



HINDUSTAN ORGANIC CHEMICALS LIMITED

(A Government of India Enterprise)

AMBALAMUGAL, Ernakulam District, PIN – 682 302.

Phone: (0484) 2720911, FAX No. (0484) 2720893

E- TENDER NOTICE

HOCL Invites e-Bids under the **Two-bid system** for the following work:

Sl. No.	Description of Item and Tender No.
1	CONSTRUCTION OF WATER RECYCLING TANK OF 300 M³ CAPACITY IN ETP HOCL Tender Ref: CIV10203/2024

Tender documents may be downloaded from www.hoclkochi.com or www.eprocure.gov.in.

Interested parties may please get registered with NIC e-procurement portal (URL: <https://eprocure.gov.in/eprocure/app>.) to participate in the tender. Tenders submitted other than through online procedure specified will not be accepted. Please visit the above sites regularly for any addendum/ corrigendum/ extension before submitting the offers.

Please submit your E-bids under the **Two-bid system** confirming to the specifications and the terms and conditions.

EMD - EMD of **Rs. 61,800/-** to be submitted along with the bid (upload a copy of the DD/ thro' NEFT /RTGS and Bank Guarantee also sent the original through post to the contact persons referred below)

The details of the tender are as shown in INDEX enclosed.

For and on behalf of HINDUSTAN ORGANIC CHEMICALS LIMITED
(GSTN: 32AAACH2663P1ZG)1
(CIN: I99999MN1960GOI011895)

RAJESH R
GENERAL MANAGER (PRODUCTION/ CIVIL)



HINDUSTAN ORGANIC CHEMICALS LIMITED
(A Government of India Enterprise)
AMBALAMUGAL, Ernakulam District, PIN – 682 032.
Phone: (0484) 2720911, FAX No. (0484) 2720893

CONSTRUCTION OF WATER RECYCLING TANK OF 300 M³ CAPACITY IN ETP

HOCL Tender Ref: CIV10203/2024

Dear Sir,

Hindustan Organic Chemicals Limited is a Government of India Undertaking manufacturing Phenol, Acetone & Hydrogen Peroxide at its plant at Kochi, Kerala, India. HOCL invites e-tenders for **CONSTRUCTION OF WATER RECYCLING TANK OF 300 M³ CAPACITY IN ETP.**

HOCL has entered into an agreement with M/s. NIC for e-procurement through their portal <https://eprocure.gov.in/eprocure/app>. You may please get registered as a vendor with NIC for participating in this tender.

Tender documents are uploaded in HOCL website www.hoclkochi.com & <https://eprocure.gov.in/eprocure/app>

Index of documents enclosed is attached herewith. You are requested to kindly go through all the documents in detail before preparing/submitted your tender.

You may submit your offer on **Two-bid system** online before the due date and time specified.

Thanking you,

Yours Faithfully,
For Hindustan Organic Chemicals Limited,

RAJESH R
GENERAL MANAGER (PRODUCTION/ CIVIL)

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This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

GENERAL INSTRUCTIONS FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement Portal (Govt. Of India), using valid **Digital Signature Certificates**. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at: <https://eprocure.gov.in/eprocure/app>.

REGISTRATION

1. Bidders are required to enrol on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link "Online bidder Enrolment" on the CPP Portal which is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / e-Mudhra etc.), with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
6. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the CPP Portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk

PREPARATION OF BIDS

1. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
3. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

Note: My Documents space is only a repository given to the Bidders to ease the uploading process. If Bidder has uploaded his Documents in My Documents space, this does not automatically ensure these Documents being part of Technical Bid.

SUBMISSION OF BIDS

1. Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
4. Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
5. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BoQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
6. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
7. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is

uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
9. Upon the successful and timely submission of bids (i.e. after Clicking "Freeze Bid Submission" in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
10. The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

ASSISTANCE TO BIDDERS

1. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk.

Contact Person (Clarifications on online submission)

Mr. Midhun Babu
Assistant Manager (Systems) - HOCL
Mob: 8921387812, 8547196394

HOCL Work Co-ordinator

Mr. Muhammed Suhail T.Y
Senior Civil Engineer
Mob:7736887236
Office:0484 2727208

This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

GENERAL TERMS AND CONDITIONS OF THE TENDER**PRE-QUALIFICATION CRITERIA - (TO BE INCLUDED IN TECHNICAL BID)**

The Tenderers shall submit the following in the technical bid (Un priced bid) without which the tender will be rejected.

1. Complete set of Tender Document duly filled in and signed by the Tenderer as prescribed in different clauses of the Tender Document.
2. GCC duly filled in the relevant portions, signed and stamped all the pages by the tenderer (The tenderers have to download the GCC (General Conditions of Contract) from our web site www.hoclkochi.com and the same has to be returned along with the technical bid duly signed and stamped in all pages.
3. Information regarding tenderer, Organization chart giving details of field management at SITE, the tenderer proposes to have for this WORK including bio-data of the Site-in Charge and key personnel.
4. Details of works with similar type and magnitude carried out by the tenderer as stipulated in Clause 3.
5. The bidder should have well qualified workforce in adequate numbers for handling various stages of the work. The staff/workers details are to be furnished.
6. The bidder should have adequate number of equipments/tools/tackles/scaffolding pipe/clamps/staging materials in sound condition for the execution of the work within the stipulated time. The equipment details should be furnished.
7. Details of current commitments of Tenderer.
8. **Exceptions and deviations, if any, with reference to the Clause No. and page No. of Tender shall be submitted as a separate statement (No Deviation Statement)**
9. A tentative programme for the execution and completion of work within the time specified.
10. **In the case of MSME, necessary certificate (self attested) shall be submitted.**
11. Any other technical information the Tenderer likes to furnish.
12. Copies of work order already completed or in progress.
13. Tender should accompany the details asked in Annexure A, B, C, D, E, F, H, L, Q, R, S & W.
14. Completion certificates of the similar work orders.
15. GSTN registration details.

CLAUSES: -

1. Average annual financial turnover of the bidder during the last 03 years ending 31st March of previous financial year should be at least **Rs 9.28 Lakhs** (Details of annual financial turnover to be submitted with Documentary proof).
2. Details of current commitments with the copies of works orders to be submitted along with technical bid.
3. Experience of having successfully completed similar works during the last 7 years ending 31st March of previous financial year should be either of the following: (Documentary proof should be attached along with the Technical Bid).
 - Three similar completed works costing not less than the amount equal to **Rs. 12.37 Lakhs each**.

OR

 - Two similar completed works costing lot less than the amount equal to **Rs. 15.46 Lakhs each**.

OR

 - One similar completed work costing not less than the amount equal to **Rs. 24.74 Lakhs each**.

EARNEST MONEY DEPOSIT (Not applicable for MSME)

Quotation shall be accompany an EMD of **Rs. 61,800/-** shall be paid through demand draft /thro' NEFT /RTGS / Bank guarantee, favouring Hindustan Organic Chemicals Ltd payable at Ernakulam/Kochi. Details of EMD should be indicated in your technical offer.

In the absence of EMD with Techno Commercial bid, the Price Bid submitted is liable to be rejected.

Signed and stamped "Bid Security Declaration" shall be submitted as Annexure 'H' along with the technical bid which is enclosed.

Bank Details - Central Bank of India, Tripunithura
 - A/c No. 3580607136
 - IFSC - CBIN0284515

Details of bank transfer should be indicated in your technical offer. Quotations not accompanied with EMD, are liable to be rejected.

EMD of the tenderer will be forfeited under the following conditions: -

1. If after opening of the tender, the tenderer revokes his tender or increase his quoted rates.
2. If the tenderer does not commence the work after awarding the contract.
3. No interest on EMD will be paid.
4. EMD of the successful tenderer will be adjusted against the security deposit.
5. EMD of unsuccessful bidders shall be refunded after finalization of the contract and no interest shall be payable.
6. The tender is revoked or varied during its validity period.
7. The Prices are increased unilaterally after the tender opening and during its validity.
8. The tenderer after intimation of acceptance of the tender fails to execute the agreement/or furnish security deposit within the stipulated time.

