractor.**

**GUARANTEE TO BE EXECUTED BY CONTRACTORS FOR PREMIUM ACRYLIC
SMOOTH EXTERIOR PAINT / ACRYLIC SMOOTH EXTERIOR PAINT AFTER
COMPLETION IN RESPECT OF FINISHING ITEMS.**

The Agreement made this _____ day of _____ Two thousand ----- and between _____ son of _____ (hereinafter called the Guarantor of the one part) and the PRESIDENT OF INDIA (herein after called the Government of the other part).

WHEREAS THIS agreement is supplementary to a contract (hereinafter called the Contract), dated _____ and made between the GUARANTOR OF THE ONE part and the Government of the other part, whereby the Contractor, inter alia, undertook to render the buildings and structures in the said contract recited completely defects free surface.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said structures will remain defect free for **FIVE YEARS** from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that ***PREMIUM ACRYLIC SMOOTH EXTERIOR PAINT / ACRYLIC SMOOTH EXTERIOR PAINT** done by him will render the structures completely finish and the minimum life of such ***PREMIUM ACRYLIC SMOOTH EXTERIOR PAINT / ACRYLIC SMOOTH EXTERIOR PAINT** shall be **FIVE YEARS** to be reckoned from the date after the maintenance period prescribed in the contract.

Providing that the Guarantor will not be responsible for damage caused by earthquake or structural defects or misuse of surface and for such purpose.

The decision of the Engineer-in-charge with regard to kind of defects shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building defects to the satisfaction of the Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the GUARANTOR'S cost and risk. The decision of the Engineer-in-charge as to the cost, payable by the Guarantor shall be final and binding. That if the Guarantor fails to remove its defects or commits breach there under, then the Guarantor will indemnify the Principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and /or cost incurred by the Government the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHERE OF these presents have been executed by the Obligor _____ and by - -----and for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

Signed, sealed and delivered by Obligor in the presence of –

1. _____
2. _____

Signed for and on behalf of the President of India

In the presence of –

1. _____
2. _____

* STRIKE OUT WHICH EVER IS NOT APPLICABLE

**GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF
DEFECTS AFTER COMPLETION OF WORK IN RESPECT OF
WATERPROOFING WORKS.**

This agreement made this..... day of two thousand and
between, (Name of the contractor, hereinafter call Guarantor of the one part) and the
PRESIDENT OF INDIA (hereinafter called the Government of the other part).

Whereas this agreement is supplementary to a contract (hereinafter called the Contract)
dated___and made between the GUARANTOR of the one part and the
GOVERNMENT of the other part, whereby the Contractor inter alia, undertook to render the
buildings and structures in the said contract recited completely water and leak proof.

And whereas the Guarantor agreed to give a guarantee to the effect that the said structures
will remain water/leak proof for **five years** from the date of completion of the total project.

Now the Guarantor hereby guarantees that waterproofing treatment given by him will render
the structures completely leak proof and the minimum life of such water proofing treatment
shall be ten years to be reckoned from the date completion of work.

Provided that the Guarantor will not be responsible for leakage caused by earth quakes or
structural defects or misuse of roof or alterations and for such purpose

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

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

That if the Guarantor fails to execute the necessary rectification or commits breach there
under then the Guarantor will indemnify the Principal and his successors against all loss,
damage, cost expense or otherwise which may be incurred by him by reasons of any default
on the part of GUARANTOR in performance and observance of this supplementary
agreement. As to the amount of loss and / or damage and / or cost incurred by the
Government, the decision of the Engineer-in-Charge will be final and binding on the parties.

In witness where of these presents has been executed by the Obligator.....and by
..... and for and on behalf of the PRESIDENT OF INDIA on the day
month and year first above written.

Signed, sealed and delivered by(OBLIGOR) in the presence of:

1.

2.

**Signed for and on behalf of THE PRESIDENT OF INDIA BY.....
in the presence of:**

**TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS
AFTER COMPLETION IN RESPECT OF WATER SUPPLY AND SANITARY
INSTALLATIONS**

The agreement made this.....day ofTwo Thousand and.....between
___son of

(here in after called the GUARANTOR of the one part) and the PRESIDENT OF INDIA
(hereinafter called the Government of the other part.)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the
Contract) dated__and made between the GUARANTOR OF THE ONE PART AND the
Government of the other part, whereby the contractor inter alia, undertook to render the work
in the said contracture cited structurally stable workmanship, finishing and use of sound
materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said
work will remain structurally stable and guaranteed against faulty workmanship, finishing,
manufacturing defects of materials and leakages, etc.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain
structurally stable after expiry of maintenance period prescribed in the contract for the
minimum life of 02 (Two) year to be reckoned from the date after the expiry of maintenance
period prescribed in the contract.P

The decision of the Engineer-in-charge with regard to nature and cause of defect shall be
final.

During this period of guarantee, the guarantor shall make good all defects to the satisfaction
of the Engineer-in-charge calling upon him to rectify the defects failing which the work shall
be got done by the Department by some other contractor at the Guarantor's cost and risk.
The decision of the Engineer-in-Charge as to the cost, payable by the Guarantor shall be final
and binding.

That if the guarantor fails to make good all the defects commits breach there under, then the
guarantor will indemnify the principal and his success or against all loss, damage, cost
expense or otherwise which may be incurred by him by reason of any default on the part of
the GUARANTOR in performance and observance of this supplementary agreement. As to
the amount of loss and/or damage and or cost incurred by the Government, the decision of
the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents, have been executed by the obligator
.....and

.....by
..... For and on behalf of the PRESIDENT OF INDIA on the
day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:

1.
2.

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY
..... in the presence of:

1.
-

PREFERRED MAKE OF MATERIALS**(FOR CIVIL WORKS)*****Preferred Makes for Civil Works:***

Brand names of materials to be used as per the scope of work are listed hereand are indicative only. The agency should use ‘Make-in-India’ products only as per the Govt. of India “Make in India “policy updated upto the last date of submission of bids. The agency should also consider the availability of spare parts/components for maintenance purposes while proposing any brand/manufacturer. The alternate brand can be used only after the approval of NIT approving authority. The agency shall submit at least three brands from the list given below along with the rates (the difference in rates shall not be morethan 10%) and specifications for the approval of Engineer-in-Charge before placing order. Any other equivalent brand shall be allowed only if the already provided brands in the preferred Make List are not available in the market. Preference shall be given to ‘Make-in-India’ products. In case of non- availability of ‘Make in India’ brands, then only the proposal for use of international brands is allowed with the prior approval of NIT approving authority complying with all Government of India norms. The list of preferred Makes forCivil work is given below:

Sr.No.	Material	Preferred Makes/Brands/Manufacturer
1	Ordinary Portland Cement/ Portland Pozzolana Cement	ACC/ULTRATECH/AMBUJA/ JKCEMENT / SHREE CEMENT
2	Ready Mix Concrete	ACC / ULTRATECH / PRISM / JOHNSON/ RMC GODREJ / JSW /NUVOCO (LAFARGE)
3	White Cement	BIRLAWHITE/ JKWHITE
4	Reinforcement Steel (TMT Bars) Low Alloy/ Corrosion Resistant Bars of Fe 550D Grade or more	SAIL/TATASTEEL/RINL/JSPL / JSW
5	Mechanical Bar Couplers for Reinforcement	DEXTRA / G-TECH / SNTP /SANFIELD
6	Re-barring Chemical/Mechanical Fastener, Anchor Fastener	HILTI/ 3MINDIA /WURTHINDIA /BOSCH / FISHER
7	Structural Steel	TATA / RINL / SAIL / JSW / JSPL
8	Admixture for Concrete :- Plasticizer/Super Plasticizers / SRA/Bipolar Corrosion Inhibitor Admixtures	SIKA / BASF/ CICO TECHNOLOGIES / PIDILITE / FOSROC /MCON /MAPEI /ASIAN SMART CARE
9	AAC Block	HLL BIRLA AEROCON / TATA TISCOBUILD / J K LAKSHMI / SIPOREX /FERROUS CRETE