CONTRACT PREFERENCE

EMD of unsuccessful bidders will be returned on finalization of the orders. PSUs and Vendors registered with NSIC/MSME/SSI Units need not submit EMD, but have to submit valid NSIC registration/exemption certificate along with the Techno-commercial bid. In the event of order being finalised on vendor registered with NSIC, the vendors have to pay Security Deposit payable for the satisfactory performance of the contract.

RATES

Rates quoted shall be inclusive of all taxes, duties, octroi and other levies etc. GST, in case applicable shall be paid extra. The bidder should have GST registration with Central Excise Department.

PERFORMANCE SECURITY (PERFORMANCE BANK GUARANTEE)

The performance security shall be 10% of the total value of the contract. It shall be furnished within 21 days after notification of award of work and shall be released after the defect liability period.

The above maybe furnished in the form of account payee Demand Draft/ Bank Guarantee issued from any commercial bank in India/ on online payment in an acceptable form.

SECURITY DEPOSIT

- Total security deposit shall be 5% of total contract value. This shall be recovered through deductions at the rate of 5% (Five percent) of the value of each running account bill till the total security deposit amount is collected, after which no further deductions shall be made on this account.
- Security Deposit shall be refunded not later than 60 days to the contractor without any interest after the completion of contract in all respects and completion of all such obligations under the contract.

LIQUIDATED DAMAGES

In case the contractor fails to complete the work within the stipulated period, contractor shall be liable to pay a LD of ½% (half percent) of the contract value per week for the delay or part thereof subject to a maximum of 5% (Five percent) of the contract value.

PERIOD OF CONTRACT

The period of the contract shall be **6 months** from the date of issue of work order/issue of instruction to start the work.

TIME OF COMPLETION

Time of completion for the work shall be **3 months** from the date of start of work.

VALIDITY OF THE TENDER

The tender shall be kept valid for acceptance for a period of 90 days from the date of tender opening.

A Tenderer shall not be entitled during the said period of 90 days without the consent in writing of the company to revoke or cancel his tender or to vary the tendered rate or any terms thereof.

PRICE

The Contract will be awarded on fixed all-inclusive price unless otherwise specified. All rates in the tender shall cover applicable taxes, levies and duties. However applicable GST will be paid by HOCL subject to the successful tenderer having GST registration with Central Excise.

The price shall be quoted both in figures and words. In case a tenderer has quoted two different prices in words and figures the lower of the two will be considered valid and binding on the tenderer.

PAYMENT TERMS

- 95% payment shall be released against running bills according to the progress of the job along with necessary certificates and certification by Engineer-In-Charge on pro rata basis.

- Balance 5% payment will be kept as security deposit and it will be released after completion, acceptance and submission of all certificates, final drawings and other formalities under the contract.

DEFECT LIABILITY PERIOD

The contractor shall guarantee the entire work for a period of 12 months from the date of completion of work.

OTHER TERMS AND CONDITIONS

All other Terms and Conditions will be as per our General Conditions of Contract, as published in our website and special condition of contract. The GCC and Special conditions of contract can also be referred in our office during office hours in all working days.

GENERAL CONDITIONS OF CONTRACT (GCC) OF HOCL

The General Conditions of Contract of the company is applicable to, and forms part of the contract.

The General Conditions of Contract of HOCL is available in the office of The Chief General Manager (HR) of HOCL, Ambalamugal or can be downloaded from our Web site www.hoclkochi.com.

RIGHT TO ISSUE ADDENDUM

The company reserves the right to issue any addendum to the tender document to clarify/amend/supplement and/ or delete any of the conditions, clauses or terms stated in the tender documents. Each addendum issued shall be distributed to the tenderer or his authorized representative and each such addendum shall become part of the tender documents.

DUE DATE & TIME

Due date for submission of tender is (Closing date) **01.03.2024 at 02.00PM**.

OPENING OF BIDS

The Bids will be opened on **02.03.2024 at 2:00 PM** electronically. Technically acceptable bidders will be informed about the date and time of opening of the price bids by emails.

PRE-BID MEETING

Not applicable.

SUBMISSION OF BIDS:

Refer Annexure I.

PRICE BID SUBMISSION-BOQ:

Bidders are requested to note that they should necessarily **submit their financial bids in the format provided and no other format is acceptable.** If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. **Bidders are required to download the BOQ file, open it and complete the blue coloured (unprotected) cells with their respective financial quotes and other details** Refer Instructions to Bidder for Online Bid Submission. **(such as name of the bidder).** No other cells should save it and

submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.

RIGHT TO REJECT A BID:

HOCL reserves the right to reject any bid due to reasons such as

- (a) Vendor not following above bidding procedures
- (b) Vendor not being technically acceptable to HOCL
- (c) Not enclosing EMD with the techno commercial bid or EMD paid being lesser than the stipulated amount
- (d) Vendor not agreeing with the general conditions of the tender.
- (e) Not enclosing any particular documents asked for
- (f) Any other valid reasons.

SIGNING & STAMPING ON ALL PAGES OF BIDS:

The vendor shall sign and stamp on all the pages of the bids uploaded, failing which bids are liable to be rejected.

AGREEMENT

The contractor has to execute an agreement with HOCL in the prescribed format on a non-judicial stamp paper of Rs. 200/- within 21 days from the date of work order.

INTEGRITY PACT

Nil.

ENCLOSURE

- ANNEXURE A - ESI, PF, Labour Law Etc. – Requirements
- ANNEXURE B - Labour Laws – Check List
- ANNEXURE C - Safety, Health & Environment (She) Conditions
- ANNEXURE D - Proforma Of Declaration of Black Listing/Holiday Listing
- ANNEXURE E - MSE Details
- ANNEXURE F - BID CONFIRMATION (MORE THAN 5 LAKHS)
- ANNEXURE H - Bid Security declaration
- ANNEXURE L - Declaration of COIPP
- ANNEXURE Q - Bank Guarantee (for EMD/ Security deposit)
- ANNEXURE R - Declaration of compliance of order
- ANNEXURE S - Instruction to the contractor for use of vehicles
- ANNEXURE W - Form of declaration along with submission of tender
- ANNEXURE AC – Manual for scaffolding and check list.

CONSTRUCTION OF WATER RECYCLING TANK OF 300 M3 CAPACITY IN ETP**Tender Ref. No: CIV10203/2024****SCOPE OF WORK**

1. Preparation of planning chart to carry out the work.
2. The contractor shall carry out all Civil work as per the schedule of work.
3. The contractor at his cost should bring all materials, tools and tackles required for the work.
4. HOC will provide water and electricity at one point.
5. Steel scaffolding as per standard wherever required has to be arranged by the contractor at his cost.
6. All materials that go with the work shall be approved by the Engineer-in-charge prior to procurement/use.
7. **Deployment of Supervisor** – The contractor shall deploy a qualified supervisor throughout the contract period.
8. **Specifications and mode of measurements** – All items of work shall have the best workmanship and be executed to the entire satisfaction of the Engineer-in-charge. Unless otherwise specified, the specification and mode of measurements for various items of work shall conform to the standard detailed specifications and mode of measurements for works. In case standard specifications and mode of measurements for any items of work are not available. CPWD specifications for each item may be referred. In case this is also unfavourable, then the specifications and mode of measurements to be followed will be laid out by the Engineer-in-Charge on the base of relevant ISI code of practice or otherwise accepted Engg. practice and subjected to stage inspection by HOC.
9. This work is an important and time bound activity and the contractor has to put all efforts to complete the work in time.
10. HOC has every right to stop the work, if the progress of work found unsatisfactory and the balance work will be carried out by HOC through another agency at the cost and risk of the first contractor.
11. Necessary field tests shall be carried out by the contractor at his own cost.
12. Quality control test certificates should be provided by the contractor as follows
 - Test certificate of cement and tor steel reinforcement.
 - Mix design as per the requirement provided in IS 456, IS 10262 and IS 4926 for ready mix concrete.
13. **The tenderers are expected, to have visited the site to assess the nature of soil, depth and variation of the sub soil water, and the problems that are likely to be excavated in construction and understood the scope of work before quoting for the rates. Any clarification in this regard should be cleared from the engineer-in-charge.**

14. The tank in completion shall be water tight and free from any defect such as cracks or unsightly patches and shall be tested by filling in with water to full supply level and maintaining the level for 3 days. The contractor shall have to make his own arrangements for water testing.
15. After the completion of work in all respects the contractor shall submit the final completion drawing containing all the details of the tank actually constructed.
16. The site shall be cleared after completion of work including disposing the unwanted materials with in the company premises as directed by the Engineer-in-charge.