10	AAC Block Adhesive	HLL BIRLA AEROCON / ULTRATECH/ARDEXENDURA/MYK LATICRETE/ MAPEI
11	Injection Grouting System :- Cementitious/ Resin Based /PU	PIDILITE / CICO TECHNOLOGIES / SIKA / BASF/ FOSROC / MC BAUCHEMIE (I) PVT. LTD. / ASIAN SMART CARE / MAPEI
12	Curing Compound	SIKA / PIDILITE / CICO TECHNOLOGIES / FOSROC / BASF / MAPEI / ASIAN SMART CARE
13	Expansion Joint- modular	HERCULES/Z- Tech/SANFIELDINDIA/MIGUA / BASF/ SIKA/FERROUS CRETE / MAPEI
14	Anti Termite Treatment	BAYER/HINDUSTANINSECTICIDES /DE- NOCIL
15	Waterproofing Self-adhesive (HDPE) Membrane	PIDILITE / CICO TECHNOLOGIES / SIKA / BASF/ FOSROC /MC BAUCHEMIE (I) PVT. LTD./ MAPEI / ASIAN SMART CARE
16	Single Component or Two component Polyurethane (Pure/Hybrid) – Spray /Brush, Two Component Polyurea (Pure/Hybrid)- Spray / Brush Applied	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA/ MC BAUCHEMIE (I) PVT. LTD./ ASIAN SMART CARE / MAPEI
17	Integral Crystalline Waterproofing Compound	PENETRON (I) Pvt. Ltd / HYGIE (I) PVT. LTD. / XYPEX CHEMICAL CORPORATION / SPANOTECH (I) PVT. LTD. / VEXCOLT INTERNATIONAL LTD. / MAPEI
18	Crystalline Waterproofing Coating	KRYTON / CICO TECHNOLOGIES / PIDILITE/ PENETRON /FOSROC/ MAPEI/ASIAN SMART CARE / FERROUS CRETE
19	Swellable Water Bar, Re-injectable Hose System	KRYTON / CICO TECHNOLOGIES / PIDILITE/ PENETRON /FOSROC/ MAPEI /ASIAN SMART CARE
20	Integral Waterproofing Admixture for Plaster / Screed / Mortar	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA/MC BAUCHEMIE (I) PVT. LTD./ MAPEI/ ASIAN SMART CARE / MCON/FERROUS CRETE
21	Expanded polystyrene sheet (EPS) and Extruded Polystyrene Insulation Board (XPS) / Dimple board / Drainboard	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA / MC BAUCHEMIE (I) PVT. LTD./ MAPEI/ ASIAN SMART CARE
22	Epoxy Coating : Food Grade Epoxy Coating for water Tanks / Non-Toxic Epoxy Coating for STP Tanks / Bituminous Epoxy Coating	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA/ MC BAUCHEMIE (I) PVT. LTD./MAPEI/ ASIAN SMART CARE

23	Epoxy Mortar/Bonding Agent/Grout/ Floor Hardener	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA/MC BAUCHEMIE (I) PVT. LTD./BOSTIK / MAPEI
24	All Types of Plyboards	MERINO / GREENPLY/CENTURY/ DURO / ROYAL TOUCHE / SAMRAT
25	Laminates	GREEMLAM/MERINOLAM/CENTURY / FORMICA / ROYAL TOUCHE
26	Veneer	GREEMLAM/MERINOLAM/CENTURY / DURO
27	Moisture Resistant HDF/MDF Board	ACTIONTESA/ GREENPLY/ MERINOLAM
28	SSMesh316GRADE	GKD METAL FABRICS / RAINOX / WMW
29	Flush door shutters	GREENPLY / DURO / MERINO / CENTURY / JAIN DOORS PVT. LTD.
30	Glass / Rock wool Insulation	UP TWIGA / VETROTEX / ROCK WOOL I. LTD / L LLOYDS
31	Polycarbonate Sheet	GE LEXAN / DANPALON / GALLINA / DPI DAYLIGHT (FLUX)
32	Decking Steel sheet	TATASTEEL /LLOYDS/JSW
33	Fire Sealant	HILTI/3MINDIA/FISCHER / SIKA
34	Poly-Sulphide Sealant / PU Sealants / Silicon Sealants /Acrylic Sealant /Solvent/Based Silicon repellent coatings.	PIDILITE / CICO TECHNOLOGIES / FOSROC / SIKA/MC BAUCHEMIE (I) PVT. LTD./ MAPEI/ MCON/ ASIAN SMART CARE / FERROUS CRETE
35	Wooden/Metal/Glazed-fire rated Door Shutters & Acoustic	NAVAIR/PROMAT/PACIFIC/SUKRITI/S HAKTI-HORMAN/BHAWANIFIRE/ GODREJ
36	UPVC Doors & Windows	NCLVEKA/ DUROPLAST /LG-HAUSYS/ MARG/ FENESTA/ ALUCRAFT/ RAJSHRI PLASTIWOOD
37	WPC Door / CNC Jali	KAKA / RAJSHRI / ECOSTA
38	Fire rated glass(2hours fire rating)	GLAVERBEL/SAINTGOBAIN/PYROGU ARD /SCHOTT/MODIGUARD/ ASAHI / NAVAIR
39	Cement Fiber Board	LAFARGE/INDIAGYPSUM/CENTURY/ NCL (BISON) / EVEREST
40	Waterproof Plywood/ Fire Retardant Ply / Block Boards	GREENPLY/MERINO/CENTURYPLY/D URO / EVEREST
41	All types of paint/primer, Water Proofing Cement Paint, Synthetic Enamel Paint,	ASIANPAINTS /DULUX/NEROLAC/ BERGER / BIRLA OPUS

42	Premium Acrylic Emulsion Paint, Exterior Emulsion, Melamine Polish	ASIANPAINTS /DULUX/NEROLAC/ BERGER / BIRLA OPUS
43	Polyester Powder Coating Shades	NEROLAC/BERGER/ DULUX
44	Cement based Wall Putty	BIRLA WHITE/JK WHITE/BERGER/ASIA NPAINTS/ DULUX
45	Synthetic Resin Adhesives	ANCHOR/DUNLOP/PIDILITE-FEVICOL
46	Textured Exterior Finish	ASIAN PAINTS / BERGER / DULUX / ULTRATECH/SPECTRUM
47	Epoxy Paint	DULUX /NEROLAC/ASIAN PAINTS / FOSROC / BERGER
48	Fire Retardant Paint	ASIANPAINT/BERGERPAINTS/JOTUN/ DULUX / NIPPON
49	Gypsum Plaster	ULTRATECH/ INDIAGYPSUM / GYPROC / USG KNAUF
50	Cement based Ready Mix Plaster	ULTRATECH/SAINT GOBAIN/ BERGER / BIRLA HIL
51	Pre-Cast GRC Jali	BIRLAGRC/ UNISTONE/KERAKROME GRC
52	Poly sulphide Sealant	FOSROC / SIKA / TUFFSEAL / PIDILITE / WACKER / DOW CORNING / MYK LATICRETE
53	Silicone/Weather Sealant	WACKER/DOWCORNING/GE/ BASF
54	Stainless Steel Grade 316	SALEMSTAINLESS /TATASTEEL / JINDAL
55	Welding Electrodes	ADVANI-OERLIKON/MODI
56	Dash/ Anchoring Fasteners	HILTI/FISHER/BOSCH/WURTHINDIA
57	Anodised Aluminium Hardware (Heavy Duty)	HARDIMA/ALUALPHA/PULSEOFLGF SYSMAC / HINDALCO / EVERITE
58	Aluminium Section for Window, Glazing	JINDAL/HINDALCO/NALCO/INDALCO
59	Modular (knock down) Stainless-Steel Railing, Accessories etc(Grade SS 316)	OZONE / DORMA / JINDAL/ KICH
60	Gypsum Board / Glass Reinforced Gypsum Tile for False Ceiling	SAINT GOBAIN / KNAUF / USG BORAL
61	Metallic False Ceiling	KNAUF / HUNTERDOUGLAS / SAINT GOBAIN
62	Acoustical Tile False ceiling	KNAUF/SAINTGOBAIN/ECOPHON/ ANUTONE / AEROLITE