17. Departmental material: NIL

18. **Clearing site-** The area to be excavated or filled shall be cleared of fences, trees, plants, logs, stumps, bush, vegetation, rubbish, slush, light post if any etc. and other objectionable matter. If any roots or stumps of trees are met during excavation, they shall also be removed. The material so removed shall be disposed off as directed by the Engineer-in-charge.

19. Earthwork in excavation and back filling

- This specification covers the general requirements of earthwork in excavation in different materials, site grading, filling in areas as shown in drawing, filling back around foundations and in plinths, conveyance and disposal of surplus spoils or stacking them properly as directed by Engineer-in-charge.
- Contractor shall furnish all tools, plants, instruments, qualified supervisory personnel, labour, materials, any temporary works, consumables, any and everything necessary, whether or not such items are specifically stated herein for completion of the job in accordance with specification requirements.
- The excavation shall be done to correct lines and levels. This shall also include, where required, proper shoring to maintain excavations and also the furnishing, erecting, maintaining of substantial barricades around excavated area and warning lamps at night for ensuring safety.
- The rates quoted shall also include for dumping of excavated materials in regular heaps, bunds, riprap with regular slopes as directed Engineer-in-charge, with in the lead specified and levelling the same so as to provide natural drainage.
- All excavation work shall be carried out by mechanical and equipment unless, in the opinion of Engineer-in-charge, the work involved and time schedule permit manual work.
- All excavations shall be done to the minimum dimensions as required for safety and working facility. Prior approval of Engineer-in-charge shall be obtained by contractor in each individual case, for the method he proposed to adopt for excavation, including dimensions, side slopes, dewatering, disposal etc. Side slopes shall be as steep as will stand safely for the actual soil condition encountered. Every precaution shall be taken to prevent slips. Should slips occur, the slipped material shall be removed and slope dressed to a modified stable slope. Removal of the slipped earth will not be paid for if the slips are due to negligence of Contractor.

20. Filling trenches around foundations of structures, walls etc.

As soon as the work in foundations has been accepted and measured, the space around the foundations, structures, pits, trenches etc. shall be cleared of all debris, and filled with earth in layers not exceeding 15cm, each layer being watered, rammed and properly consolidated, before the succeeding one is laid. Each layer shall be consolidated to the satisfaction of the Engineer-in-charge. Earth shall be rammed with approved mechanical compaction machines.

The final back fill surface shall be trimmed and levelled to proper profile as directed by Engineer-in-charge.

21. Pumping during construction

The rates quoted shall include bailing or pumping out all water while many accumulate during the construction of the work either from seepage, rain or any other cause and diverting surface flow, if any, by bund or other means. The bund shall be removed after their purpose is served.

22. The quality of materials, method and control of manufacture and transportation of all concrete work irrespective of mix, whether reinforced or otherwise shall be in accordance with IS 456.
23. Engineer shall have the right to inspect the source/s of material/s, the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment, and the quality control system. Such an inspection shall be arranged and Engineer's approval obtained, prior to starting of concrete work.

24. Materials for standard concrete

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

a) Cement

- Unless otherwise specified in the schedule of work, cement shall be ordinary portland cement in 50 kg bags.
- Cement when brought to work shall not be more than 6 weeks old from the date of manufacture. In case due to some reason it is not possible to use the cement within three months then it should be ensured that older lot is used in the leans concrete or other unimportant item of work. Effective precautionary measures shall be taken to eliminate dust nuisance during loading and transferring cement. The procurement of cement shall be planned by the contractor this does not affect the progress of work.
- The contractor will have to make his own arrangements to the storage of adequate quantity of cement.
- Cement in bags shall be stored and stacked in a shed which is dry, leak proof and as moisture proof as possible.
- Cement shall be procured/purchased from cement factories/authorized dealers/retailers from various popular brands e.g. ACC, Malabar, Ultratech etc. The contractor shall have to submit the test certificate and the cash memo along with the lot of cement purchased from the various cement factories/ authorized dealers/ retailers to Engineer in Charge in token proof of purchase of cement from reputed cement factories/authorized dealers/retailers. No cement shall be accepted by the Engineer in Charge without cash memo. Certified copy of the same shall be submitted to HOCL along with running bills/final bills.
- No, payment shall be made for the cement used in works rejected by Engineer. All empty bags shall be taken away by the contractor after use of cement and cost of empty cement bags shall not form part of quoted rates against the item of cement.

- Cement consumption register shall be meticulously maintained giving quantity of work done/consumption of cement of each day.

b) Aggregates

- "Aggregate" in general designates both fine and coarse inert materials used in the manufacture of concrete.
- "Fine Aggregate" is aggregate most of which passes through 4.75 mm IS sieve.
- "Coarse Aggregate" is aggregate most of which is retained on 4.75 mm IS sieve.
- All fine and coarse aggregates proposed for use in the work shall be subject to Engineer's approval and after specific materials have been accepted, the source of supply of such materials shall not be changed without prior approval of Engineer in charge.

c) Fine aggregate

Manufacturing sand (M Sand) will be acceptable, provided the constituent rock/gravel composition shall be sound, hard, dense, non-organic, uncoated and durable against weathering.

d) Coarse aggregate

Course aggregate for concrete shall conform to IS:383. This shall consist of natural or crushed stone and gravel and shall be clean and free from elongated, flaky or laminated pieces, adhering coatings, clay lumps, coal residue, clinkers, slag, alkali, mica, organic matter or other deleterious matter.

e) Screening and washing

Natural gravel and crushed rock shall be screened and/or washed for the removal of dirt or dust coating, if so demanded by Engineer.

f) Sampling and testing:

Samples of the aggregates for mix design and determination of suitability shall be taken under the supervision of Engineer and delivery to the laboratory, well in advance of the scheduled placing of concrete. Records of tests which have been made on proposed aggregates and on concrete made from this source of aggregates shall be furnished to Engineer in advance of the work for use in determining aggregate suitability. The costs of all such tests, sampling etc., shall be borne by Contractor.

g) Grading

- Coarse aggregate shall be either in single size or graded in both cases, the grading shall be within the permissible limits.
- The aggregates shall be angular in shape and shall have granular or crystalline surfaces. Friable, flaky and laminated pieces, mica and shale, if present, shall be only in such quantities that will not, in the opinion of Engineer, affect adversely the strength and/or durability of concrete. The maximum size of coarse aggregate for design mix shall be 20 mm size. The maximum size of coarse aggregate shall be the maximum size specified above, but in no case greater than $\frac{1}{4}$ of the minimum thickness of the member, provided that the concrete can be placed without difficulty

so as to surround all reinforcement thoroughly and fill the corners of the form. For reinforced concrete members, the nominal maximum size of the aggregate shall be 5 mm less than the minimum clear distance between the reinforcing main bars or 5 mm less than the minimum cover to the reinforcement whichever is smaller.