63	Open Cell Ceiling System	HUNTER DOUGLAS / DURLUM India Pvt Ltd / KNAUF
64	Moisture Resistant Calcium silicate ceiling tiles/ Board	GYPROC / AEROLITE / USG BORAL / HILUX / KNAUF / EVEREST
65	Cement Fiber board	AMF/USGBORAL/LAFARGE/INDIAGY PSUM / CENTURY / NCL (BISON)
66	Glass Mosaic Tiles	BISAZZA/MRIDUL/OPIO/PALLADIO/IT ALIA GLASS / BIRLA
67	Rectified Ceramic Tiles(Antiskid/ Matt/Glazed)	KAJARIA/SOMANY/RAK / AGL / H & R JOHNSON
68	Vitrified Tiles (Double Charged / Glazed)	KAJARIA/SOMANY/RAK / AGL / H & R JOHNSON
69	PVC Flooring	ARMSTRONG/TARKETT/LGHAUSYS
70	Engineered stone-Marble/ Quartz	ASIAN/JOHNSON/KALINGA/ QUTONE / EURO
71	Adhesive / Tile Grout (for Tile / Stone)	BALENDURA/MYKLATICRETE/PIDILITE / MAPEI
72	Epoxy Flooring / PU Flooring	FOSROC/SIKA/CICO/ MYKLATICRETE/MAPEI/ASIAN SMART CARE
73	Heat Resistant Tiles(22mm)	THERMATEK / NATIONAL/THERMAX / DALAL TILE
74	Over deck foam Insulation	ASIANSMARTCARE/LLYODS/PIDILITE/ SOPREMA/MAPEI
75	C&D Waste Precast Elements (Kerb stones, Paver blocks, CC Blocks etc.)	6M CONCRETE / IL&FS& ANY OTHER GOVT. APPROVED AGENCY
76	Glazing Structural/ Suspended / Skylight/ clear/ float/ frosted/ mirror	SAINT GOBAIN / PILKINGTON / AGC GLAVERBEL / AIS/GOLD PLUS
77	Clear/Float/Frosted Glass/ Looking Mirror	SAINT GOBAIN / PILKINGTON / AGC GLAVERBEL / AIS /GOLD PLUS
78	Toughened Glass / Hermetically sealed glass / High Performance Glass	SAINT GOBAIN / PILKINGTON / AGC GLAVERBEL / AIS /GOLD PLUS
79	Nuts/Bolts & Screws (SS OR GI)	HILTI /ATUL/ WURTHINDIA/FISCHER
80	Clamp system for dry stone cladding	HILTI / FISCHER/BOSCH/ WURTH INDIA
81	All type of hardware and fittings for all type of glazing / doors/ windows etc. including mortise latch & lock, tower bolt, ball bearing butt hinges, friction stay hinges, sliding door bolts, lever handle, magic eye, door closer etc.	DORMA/HAFELE/GODREJ/HETTICH/ GEZE

82	Modular Toilet Cubicles	MERINO/GREENLAM /CUBICLES
83	Hardware for Fire Check Door/panicbar/ panictrim/door closer/ hinges/ mortise lock / Dead Lock etc.	DORMA / HAFELE / PROMAT / BECKER / GEZE / INGERSOLL RAND
84	EPDM Gasket	AMEE RUBER /OSAKA / BOHRA RUBBER
85	GI Pipes	JINDAL(HISAR)/TATASTEEL/SURYA PRAKASH / APL APOLLO TUBES
86	GI Fittings	UNIK/ZOLOTO/ SURYAPRAKASH
87	SS Pipes & fittings (316 Grade) -Water Supply	JINDAL LIFESTYLE / VIEGA / J PRESS / ALFA PRESS
88	DWCHDPE Pipes	RELIANCE/ PRINCE / JAIN PIPES / SUPREME
89	DI Pipes	ELECTROSTEEL (VEDANTA) / JINDAL / TATA DUCTURA
90	DI Fittings	ELECTROSTEEL (VEDANTA) / JINDAL / TATA DUCTURA / KESORAM
91	CI Double flanged sluice valve	KIRLOSKAR/SONDHI/KEJRIWAL
92	Float Valve	LEADER/ZOLOTO/ SANT
93	Hubless Centrifugally Cast (Spun) Iron Pipes & Fittings	NECO/SKF / RPMF
94	Centrifugally Cast(Spun)Iron (Class LA) Pipes	NECO/ELECTROSTEEL/TATA
95	CI Manhole covers, Frames& GI Gratings	NECO / SKF / RPMF
96	SFRC Manhole Covers& Gratings	KK / OCR / PARGATI / T-CON/NECO
97	Stone ware Pipes and Gully Traps	SONYA / SUPPERTECH / CHERRY
98	RCC Manhole covers & Frames	KKMANHOLE/GRATING CO.(P)LTD
99	Gun Metal Valves, Globes	ZOLOTO/ SANT/ LEADER
100	CP Fittings &Accessories (Premium range)	JAQUAR/KOHLER/ROCA / GROHE
101	CP Fittings & Accessories (Automation)	JAQUAR/KOHLER/ROCA / GROHE / EURONICS
102	Sanitary Vitreous Chinaware (Premium range)	JAQUAR/KOHLER/ROCA / GROHE
103	Water Meter	PRIMA/ ZOLOTO/LEADER/ CAPSTAN
104	Brass Stop & Bib Cock	ZOLOTO/ ANT/L&K/LEADER/ASTRAL
105	PVC/ CPVC Pipe &Fittings	ASHIRVAD / SUPREME/FINOLEX

106	Non-Return Valve (Check valve)and other kindof Valves	ZOOTO/SANT/LEADER
107	Brass Ferrules	ZOOTO/SANT/LEADER
108	Insulation for hot waterpipes	KAIFLEX/ARMAFLEX/CAREFLEX/LLOYD
109	Pipe protection for external water supply pipes	PYPKOTE/ARMAFLEX/MAKPOLYKOTE
110	Stainless Steel Sink	PRAYAG / NIRALI/CERA/ KINGSTON / JAYNA
111	RCC Pipes	LAKSHMI/SOOD&SOOD/JAIN&CO./PRAGATI CONCRETE
112	Dash/Stud/Anchor Fasteners	HILTI/CANON / BOSCH /FISCHER
113	Irrigation Equipment	JAINIRRIGATION/KISAN/FINOLEX/PLASSON
114	SMC Panel Water Tank	SINTEX/POLYCON / PLASTO / SUPREME
115	Modular Rainwater harvesting	RETAS WATER HARVESTING / ADWYN IMPEX PVT. LTD / LIFE GREEN SYSTEM / BANTAIR
116	Factory made Modular kitchen cabinets, wardrobes, dressing cabinet etc.	GODREJ, HAFFLE, SLEEK, ROCKWORTH.
117	Organic Waste Composter	ECOBOT /BIORECO/ EXCEL
118	Window Blinds	DECK/HUNTER DOUGLAS /VISTA /MAC/ MARVEL
119	Modular SS Grade316 Curtain Rods and Accessories	JINDAL/HAFELE/GEZE/Q-RAILING/MARK / TRESA
120	Wooden Flooring	ACTION TESA / KNAUF / GREENLAM / MIKASA
121	Aluminium Composite Panel	ALUDECOR / EUROBOND / DPI DAYLIGHT
122	Urinal Frosted Glass Partition-toughened	JAQUAR / GEREENLAM/MERINO/FUNDERMAX
123	Automatic Meter System Reading (Ultrasonic)	PELTEK / AVVA / DIEH AXIOMA/ BAYLAN/ GLOBAL
124	Automatic Meter Reading System (Electromagnetic)	SENSUS /XYLEM /HONEYWELL / ITRON
125	Aluminium Formwork	MIVAN, S-Form, MFS, MAIONI, ALFOAK
126	Chequered Tiles, Paver Block & Kerb Stone	SUPER TILES / VYARA / KAJARIA / NITCO / CONCRETO +

127	High Pressure Laminate	FORMICA / MERINO / GREENLAM
128	Stone polymer flooring / Carpet tiles	MILIKEN/MOHAWK/FLOTEX / WELSPUN
129	Single / Double Glazed Modular partition system & Stile / Glazed Doors	GEZE / DORMA / JEBB / OPTIMA / HAFELE
130	Modular Furniture Work	GODREJ/ FEATHERLITE /DURIAN / HAWORTH
130	Acrylic Polymer Solid board	HANEX/CORIAN
131	Frosted Film	3M / GARWARE

Note:-

- (a) Material bearing ISI mark and having BIS certifications shall only be used in the work, where articles of different designs/makes bearing ISI/BIS certifications are available.
- (b) Where material bearing ISI mark and having BIS certifications are not available, then material conforming to relevant BIS certifications shall be used with prior approval of Engineer-in-Charge. The decision of Engineer-in-Charge about the design/ make to be used in the work shall be final & binding on the agency.
- (c) If the brand or specifications of any item is not available, then the decision of the Tender accepting authority regarding quality shall be final & binding on the agency.

Schedule of Work

Name of Work : - Renovation of NABARD premises at 1st and 7th floor, Sterling Centre, Worli, Mumbai.

Item No.	Description	Qty	Unit	Rate	Amount
1	CARRIAGE OF MATERIALS				
1.1	By Mechanical Transport including loading, unloading and stacking				
1.1.1	Disposal of moorum/ building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead upto 10 km for all lifts, complete as per directions of Engineer-in-charge. Note - Item to be applicable in urban areas having directions for restricted hours for movement/ plying of load carrying motor vehicle of 3.5 cum or more.	214.00	cum	573.16	122656.00
	Total				122656.00
2	CEMENT CONCRETE				
2.1	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, uttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor etc., up to floor five level, excluding the cost of centering, shuttering and finishing:				
2.1.1	1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	10.00	cum	11478.43	114784.00
2.1.2	1:5:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources).	12.00	cum	9882.27	118587.00
2.2	Extra for concrete work in superstructure above floor V level for each four floors or part	5.00	cum	196.56	983.00

	thereof by mechanical means.				
	Total				234354.00
3	REINFORCED CEMENT CONCRETE				
3.1	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
3.1.1	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	7.00	cum	12589.42	88126.00
3.2	Centering and shuttering including strutting, propping etc. and removal of form for				
3.2.1	Lintels, beams, plinth beams, girders, bressumers and cantilevers	17.00	sqm	854.22	14522.00
3.3	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
3.3.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	560.00	kg	125.11	70062.00
	Total				172710.00
4	MASONRY WORK				
4.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 3.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
4.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	12.50	cum	10562.90	132036.00
4.2	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 3.5 in superstructure above plinth level up to floor V level.				
4.2.1	Cement mortar 1:4 (1 cement :4 coarse sand)	285.00	sqm	1303.61	371529.00

4.3	Providing and laying Autoclaved Aerated concrete(AAC) blocks masonry with 150 mm to 300 mm thick with Grade-1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	21.50	cum	9667.03	207841.00
	Total				711406.00
5	CLADDING WORK				
5.1	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing of edges to give high gloss finish etc. complete at all levels.				
5.1.1	Granite stone slab of colour black, Cherry/Ruby red				
5.1.1.1	Area of slab upto 0.50 sqnn	160.00	sqm	6279.66	1004746.00
5.1.1.2	Area of slab over 0.50 sqm	25.00	sqm	5958.11	148953.00
5.2	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.				
5.2.1	8 mm thick				
5.2.1.1	Granite of any colour and shade	150.00	sqm	4196.36	629454.00
5.3	Providing and fixing plywood 4 mm thick, one side decorative veneer conforming to IS: 1328 (type-1), for plain lining / cladding with necessary screws,				

	including priming coat on unexposed surface with :				
5.3.1	Decorative veneer facings of approved manufacture	180.00	sqm	2257.65	406377.00
5.4	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3(1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	200.00	sqm	1470.82	294164.00
	Total				2483694.00
6	WOOD AND P. V. C. WORK				
6.1	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
6.1.1	Second class teak wood	1.00	cum	165821.65	165822.00
6.2	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:				
6.2.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	26.50	sqm	2775.47	73550.00
6.3	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	31.50	sqm	536.33	16894.00

6.4	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
6.4.1	1.5 mm thick.	350.00	sqm	1213.30	424655.00
6.4.2	1.0 mm thick.	350.00	sqm	1040.87	364305.00
6.5	Providing and fixing factory made uPVC glazed/wire mesh windows/ doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD Specification, uPVC extruded glazing beads, interlocks and inline sash adaptor (where ever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc.				

	After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge. Wire mesh / Glazing of plain/ toughened/ laminated/ double glass unit with / without high performance coatings as per design requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately. Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for (i) Sites with basic wind speed > 45 m/sec as per IS 875 — Part 3 (ii) Sites with structure height more than 20m for all wind speeds				
6.5.1	Two track two panels sliding window with Aluminium channel for roller track, wool pile, nylon rollers with SS 304 body.				
6.5.1.1	Using R2 series with frame (40mm & above) x (40mm & above) & sash (25mm & above) x (50mm & above) with zinc alloy (zamak) powder coated touch locks with hook (Height upto 1.2 meter)	102.00	sqm	9626.67	981920.00
6.5.2	Casement window single panel with S.S. 304 friction hinges as per size and weight of sash, multi-point locking system, zinc alloy (zamak) powder coated handles.				
6.5.2.1	Using R2 series with frame (39mm & above) x (39mm & above) & sash (39mm & above) x (60mm & above). (Height upto 1.2 meter)	55.00	sqm	16761.13	921862.00

6.6	Providing and fixing cupboard shutter with 19 mm thick one side decorative and other side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand including 2 mm thick PVC edge banding tape with hot glue by edge bending machine etc. with auto closing spring loaded hinges (hydraulic type) etc. complete as per direction of Engineer-in-charge. (Payment of providing and fixing auto closing hinges shall be paid separately)	200.00	sqm	3281.93	656386.00
6.7	Providing and fixing 19 mm thick both side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brand boxes, shelves, racks, almirah, cupboard and drawer etc. including necessary nails, screws etc. complete as per direction of Engineer-in-charge.	125.00	sqm	3008.05	376006.00
	Total				3981400.00
7	FLOORING				
7.1	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	18.00	Sqm	1542.80	27770.00
7.2	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm with up to 3mm thick spacer i/c grouting the joints with				

	white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, levelling system and rubber mallet for placing the tiles gently and easily.				
7.2.1	Double charge vitrified tile polished finish of size				
7.2.1.1	Size of Tile 800 x 800 mm	500.00	sqm	1780.43	890215.00
7.2.1.2	Size of Tile 800 x 1600 mm	500.00	sqm	2169.49	1084745.00
7.2.2	Glazed Vitrified tiles Matt/Antiskid finish of size				
7.2.2.1	Size of Tile 600 x 600 mm	575.00	sqm	1699.23	977057.00
7.3	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge:				
7.3.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent	30.00	sqm	3696.57	110897.00
	Total				3090684.00
8	ROOFING				
8.1	Providing and fixing false ceiling at all heights including providing and fixing of frame work made of special sections, power pressed				

from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for				
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	light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with:				
8.1.1	12.5 mm thick tapered edge gypsum moisture resistant board	1232.00	sqm	1773.76	2185272.00
8.2	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc.				
	Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom				

	exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.				
8.2.1	GI Metal Ceiling Lay in perforated Tegular edge global white color tiles of size 595x595 mm and 0.5 mm thick with 8 mm drop; made of GI sheet having galvanizing of 100 gms/sqm (both sides inclusive) and 20% perforation area with 1.8 mm dia holes and having NRC (Noise Reduction Coefficient) of 0.5, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation and backed with a black Glass fiber acoustical fleece.	85.00	sqm	2399.75	203979.00
	Total				2389251.00
9	FINISHING				
9.1	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
9.1.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	723.50	sqm	198.48	143600.00
9.2	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	2300.00	sqm	181.02	416346.00
9.3	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour.				
9.3.1	Two coats	2700.00	sqm	165.65	447255.00

9.4	Removing dry or oil bound distemper, water proofing cement paint and the like by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	1022.00	sqm	29.17	29812.00
9.5	Melamine polishing on wood work (one or more coat).	180.50	sqm	160.20	28916.00
	Total				1065929.00
10	REPAIR TO BUILDING				
10.1	Dismantling W.C. Pan of all sizes including disposal of dismantled materials i/c malba all complete as per directions of Engineer-in-Charge.	14.00	each	155.56	2178.00
10.2	Dismantling 15 to 40 mm dia G.I. pipe including stacking of dismantled pipes (within 50 metres lead) as per direction of Engineer in-Charge. (a) Internal Work- Exposed on wall	100.00	metre	3.77	377.00
	Total				2555.00
11	DISMANTLING AND DEMOLISHING				
11.1	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
11.1.1	In cement mortar	25.00	cum	2389.83	59746.00
11.2	Dismantling doors, windows and clerestory windows (steel or wood) shutter including chow khats, architrave, holdfasts etc. complete and stacking within 50 metres lead:				
11.2.1	Of area 3 sq. metres and below	4.00	each	425.95	1704.00
11.3	Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead:				
11.3.1	Of area 3 sq. metres and below	20.00	each	166.46	3329.00
11.4	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
11.4.1	For thickness of tiles 10 mm to 50 mm	1000.00	sqm	85.14	85140.00

11.5	Dismantling wooden boardings in lining of walls and partitions, excluding supporting members but including stacking within 50 metres lead:				
11.5.1	Thickness above 25 mm up to 40 mm	54.00	sqm	104.81	5660.00
11.6	Dismantling C.I. or asbestos rain water pipe with fittings and clamps including stacking the material within 50 metres lead:				
11.6.1	75 to 80 mm dia pipe.	30.00	metre	87.81	2634.00
11.6.1.2	100 mm dia pipe	20.00	metre	90.48	1810.00
11.7	Dismantling of flushing cistern of all types (C.I./PVC/Vitrious China) including stacking of useful materials near the site and disposal of unserviceable materials within 50 metres lead.	14.00	each	129.98	1820.00
11.8	Dismantling old plaster or skirting raking out joints and cleaning the surface for plaster including disposal of rubbish to the dumping ground within 50 metres lead.	140.00	sqm	63.39	8875.00
11.9	Dismantling aluminium/ Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of unserviceable material and stacking of serviceable material within 50 meters lead as directed by Engineerin- charge.	185.00	sqm	65.37	12093.00
	Total				182811.00
12	SANITARY INSTALLATIONS				
12.1	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless-steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required:				
12.1.1	Kitchen sink with drain board				
12.1.1.1	510x1040 mm bowl depth 250 mm	2.00	each	8056.90	16114.00
12.2	Providing and fixing soil, waste and vent pipes:				
12.2.1	100 mm dia.				
12.2.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	72.00	metre	1356.39	97660.00
12.2.2	75 mm dia.				