h) Water

- Water used for both mixing and curing shall be free from injurious amounts of deleterious materials. Potable waters are generally satisfactory for mixing and curing concrete.
- In case of doubt, the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time test specified in IS.456. The sample of water taken for testing shall be typical of the water proposed to be used for concreting, due account being paid to seasonal variation. The sample shall not receive any treatment before testing other than that envisaged in the regular supply of water proposed for use in concrete. The sample shall be stored in clean container previously rinsed out with similar water.
- Average 28 day compressive strength of at least three 15 cm concrete cubes prepared with water proposed to be used shall not be less than 90% of the average strength of three similar cubes with distilled water.
- The initial setting time of test block made with the appropriate test cement and the water proposed to be used shall not be less than 30 minutes and shall not differ by more than ± 30 minutes from the initial setting time of control test block prepared with the appropriate test cement and distilled water. The test blocks shall be prepared and tested in accordance with the requirements of IS: 4031.

i) REINFORCEMENT

- All Reinforcement Steel (TMT Bars) and structural Steel shall be procured as per specifications mentioned in BIS's documents IS: 1786 and IS: 2062 respectively.
- Steel shall be procured only from those firms, which are established, reliable, indigenous and Primary producers of steel, having integrated steel plants (ISP), using iron ore as the basic raw material and having in-house iron rolling facilities, following by production of liquid steel and crude steel, as per Ministry of Steels guidelines. The approved makes are SAIL/TISCO/VIZAG.
- The steel procured shall be reasonably free from cracks, surface flaws, laminations, rough and imperfect edges and all other harmful defects. Steel sections, shall be free from excessive rust, scaling and pitting and shall be well protected. The decision of the Engineer regarding rejecting any steel section on account of any of the above defects shall be final and binding.
- Necessary purchase bill along with test certificate for steel shall be obtained and submitted to the Engineer in charge. (Steel without the test certificate from approved laboratory/ Engineering College shall not be used in the work.)
- Quantity for this item shall be calculated as per nominal weight of steel section for the length actually used in the work. No payment will be made for the wastage and the contractor will be allowed to take away the scrap and excess steel away from site.
- The contractor shall be responsible for getting the measurement of steel entered in to steel register and signed by the Engineer in charge of the work before concreting is done to avoid dispute regarding quantity of steel used in the work.

- The rates quoted for this item is deemed to be inclusive of the cost of binding wire and no separate payment shall be admissible for the same.
- The steel shall be kept by the contractor under his custody at the site of work and HOCL will not be responsible for any theft thereof.
- The quantity so payable under relevant item shall be restricted to the quantity as per approved plan/drawing and decision of the Engineer in charge in this regard shall be final and binding upon the contractor.
- The contractor shall prepare material re consolidation statement and submit along with the running bills/ final bill.

LAPS

Laps and splices for reinforcement shall be as shown on the drawings. Splices in adjacent bars shall be staggered and the locations of all splices, except those specified in the drawings shall be approved by the Engineer in charge. The bars shall not be lapped unless the length required exceeds the maximum available lengths of bars at site.

BENDING

Reinforcing bars supplied bent or in coils, shall be straightened before they are cut to size. Straightening of bars shall be done in cold and without damaging the bars. This is considered as a part of reinforcement bending fabrication work.

FIXING

Reinforcement shall be accurately fixed by any approved means and maintained in the correct position shown in the drawings by the use of blocks, spacers and chairs as per IS: 2502 to prevent displacement during placing and compaction of concrete. Bars intended to be in contact at crossing points shall be securely bound together at all such points with number 22 gauge annealed soft iron. The vertical distances required between successive layers of bar in beams or similar members shall be maintained by the provision of mild steel spacer bars at such intervals that the main bars do not perceptibly sag between adjacent spacer bars.

COVER

Unless indicated otherwise on the drawings, clear concrete cover for reinforcement (exclusive of plaster or other decorative finish) shall be as follows:

- a) At each end of reinforcing bar, not less than 25 mm nor less than twice the diameter of the bar.
- b) For a longitudinal reinforcing bar in a column, not less than 40 mm, nor less than the diameter of the bar in case of columns of minimum dimension of 20 cm. or under, with reinforcing bars of 12 mm and less in diameter, a cover of 25 mm may be used.
- c) For longitudinal reinforcing bars in a beam, not less than 25 mm nor less than the diameter of the bar.
- d) For tensile, compressive, shear, or other reinforcement in a slab or wall not less than 13 mm, nor less than the diameter of such reinforcement.
- e) For any other reinforcement not less than 13 mm, nor less than the diameter of such reinforcement.

- f) For footings and other principal structural members in which the concrete is deposited directly against the ground, cover to the bottom reinforcement shall be 75 mm. If concrete is poured on a layer of lean concrete the bottom cover may be reduced to 50 mm.
- g) For concrete surfaces exposed to the weather or the ground after removal of forms, such as retaining walls, grade beams, footing sides and top, etc., not less than 50 mm for bars larger than 16 mm dia. and not less than 40 mm for bars 16 mm dia. or smaller1)
- h) The correct cover shall be maintained by cement mortar cubes or other approved means. Reinforcement for footings, grade beams and slabs on subgrade shall be supported on precast concrete blocks as approved by Engineer. The use of pebbles or stones shall not be permitted.
- i) The 28 day crushing strength of cement mortar cubes/ precast concrete cover blocks shall be at least equal to the specified strength of concrete in which these cubes/blocks are embedded.
- j) The minimum clear distance between reinforcement shall be in accordance with IS: 456 or as shown in drawings.

INSPECTION

Erected and secured reinforcement shall be inspected and approved by the Engineer-in-charge prior to placement of concrete.

PAYMENT

For payment of work done under this item, the actual quantity of steel embedded in concrete as calculated and approved by Engineer, irrespective of the level or the height at which the work is done, shall be taken. The unit rate for reinforcement shall include all wastages, binding wire, etc. for which no separate payment shall be made. Laps, minimum number of chairs and spacer bars to keep the reinforcement in place and approved by Engineer, shall be measured and paid for.

25. CONCRETE

All concrete in the works shall be "Controlled Concrete" as defined in IS: 456, unless it is a nominal mix concrete such as 1:3:6, 1:4:8 or 1:5:10. Whether reinforced or otherwise, all controlled concrete works to be carried out under this specification shall be divided into the following classification:

**MINIMUM COMPRESSIVE STRENGTH OF 15 CM. CUBES AT 7 AND 28 DAYS AFTER MIXING,
CONDUCTED IN ACCORDANCE WITH IS: 516**

Class	Preliminary test kg/cm ²		Work test kg/cm ²		Maximum size of aggregate (mm)	Locations for use
	at 7 day s	At 28 day s	at 7 day s	at 28 day s		
M400	335	500	270	400	20	As indicated in the Schedule of Quantities
M350	300	440	235	350	20	-do-
M300	250	380	200	300	40 or 20	-do-
M250	220	320	170	250	40 or 20	-do-
M200	175	260	135	200	40 or 20	-do-
M150	135	200	100	150	40 or 20	-do-

Note: It shall be Contractor's responsibility to ensure that minimum crushing strength stipulated for the respective class of concrete is obtained at works.

26. MIX DESIGN

- This is to investigate the grading of aggregates, water - cement ratio, workability and the quantity of cement required to give preliminary and works cubes of the minimum strength specified. The proportions of the mix shall be determined by weight. Adjustment of aggregate proportions due to moisture present in the aggregate shall be made.
- Whenever there is a change either in required strength of concrete, or water-cement ratio or workability or the source of aggregates and/or cement, preliminary tests shall be repeated to determine the revised proportions of the mix to suit the altered conditions. While, designing mix proportions, over-wet mixes shall always be avoided.
- While fixing the value for water/cement ratio for preliminary mixes, assistance may be derived from the graph (Appendix A IS:456) showing the relationship between the 28 – day compressive strengths of concrete mixes with different water/cement ratios and the 7-day compressive strength of cement tested in accordance with IS:269.

27. PRELIMINARY TESTS

Test specimens shall be prepared with at least two different water/cement ratios for each class of concrete, consistent with workability required for the nature of the work. The materials and proportions used in making preliminary tests shall be similar in all respects to those to be actually employed in the works as the object of these tests is to determine the proportions of cement, aggregates and water necessary to produce concrete of required consistency and to give the specified strength. It will be Contractor's sole responsibility to carry out these tests and he shall therefore furnish to Engineer a statement of proportions proposed to be used for the various concrete mixes. For preliminary tests, the following procedure shall be followed:

Materials shall be brought to the room temperature and all materials shall be in a dry condition. The quantities of water, cement and aggregates for each batch shall be determined by weight to an accuracy of 1 part in 1000 parts.