12.2.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	35.00	metre	1118.53	39149.00
12.3	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
12.3.1	100 mm dia				
12.3.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	10.00	each	657.95	6580.00
12.4	Providing and fixing plain bend of required degree.				
12.4.1	100 mm dia				
12.4.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	6.00	each	426.88	2561.00
12.4.2	75 mm dia				
12.4.2.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	10	each	294.06	2941.00
12.5	Providing and fixing double equal plain invert branch of required degree:				
12.5.1	100x100x100x100 mm				
12.5.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	10	each	1276.41	12764.00
12.6	Providing and fixing single equal plain invert branch of required degree:				
12.6.1	100x100x100 mm				
12.6.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	10.00	each	748.72	7487.00
12.7	Providing and fixing single unequal plain invert branch of required degree:				
12.7.1	100x100x75 mm				
12.7.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	6.00	each	763.57	4581.00
12.8	Providing and fixing shielded coupling for Hubless centrifugally cast-iron pipe				
12.8.1	100 mm dia				
12.8.1.1	SS 304 grade coupling with EPDM rubber gasket	114.00	each	501.18	57135.00
12.8.2	75 mm dia				
12.8.2.1	SS 304 grade coupling with EPDM rubber gasket	49.00	each	501.18	24558.00

12.9	Providing and fixing trap of self-cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :				
12.9.1	100 mm inlet and 75 mm outlet				
12.9.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside as per IS:15905	23.00	each	686.02	15778.00
	Total				287308.00
13	WATER SUPPLY				
13.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold-water supply, including all CPVC plain & brass threaded fittings and fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.				
13.1.1	15 mm nominal dia Pipes	87.50	metre	577.45	50527.00
13.1.2	20 mm nominal dia Pipes	100.00	metre	623.62	62362.00
13.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold-water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.: Internal work - Exposed on wall				
13.2.1	32 mm nominal dia Pipes	92.50	metre	601.75	55662.00
13.2.1.1	50 mm nominal dia Pipes	54.00	metre	1083.61	58515.00
13.3	Providing and fixing uplasticised PVC connection pipe with brass unions:				
13.3.1	45 cm length				

13.3.1.1	15 mm nominal bore	36.00	each	113.39	4082.00
13.4	Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI: 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet & over flow pipes. The base support Including fittings & fixtures for tank shall be paid separately.	3700.00	per litre	12.76	47212.00
	Total				278360.00
14	ALUMINIUM WORK				
14.1	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows, ventilators and partitions with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS: 1285, fixed with dash fastener of required dia and size.	1650.00	kg	467.25	770963.00
	Total				770963.00
15	WATER PROOFING				
15.1	Providing and laying integral cement-based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment.				

	(b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs. (c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge.				
	(d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep.				
	(e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. "All above operations to be done in order and as directed and specified by the Engineer-in-Charge":				
15.1.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	600.00	sqm	1954.14	1172484.00
15.2	Grading roof for water proofing treatment with				

15.2.1	Cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)	12.00	cum	9329.07	111949.00
	Total				1284433.00
16	NEW TECHNOLOGIES AND MATERIALS				
16.1	Providing and fixing false ceiling at all heights with integral densified calcium silicate reinforced with fibre and natural filler false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non-combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 &7), humidity resistance of 100%, thermal conductivity < 0.043 W/m K as per ASTM 518:1991, nin true horizontal level suspended on inter-locking metal powder coated T-Grid of hot dipped galvanised iron section of 0.40 mm thick on Silhouette profile, rotary stitched double webbed white with 6 mm reveal profile (white/ black),comprising of main-T runners of size 15x42 mm of length 3000 mm, cross - T of size 15x42 mm of length 1200 mm and secondary intermediate cross-T of size 15x42 mm of length 600 mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanised mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod upto 1000 mm length and L-shape level adjuster of size 85x25x2 mm. Galvanised iron perimeter wall angle of size 22x19x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm center to center and 40 mm long dry wall S.S screws. The				

	work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.				
16.1.1	With 15 mm thick integral densified micro edge light weight calcium silicate false ceiling tiles	425.00	sqm	3051.26	1296786.00
16.2	Chipping of unsound/weak concrete material from slabs, beams, columns etc. with manual Chisel and/ or by standard power-driven percussion type or of approved make including tapering of all edges, making square shoulders of cavities including cleaning the exposed concrete surface and reinforcement with wire brushes etc. and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge				
16.2.1	25 mm average thickness	125.00	sqm	147.03	18379.00
16.3	Cleaning of reinforcement from rust from the reinforcing bars to give it a total rust-free steel surface by using alkaline chemical rust remover of approved make with paint brush and removing loose particles after 24 hours of its application with wire brush and thoroughly washing with water and allowing it to dry, all complete as per direction of Engineer-In-Charge.				
16.3.1	Bars upto 12 mm diameter	700.00	metre	9.57	6699.00
16.4	Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC as per specifications and direction of Engineer- In-charge complete in all respect.				
16.4.1	SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer	125.00	sqm	163.79	20474.00

16.5	Providing, mixing and applying SBR polymer (of approved make) modified Cement mortar in proportion of 1:4 (1 cement: 4 graded coarse sand with polymer minimum 2% by wt. of cement used) as per specifications and directions of Engineer-in-charge. Note: Measurement and payment: The pre-measurement of thickness shall be done just after the surface preparation is completed and Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding / tapping with a blunt metal instrument and/or the 75 mm size cube crushing strength at the end of 28 days to be not less than 30 N/Sqmm ²).				
16.5.1	25 mm average thickness in 2 layers.	125.00	sqm	681.33	85166.00
16.6	Providing and injecting approved grout in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. (The payment shall be made on the basis of actual weight of approved grout injected.)				
16.6.1	Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work.	60.00	kg	143.84	8630.00
16.7	Providing and inserting 12 mm dia galvanised steel injection nipple in honey comb area and along crack line including drilling of holes of required diameter (20 mm to 30 mm) up to depth from 30 mm to 80 mm at required spacing and making the hole & crack dust free by blowing compressed air, sealing the distance between injection nipple with adhesive chemical(Water proofing chemical + Cement slurry) of	500.00	each	274.80	137400.00

	approved make and allow it to cure complete as per direction of Engineer- In-Charge.				
16.8	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid board one side white color and other side of board laminated with PVC foil of minimum 14 micron thickness of approved design pasted with hot melt adhesive for cup boards, work stations and bathroom/ kitchen cabinet etc. of required sizes comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and nontoxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm², modulus of elasticity 850 N/mm² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel piano hinges/soft close clip on concealed hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel piano hinges/soft close clip-on concealed hinges and necessary S.S screws shall be paid separately)				
16.8.1	25 mm thick	41.00	sqm	4511.41	184968.00

16.9	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain white color board for backing of cup boards and bathroom/kitchen cabinets etc. of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and nontoxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm ² , modulus of elasticity 850 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel screws etc. all as per direction of Engineer-In-Charge. (Note: stainless steel screws shall be paid separately)				
16.9.1	6 mm thick	180.00	sqm	1275.25	229545.00
16.9.2	12 mm thick	130.50	sqm	1984.88	259027.00
16.10	Providing and fixing hermetically sealed double glazing unit in windows, ventilators and partition etc. consisting of float glass 6 mm thick substrate with reflective coating on face #2 (outer side), + 12 mm Airgap + 6 mm Clear Glass (inner side), both glass fully toughened of approved make and including EPDM gasket perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.				