FOR PRELIMINARY TESTS

Mixing of concrete for preliminary test shall be done by hand or in a small batch mixer as per IS 516 in such a manner as to avoid loss of water. The cement and fine aggregate shall first be mixed dry until the mixture is uniform in colour. The coarse aggregate shall then be added, mixed and water added and the whole batch mixed thoroughly for a period of not less than two minutes until the resulting concrete is uniform in appearance. Each batch of concrete shall be of such a size as leave about 10% excess concrete, after moulding the desired number of test specimens.

CONSISTENCY

The consistency of each batch of concrete shall be measured immediately after mixing, by the slump test in accordance with IS: 1199. If in the slump test, care is taken to ensure that no water or other material is lost, the material used for the slump test may be remixed with the remainder of the concrete for making the specimen test cubes.

The period of re-mixing shall be as short as possible yet sufficient to produce a homogeneous mass.

SIZE OF TEST CUBES

Compression tests of concrete cubes shall be made as per IS: 516 on 15 cm cubes. Each mould shall be provided with a metal base plate having a plane surface so as to support the mould during filling without leakage. The base plate shall be preferably attached to the mould by springs or screws. The parts of the mould when assembled shall be positively and rigidly held together. Before placing concrete, the mould and base plate shall be cleaned and oiled. The dimensions and internal faces of the mould shall be accurate within the following limits:

Height and distance between the opposite faces of the mould shall be of specified size ± 0.2 mm. The angle between the adjacent internal faces and between internal faces and top and bottom planes of mould shall be $90^\circ \pm 0.50$. The interior faces of the mould shall be plane surfaces with a permissible variation of 0.03 mm.

COMPACTING

Concrete test cubes shall be moulded by placing fresh concrete in the mould and compacted as specified in IS:516.

CURING

Curing shall be as specified in IS:516. The cubes shall be kept in moist air of at least 90% relative humidity at a temperature of $27^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 24 hours $\pm \frac{1}{2}$ hour from the time of adding water to the dry ingredients. Thereafter they shall be removed from the moulds and kept immersed in clean, fresh water and kept at $27 \pm 2^{\circ}\text{C}$ temperature until required for test. Curing water shall be renewed every seven days. A record of maximum and minimum temperatures at the place of storage of the cubes shall be maintained during the period they remain in storage.

TESTING OF SPECIMENS

The strength shall be determined based on not less than five cube test specimens for each age and each water cement ratio. All these laboratory test results shall be tabulated and furnished to Engineer. The test results shall be accepted by Engineer if the average compressive strengths of the specimens tested is not less than the compressive strength specified for the age at which specimens are subject to the condition that only one out of the five consecutive tests may give a value less than the specified strength for that age. Engineer may direct Contractor to repeat the tests if the results are not satisfactory and also to make such changes as he considers necessary to meet the requirements specified. All these preliminary tests shall be conducted by Contractor at his own cost in an approved laboratory.

28. PROPORTIONING, CONSISTENCY, BATCHING AND MIXING OF CONCRETE**PROPORTIONING**

- AGGREGATE

The proportions which shall be decided by conducting preliminary tests shall be by weight. These proportions of cement, fine and coarse aggregates shall be maintained during subsequent concrete batching by means of weigh batchers conforming to IS. 2722 capable of controlling the weights within one percent of the desired value. Except where it can be shown to the satisfaction of Engineer that supply of properly graded aggregate of uniform quality can be maintained over the period of work, the grading of aggregate shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions. The different sizes shall be stocked in separate stock piles. The grading of coarse and fine aggregate shall be checked as frequently as possible, as determined by Engineer, to ensure maintaining of grading in accordance with the samples used in preliminary mix design. The material shall be stock piled well in advance of use.

- CEMENT

The cement shall be measured by weight.

- WATER

Only such quantity of water shall be added to the cement and aggregates in the concrete mix as to ensure dense concrete, specified surface finish, satisfactory workability, consistent with the strength stipulated for each class of concrete. The water added to the mix shall be such as not to cause segregation of materials or the collection of excessive free water on the surface of the concrete.

DEFINITION OF WATER/CEMENT RATIO

The water cement (W/C) ratio is defined as the weight of water in the mix (including the surface moisture of the aggregates) divided by the weight of cement in the mix.

WATER/CEMENT RATIO

The actual water cement ratio to be adopted shall be determined in each instance by Contractor and approved by Engineer.

PROPORTIONING BY WATER /CEMENT RATIO

The W/C ratio specified for use by Engineer shall be maintained. Contractor shall determine the water content of the aggregates as frequently as directed by Engineer as the work progresses and as specified in IS : 2386 (Part III) and the amount of mixing water added at the mixer shall be adjusted as directed by Engineer – in -charge so as to maintain the specified W/C ratio. To allow for the variation in weight of aggregates due to variation in their moisture content, suitable adjustments in the weights of aggregates shall also be made.

CONSISTENCY AND SLUMP

- Concrete shall be of a consistency and workability suitable for the conditions of the job. After the amount of water required is determined, the consistency of the mix shall be maintained throughout the progress of the corresponding parts of the work and approved tests e.g. slump tests, compacting factor tests, in accordance with IS: 1199, shall be conducted from time to time to ensure the maintenance of such consistency.
- The following tabulation gives a range of slumps which shall generally be used for various types of construction unless otherwise instructed by the Engineer-in-charge.

SLUMPS FOR VARIOUS TYPES OF CONSTRUCTION

	<u>Slump in millimetres</u>	
	Maximum	Minimum
Reinforced foundation walls and footings	75	75
Plain footings, caissons and substructure walls	75	75
T. G. and massive compressor foundations	50	25
Slabs, Beams and reinforced walls	100	25
Pumps & miscellaneous Equipment	75	75
Foundation Building columns	100	25
Pavements	50	25
Heavy mass construction	50	25

For ready mixed concrete slump = ± 25 mm or $\pm 1/3$ of the specified value, whichever is less.

Compacting Factor = ± 0.03 , where the specified value is 0.90 or greater, ± 0.04 , where the specified value is less than 0.90 but more than 0.80, and ± 0.05 , where the specified value is 0.80 or less.

BATCHING AND MIXING OF CONCRETE

- The materials and proportions of concrete materials as established by the preliminary tests for the mix design shall be rigidly followed for all concrete and shall not be changed except when specifically permitted by Engineer-in-charge.
- Concrete shall be produced only by weigh batching the ingredients. Concrete shall be manufactured, using cement content as per approved design mix in fully automatic batching plant and transported to site of work in transmit mixer for all leads, having continuous agitated mixer including pumping of R.M.C from transmit mixer to site of laying.

29. SAMPLING AND TESTING CONCRETE IN THE FIELD

- Facilities required for sampling materials & concrete in the field, if Engineer-in-charge so desires, shall be provided by Contractor at no extra cost.
- Arrangement can be made by Contractor to have the cubes tested in an approved laboratory in lieu of a testing machine at site at his expense, with the prior consent of the Engineer-in-charge

SAMPLING FOR STRENGTH OF CONCRETE

At least 6 test cubes of each class of concrete shall be made for every batch of concrete or part thereof. Such samples shall be drawn on each day for each type of concrete. Of each set of 6 cubes, three shall be tested at 7 days age and three at 28 days age. The laboratory test results shall be tabulated and furnished to Engineer. Engineer will pass the concrete if average strength of the specimens tested is not less than the strength specified, subject to the condition that only one out of three consecutive tests may give a value less than the specified strength but this shall not be less than 90% of the specified strength.