16.10.1	Float glass 6 mm thick substrate with reflective coating of face #2 (outer side), + 12 mm mm Airgap + 6 mm Clear Glass (inner side), both glass fully toughened of approved make having properties at visible light transmittance (VLT) of 30 - 45%, Solar Heat Gain Coefficient of not more than 0.25 and U valyue of not more than 3 W/m2 degree K etc. for non-north having latitude < 15 degree and for all climate zone except cold climate, refer ECBC - 23017 for climate zone classification.	148.00	sqm	6183.50	915158.00
	Total				3162232.00
	DSR Total				20220746.00
	The cost after using Correction Factor on items of the DSR 2023 on account of applicability of GST @ 0.973 as per O.M dated 08.08.2024.				19674786.00
				Total A	19674786.00
17	NON-SCHEDULE ITEMS				
17.1	Providing and applying 12 mm thick (average) premixed formulated one coat readymade plaster of approved brand and manufacturer having additives and aggregates produced at automated dry mix plant and mixed with cement in cement mortar and polymers applied on hacked / uneven background such as bare brick / C.C, and block / RCC work on walls & ceiling at all floors and locations as per manufactures specification finished in smooth line and level etc. complete.	150.00	sqm	467.25	70088.00
17.2	Providing and applying 15 mm thick (average) premixed formulated one coat readymade plaster of approved brand and manufacturer having additives and aggregates produced at automated dry mix plant and mixed with cement in cement mortar and polymers applied on hacked / uneven background such as bare brick / C.C, and block / RCC work on walls & ceiling at all floors and locations as per manufactures	150.00	sqm	552.75	82913.00

	specification finished in smooth line and level etc. complete.				
17.3	Providing and applying 18 mm thick (average) premixed formulated one coat readymade plaster of approved brand and manufacturer having additives and aggregates produced at automated dry mix plant and mixed with cement in cement mortar and polymers in two layers under layer 12 mm and top layer 6 mm thick applied on hacked / uneven background such as bare brick / C.C. and block / RCC work on walls & ceiling at all floors and locations as per manufactures specification finished in smooth line and level etc. complete.	150.00	sqm	702.70	105405.00
17.4	Providing and laying water proofing coating on the sunken portion of the WCs, bathroom, etc. by applying single component liquid polyurethane elastomeric compound with minimum elongation 400% (ASTM D 412) having tensile strength minimum 2 MPa (ASTM D 412) and minimum solid content 80% (ASTM C 1250) as below mentioned process : i) Preparation of base concrete surface and crack treatment, creating smooth corners by making of fillet at the corners of size 50mm x 50mm with epoxy mortar, ii) Applying of epoxy based primer of approved brand applied on the prepared concrete surface having moisture content less than 5% iii) Applying single component liquid polyurethane (PU) elastomeric compound to achieve Dry Film Thickness (DFT) of 1.5 mm in two or three coats iv) Providing and laying of Non-woven Polyester / Polypropylene needle punched thermally bonded Geotextile of 150 GSM on the completed and cured surface, (over the horizontal, vertical surfaces and	108.00	sqm	1078.10	116435

	over the gola), the geotextile should stick to the PU membrane without any gaps and may be held in place with adhesive if required. v) 50mm thick protection screed concrete over horizontal surface to the required slope is to be provided with gola (fillet) at edges of size 50x50mm which shall be paid separately in CC 1:2:4 (1 Cement: 2 M-sand: 4 Coarse aggregate), vi) Premix plaster of 18mm thickness over vertical surfaces and terminated over the screed concrete shall be paid separately. The rate shall include all material, labour & machinery and nothing extra shall be payable, unless otherwise mentioned above. The work shall be carried out as per PU manufacturer and directions of Engineer in charge.				
17.5	Providing & fixing 12mm thick Fire-retardant plywood as per IS-5509:2021 with ECO certificate of approved brand including suitable full treaded SS screw for partition work fixed over aluminium/Steel /wood extruded section frame work/work station/cupboard etc with stainless steel screws @ 60cm centre to centre on frame as directed by Engineer in Charge (aluminium/ Steel/ wood work will be paid separately)	750.00	sqm	1580.00	1185000.00
17.6	Providing, supply and laying of 5+1 mm thick KCLICK-Lock tiles with wear layer is of 0.5 mm having AC 6 scratch resistant property made up of Stone Polymer composite, Has core layer thickness of 5 mm as per ENISO2436 (EN428) and has an IXPE Cushion backing of 1 mm as per EN ISO 2436 (EN 428) ,100% Water & Termite proof, Wear Layer Thickness as per EN ISO 24340 (EN 429), Scratch resistance as per Castor Chair standards EN ISO 4918(EN 425) / Resistance to Fire as per EN 13501-1 / UV resistant, Impact	213.00	sqm	2859.45	609063.00

	Sound Reduction as per EN ISO 140-8 EN ISO 717/2, Light Fastness as per EN ISO 105-B02, Resistance to Chemical as per EN ISO 26987 (EN 423), a Recyclable Green product having LINC & LOCK click system with suitable skirting. Classification of abrasion resistance (Rubbing action of two abrading wheels of S42 Type, load Applied 500 grams, No. of Cycles 4,200). Design as approved by the Engineer-in-Charge” (including T-Profile, foam 2mm thick and skirting for which nothing shall be paid extra)				
17.7	Providing and Laying tile form Made in INDIA - CRI Green Label Plus 100% NYLON highly resilient TYPE - 6+ fiber Solution Dyed of size 25 x 100 cm or 50 cm x 50 cm per tile having total tufted weight of 18 oz with a density of 5200-5500. The carpet should have a minimum pile thickness of minimum 3.5 mm and a total thickness of 5.5mm (+/-0.5mm). The carpet tile should have minimum SPI of 10 and should be supplied with PVC backing. Carpet tiles shall be complied with Flammability Test ASTM E648, Methenamine Pill Test ASTM D2859, Smoke Density Test ASTM E662, and Appearance Retention Hexapod test ASTM D5252. The laying of carpet shall be done with standard SR 998/SR505/MAPAI Adhesives. The carpet to be installed as per the manufacture's specification and to be installed by its authorized agency or as Approved.	213.00	sqm	2415.45	514491.00
17.8	Providing & Fixing Single Glazed Modular System GD - 45S of approved make sizes of section 30x45 and 2 mm thickness and required accessories i.e. glass to glass aluminium I/H sections, T section & 90-degree L sections & Glass packing to adjust the floor	528.50	sqm	5243.50	2771190.00

	level. Ceiling profile, Floor profile and wall profile are 30 mm visible face and 45 mm wide All sections of Aluminium are 6063-T6 grade (Virgin aluminium) duly anodised up to 20-25 microns of approved shade with 10mm Clear toughened glass & insertion of Thermoplastic gasket to adhere the glass firm & airtight. The sound reduction Value is from 32 to 35 Db etc complete as per the direction of engineer in charge.				
17.9	Providing and fixing Single Leaf Stile Door System of required size and pattern with profile dimension 40 mm width and visible surface of size 75 mm of 2 mm thickness size of 75x40 with door profile GD-75T ie. 6063-T6 Virgin grade duly Anodized Aluminium Door Sections having sizes of 75x30x1.5mm thick, 10 mm toughened Glass including Concealed Door Closer, 4 nos Flush Hinges, SS Offset D type Pull Handle 25 x 450 mm with narrow Stile mortise Dead lock, Door Seal & Gaskets. The sound reduction Value is from 32 to 35 Db etc complete as per the direction of engineer in charge.	110.00	sqm	26765.50	2944205.00
17.10	Providing and fixing Double Leaf Stile Door System of required size and pattern with profile dimension 40 mm width and visible surface of size 75 mm of 2 mm thickness size of 75x40 with door profile GD-75T ie. 6063-T6 Virgin grade duly Anodized Aluminium Door Sections having sizes of 75x30x1.5mm thick, 10 mm toughened Glass including Concealed Door Closer, 8 nos Flush Hinges, SS Offset D type Pull Handle 25 x 450 mm with narrow Stile mortise Dead lock, Door Seal & Gaskets. The sound reduction Value is from 32 to 35 Db etc complete as per the direction of engineer in charge.	16.00	sqm	23505.00	376080.00

17.11	Providing and fixing Single Leaf Framless Door System of required size, 10 mm toughened Glass including hinge half round shape with cover in anodized, Overhead door closer glass mounting plate for 10mm toughened glasss, stainless steel 304 half-moon door stop, lever handle with lockset satin finish; dia.44x25(H)mm 3 pins both side key 42.8mm length 20.8mm+12mm, etc complete as per the direction of engineer in charge.	45.00	sqm	20415.00	918675.00
17.12	Providing & Fixing 10 mm thick Toughened Curved shaped frosted urinal glass partition of Size H-900 mm x W-450 mm of approved brand with Fittings etc Complete as per direction of Engineer-in-charge	10.00	sqm	5587.00	55870.00
17.13	Supplying and Installation of lever handle and sash lock of approved make of lever handle: Pure 8100 Lever Handle with 6501 Roses,6612 Escutcheons, 8mm Spindle with Fixing Screws for door thickness 35-55mm , SS 304 , Finish : Satin - 1 nos Model no. of lock:271a Sash Lock Back set - 55mm, Centre to Centre - 72mm, 20mm Square For end, Strike plate, SS 304, Finish : SSS EPC TTK Key L-70mm, SNP - 1 Nos etc. all complete as per direction of Engineer-in-charge	39.00	each	6291.00	245349.00
17.14	Automatic Sliding Door for Main Entrance - Automatic Sliding Door: Providing and fixing Automatic Sliding door operator, compliant with future European standards and produced according to the guidelines for power-operated doors. TÜV design tested for durability of 1 million Cycles, tested according to the low voltage guidelines, fulfils DIN 18650 standards, for frameless glass door application with modular design including internal cover and with 12mm thick clear FT glass for 2 Nos sliding door panels. Operator Finish should be				