CONSISTENCY

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

ADMIXTURES

Admixtures may be used in concrete as per IS 9103 only with the approval of Engineer based upon evidence that, with the passage of time, neither the compressive strength nor its durability reduced. Calcium chloride shall not be used for accelerating set of the cement for any concrete containing reinforcement, or embedded steel parts. When calcium chloride is permitted to be used, such as in mass concrete works, it shall be dissolved in water and added to the mixing water in an amount not to exceed 15 percent of the weight of the cement in each batch of concrete. When admixtures are used, the designed concrete mix shall be corrected accordingly. Admixtures shall be used as per manufacturer's instructions and in the manner and with the control specified by Engineer.

WATER PROOFING AGENT

Where specified and approved by Engineer, water proofing agent conforming to IS: 2645 shall be added in quantities specified by Engineer.

OTHER ADMIXTURES

Engineer in charge may at his discretion instruct Contractor to use any other admixture in the concrete.

30. PREPARATION PRIOR TO CONCRETE PLACEMENT, FINAL INSPECTION AND APPROVAL

- Before the concrete is actually placed in position, the insides of the formwork shall be inspected to see that they have been cleaned and oiled.
- The various trades shall be permitted ample time to install drainage and plumbing lines, floor and trench drains, conduits, hangers, anchors, inserts, sleeves, bolts, frames and other miscellaneous embedment to be cast in the concrete as indicated on the drawings or as is necessary for the proper execution of the work. Contractor shall cooperate fully with all such agencies, and shall permit the use of scaffolding, form work etc. by other trades at no extra cost.
- All embedded parts, inserts etc. supplied by Owner or Contractor shall be correctly positioned and securely held in the forms to prevent displacement during depositing and vibrating of concrete.
- The contractor shall ensure all the pipe joints, suction lines etc. shall be water tight.
- Slots, openings, holes, pockets etc. shall be provided in the concrete work in the positions indicated in the drawings or as directed by Engineer-in-charge.
- Reinforcement and other items to be cast in concrete shall have clean surfaces that will not impair bond.
- Prior to concrete placement all work shall be inspected and approved by Engineer and if found unsatisfactory, concrete shall not be poured until after all defects have been corrected at Contractor's cost.

31. PROCEDURE FOR PLACING OF CONCRETE

Before any concrete is placed, the entire placing programme, consisting of equipment, layout, proposed procedures and methods shall be submitted to Engineer-in-charge for approval if so demanded by Engineer-in-charge and no concrete shall be placed until Engineer's approval has been received. Equipment for conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete during depositing without segregation of materials, considering the size of the job and placement location.

Superficial honey combed surfaces and rough patches shall be similarly made good immediately after removal of shuttering, in the presence of Engineer and superficial water and air holes shall be filled in. Special grouting shall be done by the contractor to avoid irregularities and undulations if required.

CONCRETING IN LAYERS

Concreting, once started, shall be continuous until the pour is completed. Concrete shall be placed in successive horizontal layers of uniform thickness ranging from 15 to 50 cm as directed by Engineer-in-charge.

BEDDING OF LAYERS

The top surface of each pour and Bedding planes shall be approximately horizontal unless otherwise instructed.

COMPACTION

Concrete shall be compacted during placing, with approved vibrating equipment until the concrete has been consolidated to the maximum practicable density, is free of pockets of coarse aggregate and fits tightly against all form surfaces, reinforcement and embedded fixtures.

CONSTRUCTION JOINTS AND KEYS

- Concrete shall be placed without interruption until completion of the part of the work between predetermined construction joints, as specified hereinafter.
- If stopping of concreting becomes unavoidable anywhere, a properly formed construction joint shall be made where the work is stopped. Joints shall be either vertical or horizontal, unless shown otherwise on drawings. Vertical joints shall be formed against a stop board; horizontal joints shall be level and wherever possible, arranged so that the joint lines coincide with the architectural features of the finished work. Battens shall be nailed to the form work to ensure a horizontal line and if directed, shall also be used to form a grooved joint. For tank walls and similar work joints shall be formed as per IS: 3370. Concrete that is in the process of setting shall not be disturbed or shaken by traffic either on the concrete itself or upon the shuttering. Horizontal and vertical construction joints and shear keys shall be located and shall conform in detail to the requirements of the plans unless otherwise directed by Engineer-in-charge.

TREATMENT OF CONSTRUCTION JOINTS ON RESUMING CONCRETING

- A drier mix shall be used for the top lift of horizontal pours to avoid laitance. All laitance and loose stones shall be thoroughly and carefully removed by wire brushing/hacking and surface washed.
- Just before concreting is resumed, the roughened joint surface shall be thoroughly cleaned and loose matter removed and then treated with a thin layer of cement grout of proportion specified by Engineer-in-charge and worked well into the surface. The new concrete shall be well worked against the prepared face before the grout mortar sets. Special care shall be taken to obtain thorough compaction and to avoid segregation of the concrete along the joint plane.

32. CURING

All concrete shall be cured by keeping it continuously damp for the period of time required for complete hydration and hardening to take place. Fresh concrete shall be cured for 21 days from the date of placing of concrete following a lapse of 12 to 14 hours after laying concrete.

33. FORMWORK

The formwork shall consist of shores, bracings, faces of retaining wall, sides of beams and columns, bottom of slabs etc. including ties, anchors, hangers, inserts etc. complete which shall be properly designed and planned for the work.

FORMWORK REQUIREMENTS

- Forms shall conform to the shapes, lines, grades and dimensions including camber of the concrete as called for on the drawings. Forms shall be strong enough to permit the use of vibrators.
- Shuttering for concrete shall be rigidly constructed of materials approved by the Engineer-in-charge and shall be true the shape and dimension shown in the work drawing. The shuttering used shall be of steel ply preferably and in case timber is used; the timber shall be well seasoned, free from loose knots. The surface in contact with the concrete shall be lined with ply wood sheets (In case of timber shuttering) and shall be free from adhering, grout, projections, slits and other defect. Joints shall be sufficiently tight to prevent any leakage of cement. Duct tape shall be used to seal joints to prevent leakage. The surface of shuttering in contact with concrete shall be applied with approved grease or other approved oil or approved stripping agent every time before use, so as to provide a smooth surface of concrete after removal of shuttering and to prevent any shiny or honey combed surface of concrete. Released grease/oil shall not be used as to leave stain marks on concrete. Since vibrator is to be invariably used. Hence, the shuttering to be used should be strong enough so that no undulation severe irregularities occur on the concrete surface as no patches or plaster on the concrete surface shall be allowed.

REMOVAL OF FORMS

- Contractor shall record on the drawing or a special register the date upon which the concrete is placed in each part of the work and the date on which the shuttering is removed therefrom.
- In normal circumstances (generally where temperature are above 20⁰ C) forms may be struck after expiry of the following periods:

	Ordinary Portland cement concrete
a. Walls, columns and vertical sides of beams	24 to 48 hours as directed by the Engineer
b. Slabs (Props left under)	3 days
c. Beam soffits (Props left under)	7 days
d. Removal of props to slabs:	7 days
Spanning up to 4.5m	
Spanning over 4.5 m	14 days
e. Removal of props to beams & arches:	14 days
Spanning up to 6 m	
Spanning over 6 m	21 days

This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

Name of Work: CONSTRUCTION OF WATER RECYCLING TANK OF 300 M3 CAPACITY IN ETP

Tender Ref. No : CIV10203/2024

SPECIAL CONDITIONS OF CONTRACT

1. Safety Helmets, safety shoes, goggles, safety belts, gloves and other PPEs etc. for the workmen and supervisor employed for the work are to be arranged by the contractor. No work to be carried out without wearing safety gadgets (PPE's).
2. You shall strictly instruct your workers not to spit in the public places and area of work.
3. The entire work is to be carried out as per the standard engineering practice and subjected to stage inspection by HOC/3rd party inspection agency.
4. Necessary safety permit shall be taken before doing any kind of jobs. The permit shall be renewed on every shift.
5. All debris, waste etc. arising out of the job should be disposed anywhere inside company premises as per direction of engineer in charge.
6. HOC has every right to stop the work if the progress and quality of work is found unsatisfactory. The balance work will be carried out by HOC through another agency at the cost and risk of the first contractor.
7. Contractor has to mobilize the complete team with necessary tools and tackles within reasonable period from the time of intimation to start the work.
8. You are requested to take necessary insurance for the personnel employed by you for the coverage of the liability to the people employed by them, arising out of any accident occurring during the execution of the work. HOC will not take any responsibility or admit any claim in the event of an accident in any manner.
9. Either the contractor or his authorized supervisor shall be available at work site throughout the work.
10. The Contractor shall follow all clause in Annexure – A, B & C like ESI, Safety Regulations and General Conditions of Contract, Workmen Compensation, Personal Protective Equipments (PPE), Labor Laws, PF, Guidelines to contractors / suppliers for environmental protection & Confined Space Entry
11. The quantity shown can vary i.e. Increase or decrease depending upon the situation. However, the rate and other terms and conditions are same throughout the pendency of the contract for which the contractor must be ready.
12. Contractor shall get prior permission from the Engineer-in-Charge for bringing the tools machinery's etc. material to HOCL.

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Name of Work: **CONSTRUCTION OF WATER RECYCLING TANK OF 300 M3 CAPACITY IN ETP**

Tender Ref. No: CIV10203/2024

COMPLIANCE / NO-DEVIATION STATEMENT

Tender ID:

It is hereby stated that the quotation/offer submitted by us is in full compliance with the documents issued against the enquiry and also further confirmed that there is no deviation from all the terms and conditions as per the enquiry.

Signature of the Tenderer :

Name of the Tenderer :

Address :

Place: SEAL

Date:

This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

Name of Work: **CONSTRUCTION OF WATER RECYCLING TANK OF 300 M3 CAPACITY IN ETP**

Tender Ref. No: **CIV10203/2024**

COMPLIANCE OF GENERAL CONDITIONS OF CONTRACT (GCC)

It is hereby stated that we have read and understood General Conditions of Contract (GCC) and confirm that we abide by all the terms and conditions of GCC.

Signature of the Tenderer :

Name of the Tenderer :

Address :

Place : SEAL

Date :

This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

**Name of Work: CONSTRUCTION OF WATER RECYCLING TANK OF 300 M3 CAPACITY
IN ETP**

Tender Ref. No: CIV10203/2024

CHECK LIST
PRO-FORMA-TECHNICAL BID

1. Documents substantiating prequalification criteria as per **Annexure - II submitted (YES/NO)**.
2. General Terms and Conditions, Scope of Work (**Annexure II, III, IV, V, VI, VII A, B & C**) (complete set of Tender Documents) to be signed and stamped on all pages, scanned and uploaded **(YES/NO)**.
3. Proforma of Declaration of Black Listing/ Holiday Listing (**Annexure D**) - duly filled, signed and stamped, scanned and uploaded **(YES/NO)**.
4. Bidder Information (**Annexure - E**) - put **√ mark** in front of your confirmation, signed and stamped, scanned and uploaded **(YES/NO)**.
5. BID CONFIRMATION (MORE THAN 5 LAKHS) (**Annexure F**)- duly filled, signed and stamped, scanned and uploaded. **(YES/NO)**
6. Bid security Declaration (**Annexure H**) - duly filled, signed and stamped, scanned and uploaded. **(YES/NO)**
7. Declaration on Code of Integrity for Public Procurement (**Annexure L**) - duly filled, signed and stamped, scanned and uploaded. **(YES/NO)**
8. Bank Guarantee (for EMD/ Security deposit) (**Annexure Q**)- duly filled, signed and stamped, scanned and uploaded. **(YES/NO)**
9. Declaration of compliance of order (**Annexure R**) - duly filled, signed and stamped, scanned and uploaded (YES/NO).
10. Instruction to the contractor for use of vehicles (**Annexure S**) - duly filled, signed and stamped, scanned and uploaded (YES/NO).
11. Form of declaration along with submission of tender (**Annexure W**) - duly filled, signed and stamped, scanned and uploaded (YES/NO).
12. Manual for use of scaffolding – **Annexure - AC**
13. Equipment/tools list is uploaded (YES/NO).
14. **Exceptions and deviations, if any, with reference to the Clause No. and page No. of Tender shall be submitted as a separate statement (Deviation Statement)**

Enclosed the tender documents signed & sealed in all pages (Tender Notice, Scope of Work, Conditions of Contract, Copies of Experience Certificate, Work Orders, etc.)

Signature of the Tenderer :

Name of the Tenderer :

Address :

Place:

Date:

This Document to be Signed and Stamped by Bidder on All Pages and Submitted along with the E-Tender

ANNEXURE – A

ESI, PF, LABOUR LAW ETC. – REQUIREMENTS

1. ESI As per the ESI Act 1948

The Contractor shall enroll all his men deployed for the work in the ESI scheme. Registration for all workmen under ESI scheme is also to be complied with.

2. Safety Regulations and General Conditions of Contract

The Contractor should be strictly abide all the safety regulation of HOC specified in GCC. Contractor should obtain necessary safety work permit from authorised officer before starting the work every day, in every shift.

3. Workmen Compensation

It will be your responsibility to meet all claims for compensation under workmen's Compensation Act 1923. ESI or under any other law in respect of sickness, accidents injury or death suffered by workmen engaged by you for carrying out the work. It shall be the sole responsibility of the contractor to comply with Employee's State Insurance Act 1948. You will also be responsible and liable in respect of claims for damage to property or persons arising from or in the course of execution of the contract work undertaken by you. You hereby agree that you shall keep HOC fully indemnified in respect of claims under the Workmen Compensation Act and all other claims aforesaid and you shall not under any circumstances raise any dispute with regard to the same.

4. Personal Protective Equipments (PPE)

You are requested to use personal protective equipment such as

1. Safety Helmet
2. Safety belts
3. Welder's Personal Protective equipment like goggles, gloves, shoes and face shield

As a measure to contain the spread of COVID-19, the following PPEs are essentially required to be provide to your workers:

1. Face Mask
2. Face Shield
3. Gloves

Also all your workers are to be subjected to temperature screening at Security, hand wash at the entrance, maintain physical distancing as far as possible.

You shall strictly instruct your workers not to spit in the public places and area of work.

It is the basic responsibility of the Contractor to provide all the safety gadgets (PPEs) as mentioned above to all their Supervisors/Workers.

And without these PPEs Contractor will not be allowed to carryout any job, which may please be noted.

5. Labour Laws & Provident Fund

You are requested to possess:

1. A License from the Labour Dept. under Contract Labour (Regulation and Abolition) Act 1970.
2. A separate PF Code under the Employee PF Act – 1952 and also furnish details of CPF Contribution payment made with the Regional PF Commissioner.

6. Guidelines to Contractors/Suppliers for Environmental Protection

- Contractors/suppliers shall ensure that impact due to the environmental aspects of goods and services is minimum.
- Effluent generated during the activity is to be routed to effluent treatment plant as per the instructions given by the Engineer-in-Charge.
- Hazardous waste generated during the activity is to be disposed in accordance with Hazardous Waste (Management & Handling) Rules as per the instructions given by the Engineer-in-Charge.
- All other solid wastes are to be disposed as per the instructions given by the Engineer-in-Charge.
- Avoid leaks and spills to minimise the impact on environment. In the case of any leaks/spills immediately inform Engineer-in-Charge to take appropriate corrective action.
- If the item handled falls under hazardous category, please ensure that:
 - a. Product literature including MSDS/TREM Card etc. accompany the consignment.
 - b. Packing and labeling are in accordance with the requirement of Manufacture, Storage & Import of Hazardous Chemicals Rules.

7. B. Confined Space Entry

If entry into a confined space (like inside entry to columns, heat exchanger shells, vessels, filters, spheres, bullets, boilers etc.) is a part of the work, contractor should register the name and other details in the register kept for the purpose each time. All safety regulation has to be adhered and permit to be obtained before entering into a confined space. Also after coming out from the confined space, the worker/supervisor has to report to the Engineer-in-Charge each time without fail. Any deviation in this register will not be permitted in any case.