	Silver Anodized E6/C0, with operator dimensions (H x D): 100 x 180 mm and of length as required to suit the opening size given below. Operators are of very sturdy design with Self balancing Panel suspension system and with Anti-Jump fitting. The track profile should be separate from the main profile for enabling reduction in vibration insulation, With back plate for easy Installation.				
	Microprocessor-controlled control unit, Self-learning, with adjustable parameters for opening and closing speed, hold-open time and opening and closing force, reversing when obstruction is encountered, with SMPS, Class of protection IP 20. Activators- 6 Safe Combination Radars System (02 Nos) on Inside & Outside with Electro-mechanical locking, Bistable, Program Switch with Key. The system shall have constant power supply 230V+ 5%, 50Hz, AC. Size- 2000mm x 2700mm as direction of Engineer-in-charge	10.00	sqm	85546.15	855462.00
17.15	Supplying and Installation of 5 Knuckle, 2 Ball Bearing Butt Hinges 4"x 3"x 3 mm. Grade SS 304, Finish: SS of approved make etc all complete as per direction of Engineer-in-charge	200.00	each	431.00	86200.00
17.16	Supplying and Installation of approved make Stainless Steel Grade 304 Tubular Lever Handle. Finish: Satin Stainless Steel of approved make etc all complete as per direction of Engineer-in-charge	86.00	each	1519.00	130634.00
17.17	Supplying and Installation of Sash Lock Forend Width - 20 mm, Backset - 55 mm, CTC - 72 mm. Forend, Finish - Satin stainless Steel of approved make etc all complete as per direction of Engineer-in-charge	50.00	each	939.50	46975.00

17.18	Supplying and Installation of Euro Profile Cylinder (EPC) 5 pin EPC one side knob and other side key No. of keys – 3, Finish: Satin Nickel Plated, Length = 70 mm of approved make etc all complete as per direction of Engineer-in-charge	50.00	each	825.65	41283.00
17.19	Supplying and Installation of Door Closer Concealed EN 4 with Hold Open Unit, Finish - Silver, Width of Door - 1100 mm, Weight of Door - 80 Kgs, Min. Thickness of Door - 40 mm of approved make etc all complete as per direction of Engineer-in-charge	17.00	each	11075.40	188282.00
17.20	Supplying and Installation of H Type Pull Handle Length - 600 mm, CTC - 500 mm, Dia - 32 mm Grade SS 304, Finish Satin Stainless steel of approved make etc all complete as per direction of Engineer-in-charge	8.00	each	1519.20	12154.00
17.21	Supplying and Installation of Dead Lock Forend Width - 20 mm, Backset - 55 mm. Forend Finish - Satin stainless Steel of approved make etc all complete as per direction of Engineer-in-charge	30.00	each	939.50	28185.00
17.22	Providing & fixing 30-35 micron (minimum) thick of approved make non reflective, matt, frosted / horizontal strip, scratch resistant, high-performance resin coated polyster film on the glass surfaces of partitions, door shutters etc. complete as per direction of Engineer-in-charge. (Payment shall be made for the finished area of the film actually provided. No deduction shall be made for openings up to 0.10 sqm area each and nothing shall be paid extra for making such openings)	350.00	sqm	1213.97	424890.00

17.23	Providing & fixing 30-35 micron (minimum) thick of approved make non reflective high-performance resin coated customised colour Graphics polyster film by means of laser cutting on the glass surface of partitions, door shutters etc. complete as per direction of Engineer-in-charge. (Payment shall be made for the finished area of the film actually provided. No deduction shall be made for openings up to 0.10 sqm area each and nothing shall be paid extra for making such openings)	235.00	sqm	1550.00	364250.00
17.24	Providing and Fixing Channelled Woodworks perforated panels of approved make of width 192mm, thickness of 15mm and length 2400 mm, made of a Moisture resistant fibre board substrate with a laminated facing as per the approved shade (Portland Maple, Sea Beech, Siam Wood & Mystique Walnut, Interior White, Alumina Pearl) and a melamine balancing layer on the reverse side. The boards shall have a special perforation pattern where the reverse surface has a “Helmholtz” fluted perforation with consecutive 3mm wide groove followed by 13mm of visible pane. The edges of the panel shall be “tongue-and-grooved” to fix special clips for installation and seamless visual. The back of the perforated panel shall have sound absorbing non-woven Sound tex acoustical fleece hot pressed to achieve NRC of 0.6. (Average value of Absorption Co-efficient readings taken at 250 Hz, 500 Hz, 1000 Hz and 2000 Hz) as per ASTM C423 and Humidity Resistance (RH) of 70% with camber limit less than 1mm/1000mm and bow less than 1mm/300mm. The panels shall be mounted on special aluminium splines (keel) using inside clips provided by Providing and Laying tile form Made in INDIA -	65.00	sqm	5743.06	373299.00

	CRI Green Label Plus 100% NYLON highly resilient TYPE - 6+ fiber Solution Dyed of size 25 x 100 cm or 50 cm x 50 cm per tile having total tufted weight of 18 oz with a density of 5200-5500 . The carpet should have a minimum pile thickness of minimum 3.5 mm and a total thickness of 5.5mm (+/-0.5mm). The carpet tile should have minimum SPI of 10 and should be supplied with PVC backing. Carpet tiles shall be complied with Flammability Test ASTM E648, Methenamine Pill Test ASTM D2859, Smoke Density Test ASTM E662, and Appearance Retention Hexapod test ASTM D5252. The laying of carpet shall be done with standard SR 998/SR505/MAPAI Adhesives. The carpet to be installed as per the manufacture's specification and to be installed by its authorized agency or as Approved. Approved Brands Milliken/ Mohawk/ Flotex & Welspun and approved by the Architect/ Engineer-in-Charge.				
17.25	Providing and fixing 12 mm acrylic polymer solid surface of approved shade and make sheet thick composed of 1/3rd. acrylic resin also known as Polymethyl methacrylate or PMMA and 2/3rd. natural minerals of approved brand manufacturer and of approved shade & shape and as per architectural drawing over the furniture top Plywood/ granite /marble /wash basin counters with adhesive like araldite or equivalent, jointing the edges with appropriate glue of the same material to form a homogeneous joint, rounding and finishing the edges wherever required etc. complete as per the direction of the Engineer-in-charge. (One side of the actual area of the sheet provided shall be measured for payment purpose.)	50.00	sqm	12528.00	626400.00

17.26	Supplying and fixing Zebra blind with light solid black out property or as per requirement made up of 0.5 mm thick fabric and weighing 197 gsm/sqm to 224 gsm/sqm, 100% polyester fabrics with horizontal segments alternating between sheer and solid fabric. Wide opacity on colours/shades / made of dual layers parallel to each other. The sheer band of fabric is aligned each other parallel a blurred view through will be possible, light filters through the sheer fabrics. The opaque band of fabric is aligned each other parallel, light is defused for light filtering shades, for room darkening the shades light is blocked and the view through is blocked. Light filters through the sheer fabric when the shade is partially raised or lowered. Fabric shall be excellent UV protection, insulation and energy and air stain dust resistant. Luxurious metal hardware provides multilevel light control and multilevel privacy control. The fabric shall be manually rolled/adjusted vertically through roller such that it can be opened for soft view, closed for complete privacy or adjusted for flexible light control. with				
	TOP CASSETE SECTION: - Cassete type having weight of 0.800kg/mtr apporx and wall thickness 1mm with powder coating and in front side same fabric should be fixed. Cassete End cap: Plastic type with Brand symbol. Section for Fabric holding: - Aluminium round pipe having dia of 39mm and pipe wall thickness should be minimum 1 mm having weight of 0.328 kg/mtr. Section for bottom: - Aluminium round having dia of 14mm with 1.2mm wall thickness and weight should be 0.220kg/mtr with triangle type exterior bottom having minimum weight of 0.260 kg/mtr and size: 15.6x 28.8mm	185.00	sqm	2108.86	390139.00

	with plastic end cap with powder coating. Specification for fabric type: 100% polyester with combination of solid and net. Fabric colour: as per selection. Solid part: - 100mm to 115 mm net part: - 70mm to 75mm. Blackout Ration: - Room darkening (90%)				
17.27	Providing and fixing Anodised Aluminium of approved shade adjustable louver with 4.0 mm thick frosted glass of required length and width and necessary locking arrangement of approved quality fixed with necessary screws, etc. complete and as per directed by Engineer -in - charge. (Cost of aluminium frame shall be paid separately.)	7.00	sqm	1727.73	12094.00
17.28	Providing and fixing white vitreous china rimless wall Hung W/C with UF soft close seat cover. Accessories Set, Size: 370x510X360 mm of approved brand with FLUSH system concealed body of 32 mm size and Exposed Part Kit of Flush with Dual Flush Push Button Actuation & control stop cock Control Plate of approved brand with S-type drain pipe connection set etc complete as per direction of Engineer in charge.	16.00	each	21044.50	336712.00
17.29	Providing and fixing white vitreous china Table top wash basin of with fixing Accessories shape of size 600x440x165 mm of approved brand with Click Clack Waste coupling of 32 mm Size 130 mm Height Half Thread and Pillar Cock with 190mm Extension Body as per direction of Engineer in charge.	20.00	each	10306.50	206130.00
17.30	Providing and fixing Urinal (Back Inlet) of size 385x325x635 mm of approved make with 32 mm Size 80 mm Height full Thread Click Clack Waste coupling and auto	9.00	each	11713.56	105422.00

	closing urinal flush valve with wall flange as per direction of Engineer in charge.				
17.31	Providing and fixing 40mm dia PVC rigid pipe including clamps for waste line for wash basin. etc complete as per direction of Engineer-in-charge.	70.00	metre	98.30	6881.00
17.32	Providing and fixing C.P. brass 2-way bib cock with wall flange as per approved make list etc complete as per direction of Engineer-in-charge.	15.00	each	2353.50	35303.00
17.33	Providing and fixing C.P. brass angular stop cock with wall flange as per approved make list etc. complete as per direction of Engineer-in-charge.	31.00	each	1451.50	44997.00
17.34	Providing and fixing Hand Shower (Health Faucet) (ABS Body) with 8mm Dia, 1-Meter-Long body Flexible Tube & Wall Hook with N.R.V (Back Flow Preventer) as per approved make list. etc complete as per direction of Engineer-in-charge.	16.00	each	1517.50	24280.00
17.35	Providing and fixing of Toilet Roll Holder with Flap as per approved make list. etc complete as per direction of Engineer-in-charge.	16.00	each	1887.00	30192.00
16.36	Providing and fixing of Soap Dispenser with Glass Bottle of approved make etc complete as per direction of Engineer in charge.	20.00	each	1322.50	26450.00
16.37	Providing and fixing Stainless steel Towel Ring Square with Round Flange size 210 mm long of approved brand etc complete as per direction of Engineer in charge.	20.00	each	1261.50	25230.00
17.38	Providing and fixing CP Brass 32mm size Bottle Trap (with internal partition) Size with 300mm& 190mm long wall connection pipes & wall flange also available of approved brand etc complete as per direction of Engineer in charge.	20.00	each	1745.00	34900.00

17.39	Providing and fixing 6 mm thick looking mirror of approved brand with chamfered/rounded edge finish (soft Finish) with 6 mm WPC backing and fixed with Studs etc complete as per direction of engineer in charge.	20.00	sqm	2250.00	45000.00
17.40	Providing and fixing SS Tile Insert of approved pattern and brand of size up to 150x150 mm etc complete as per direction of engineer in charge.	23.00	each	1756.00	40388.00
17.41	Providing and fixing Galvanised M.S. adjustable holder-bat clamps of approved design to Sand Cast iron/cast iron (spun)/ PVC rain water pipes comprising of Galvanised M.S. flat brackets made of 35 x 5 mm and 340 mm long flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with fastener 10mm dia and 50mm length including drilling necessary holes in brick wall / CC / RCC surface etc. The pipes shall be fixed to the already fixed brackets with the help of G.I.U bolts of dia. 8 mm and nuts and washers of required size for holding the pipes, one bolt on each side of the pipe.				
17.41.1	100 to 110 mm dia pipe.	50.00	each	275.15	13758.00
17.41.2	75 mm dia pipe	30.00	each	268.25	8048.00
17.42	Supplying, Assembling, Transporting and placing in position workstation of size 1050L x 600D x 750H. The worktop shall be made of 25mm thick pre-laminated MDF (DWR Grade 1) exterior grade board with dully finish with 2mm pvc edge band all the side of worktop. The main tables shall be supported by special design legs. The legs at the visitor's side shall be 90° and other side shall be 110°. The legs shall be Dia 44mm ERW Tube confirming to IS 4923: 1997 – 16g. Main leg members shall be connected through a horizontal member size 50x25 cold formed ERW tube by the aluminium die	135.00	each	64913.00	8763255.00

casted connector which having opening of 44mm dia on vertical side & 50 x 25 of 1.6 mm thickness on the horizontal side to accommodate connection of Leg & horizontal frame. The legs shall have clear & tough polycarbonate leg bush & swivel type levelers to cater for floor undulations ± 20 mm. The legs shall be connected with Cross beams. The Cross Beams shall be of 40x20 mm ERW tubes- 16 g. The cross beams shall be connected to the legs with specially designed Aluminum Die Cast connectors by using Hi Tensile Allen bolts as per the design. High pressure aluminum die cast connectors are of ADC-12 material confirming to ASTM E 1251-2011, IS 7658-1990 & IS 11035 – 1190. For chemical composition and IS 1608 – 2005 for UTS & Ys. The Engineering plastic components shall be made with Acrylonitrile butadiene styrene (ABS) which are confirming to ASTM D256 for Izod Impact (1/4”) for Leg shoe and levelers. The spacers shall be fitted to the main leg to give a floating look as well to support the table top. The spacers shall be made of Polycarbonate (PC). The Raceways shall provide below the work surface for carrying wires from one end to other end of the cluster, Size offered shall 250mm Ht, Thickness 70mm. Provided with separator for data and power cables. Designed to accommodate 50-60 CAT-6 cables. The “Hook on” raceway covers shall provide with opening from either side. The cover shall made of MS Powder coated metal/prelam particle board. The switch/sockets shall be mounted on the Raceway covers as per the client requirement Switches. For entry of cables from the floor into the cable tray, Wire Entry covers shall provide between the intermediate legs with separator for entry of				
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	power and data. The lacquered glass shall be 8mm thick, manufactured using high-quality float glass coated on the back with a durable and uniform lacquer finish. The glass should exhibit a smooth, opaque surface with consistent coloration, as approved by the architect or client. All edges of the glass shall be machine polished with bevel-free finishing to ensure safety and aesthetics. Dimensional tolerances shall be within ± 1.5 mm as per relevant standards. size shall be 750L x 350H. Mobile Drawer Unit: It shall be of size of 400 x 450 x 600 (WDH) mm made up of 18mm thick MDF board and its edges duly sealed with 2mm PVC Lipping on automatic machine at visible sides. Drawer front & sides shall be made up of 18mm, back 9 mm thick pre laminated MDF board with visible edges sealed with 2mm PVC edge band. The drawer side surface shall be provided with finger groove handle-less design. Finger groove shall be created by providing a reverse tapered profile edge of 6mm straight surface & 12 mm tapered towards inside at 45 degrees & then sealed with minimum 2mm thick PVC lipping on automatic machine. Suitable lock shall be provided. Tolerance of ± 5mm to be considered for product sizes i.e Length, Depth & height and tolerance of 5% to be considered in pipe thickness & Pipe sizes.				
17.43	Providing and fixing 19 mm thick one side decorative and other side balancing lamination factory pressed BWP grade marine ply as per IS 710 of approved brands for Table top / Substructure, Boxes, Shelves, Drawers in any shape (Rectangular, Oval, Circular) etc. including necessary nails, screws, hot glue by edge bending machine etc. complete as per direction of Engineer-in-charge.	50.00	sqm	2810.00	140500.00

17.44	Providing and fixing Toilet Cubicles System with 12mm thick solid compact laminate panels of approved brand and manufacturer and standard hardware /accessories such as top rail ,U channel, SS door stopper channel ,SS Gravity Hinges, SS coat hook ,door knob ,lockset with thumb turn indicator etc.in standard stainless steel grade 304 and shoe box in SS 316.Fixed on floor with standard shoe with clear gap of 100mm using stainless steel screws etc. complete as per direction of Engineer-in-charge	40.00	sqm	11224.00	448960.00
17.45	Rubbing and polishing on marble work/Granite work/stone work/Mosaic Tiles where ever required to give high gloss finish etc complete.as per direction of Engineer-in-charge	450.00	sqm	331.76	149292.00
17.46	Credit for dismantled materials received from the work: -Wooden, PVC items such as frames, shutters, windows and same like etc complete as per direction of Engineer-in-charge	500.00	kg	-17.70	-8850.00
17.47	Credit for taking away the dismantled aluminium windows frames/shutters etc. as per direction of Engineer- in-Charge	800.00	kg	-153.40	-122720.00
				Total B	23929139
				Total (A+B)	43603925

Assistant Engineer (P)
O/o CE (Mumbai)-II, CPWD, Mumbai

Executive Engineer (P)
O/o CE (Mumbai)-II, CPWD, Mumbai