ANNEXURE - B

LABOUR LAWS – CHECK LIST

1. Contract Labour (Regulation & Abolition) Act – 1970

Contractor should possess Labor License if he engages more than 19 workers at a time for a particular job.

2. ESI Act 1948

A worker whose wages (excluding Overtime Wage) does not exceed `15,000/- per month will be covered under the Act. Please note that workers can be allowed to work inside the Factory Premises / Township only after completing the following procedures:

- a. Those labourers already registered under ESI should submit their ESI card along with a copy.
- b. For new cases, the following documents are to be produced for registering under the Act:
 1. Registration form duly filled in by the worker concerned.
 2. Proof of identity – Address and Age (SSLC / Birth Certificate / Driving License / Passport, etc.)
 3. Family photograph – 2 Nos.
- c. For those workers whose wages is claimed to be more than `15,000/- per month should produce the following documents:
 1. An undertaking from his employer that his wage is more than `15,000/- per month and he is not required to be covered under ESI Act is to be submitted.
 2. A copy of the Personal Accident Policy showing that the worker is covered under the policy.

3. The EPF & MP Act – 1952

- a. The concerned worker has to file nomination form
- b. If already covered under the Act and Scheme, the related document to be submitted.

4. Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act 1979

The contractor should possess License under this Act, if he engages 05 or more interstate migrant workmen on any day.

ANNEXURE - C

SAFETY, HEALTH & ENVIRONMENT (SHE) CONDITIONS

The following Safety, Health and Environment conditions shall apply to the Contractor those who are working at HOCL, Ambalamugal.

- Shall ensure the availability and suitability of qualified and experienced personnel at the site for effective and efficient SHE management.
- Shall ensure that the equipment, materials, consumables are in conformity with the requirements.
- Shall ensure that all equipments/scaffolding used are having adequate stability.
- Shall ensure that appropriate and adequate PPEs are provided and worn by the personnel involved.
- Shall ensure that safety signs are posted as appropriate to the activity/hazard as required.
- Shall ensure the removal of material from site, which do not conform to the requirements.
- Shall ensure no adverse impact on environment due to activities.
- Shall maintain proper close supervision over their employee's activities.
- Shall identify the hazards related to their nature of work being executed and develop methods to eliminate/control those hazards where required to prevent any unwanted incidents/accident.
- Shall educate/train the workers throughout the work and improve their SHE awareness.
- Shall ensure adequate hygiene, (i.e. cleanliness, environment free from dust and fume, proper lighting and drinking water to all worker employed by the contractor).
- Shall ensure regular controls are in place for the following by doing regular checks/inspections but not limited to the following:
 - Vehicles & equipments
 - Tools, equipments, lifting appliances
 - Safety equipments
 - Fire protection
- Shall at his own expenses from time to time and whenever required clear away and remove all rubbish/scrap/unwanted materials from its work area to designated area.
- Shall report all incidents/accidents occurring if any connected with the job. The Contractor shall prepare and submit an incident/accident report to OWNER's Safety Department.

ANNEXURE - D

PROFORMA OF DECLARATION OF BLACK LISTING/HOLIDAY LISTING

In the case of a Proprietary Concern:

I hereby declare that neither I in my personal name or in the name of my Proprietary concern M/s. _____ which is submitting neither the accompanying Bid/Tender nor any other concern in which I am proprietor nor any partnership firm in which I am involved as a Managing Partner have been placed on black list or holiday list declared by any Government Public Sector company (CPSU) or any of the administrative ministries, except as indicated below:

(Here give particulars of blacklisting or holiday listing, and in absence there of state "NIL")

In the case of a Partnership Firm:

We hereby declare that neither we, M/s. _____, submitting the accompanying Bid/Tender nor any partner involved in the management of the said firm either in his individual capacity or as proprietor or managing partner of any firm or concern have or has been placed on blacklist or holiday list declared by any Government Public Sector Company (CPSU) or any of the administrative ministries, except as indicated below:

(Here give particulars of blacklisting or holiday listing, and in absence there of state "NIL")

In the case of Company:

We hereby declare that we have not been placed on any holiday list or black list declared by any Government Pubic Sector Company (CPSU) or any of the administrative ministries, except as indicated below:

(Here give particulars of blacklisting or holiday listing, and in absence there of state "NIL")

It is understood that if this declaration is found to be false in any particular, Hindustan Organic Chemicals Limited or its Administrative Ministry, shall have the right to reject my/our bid, and if the bid has resulted in a contract, the contract is liable to be terminated.

PLACE:

DATE:

SIGNATURE OF THE BIDDER

अनुबंध “ क”

इएसआई,पीएफ श्रम कानून आदि - अपेक्षाएं

1.इएसआई अधिनियम 1948 के अनुसार इ एस आई

ठेकेदार काम के लिए तैनात अपने सभी कामगारों को इएसआई योजना के तहत नामित करेगा । इएसआई योजना के अधीन सभी कामगारों के लिए पंजीकरण का अनुपालन किया जाना है॥

2.संविदा की सुरक्षा विनियम और सामान्य शर्तें

ठेकेदार संविदा के सामान्य शर्तों में निर्धारित एचओसी के सभी सुरक्षा विनियमों का संख्ती से पालन करेगा । ठेकेदार को प्रतिदिन प्रतिशिफ्ट में काम शुरू करने के पहले प्राधिकृत अधिकारी से आवश्यक सुरक्षा कार्य परमिट प्राप्त करना चाहिए ।

3. कामगार क्षतिपूर्ति

कर्मचारी क्षतिपूर्ति अधिनियम 1923 के तहत क्षतिपूर्ति के लिए सभी दावों का वहन करना आपका दायित्व होगा । कार्य करने के लिए आपके द्वारा तैनात कामगार बीमारी,दुर्घटना,चोट या मृत्यु से पीडित होने में इ एस आई या अन्य किसी नियम के अधीन दायित्व आपका रहेगा । कर्मचारी राज्य बीमा अधिनियम 1948 का अनुपालन करना ठेकेदार का पूर्ण दायित्व होगा। आपके द्वारा लिए गए संविदा कार्य के निष्पादन के दौरान होनेवाले संपत्ति या व्यक्तियों के नुकसान हेतु दावे के लिए आप उत्तरदायी और ज़िम्मेदार रहेगा । आप एतद्वारा सहमत हैं कि आप कामगार क्षतिपूर्ति अधिनियम और उपर्युक्त अन्य सभी दावों के तहत एच ओ सी को पूर्ण रूप से मुक्त करेंगे और आप इस संबंध में किसी भी परिस्थिति में कोई तर्क नहीं उठाएगा ।

4.निजी सुरक्षा उपकरणों (पी पी इ)

आप से अनुरोध है कि निम्नलिखित निजी सुरक्षा उपकरणों का उपयोग करें

- 1.सेफ्टी हेलमेट
- 2.सेफ्टी बेल्ट
- 3.वेलडरों की निजी सुरक्षा उपकरणों जैसे गोग्लस ,ग्लौस ,शूप्स एण्ड फेस शील्ड
4. गोग्लस और फेस शील्ड

यह ठेकेदार का मूल दायित्व है कि वे अपने सभी पर्यवेक्षकों/कामगारों को ऊपर कहे गए सभी सुरक्षा उपकरणों (पी पी ई) प्रदान करें ।

यह भी कृपया नोट करें कि इन सुरक्षा उपकरणों के बिना ठेकेदार को कोई काम करने की अनुमति नहीं दी जाएगी ।

5.श्रम कानून एवं भविष्य निधि

आपसे अनुरोध है कि आपके साथ -

- 1.श्रम विभाग से संविदा श्रम (विनियम एवं उन्मूलन) अधिनियम 1970 के तहत एक लाइसेंस।
- 2.कर्मचारी भविष्यनिधि अधिनियम 1952 के अधीन एक अलग पी एफ कोड हो और क्षेत्रीय भविष्य निधि आयुक्त के साथ किए गए सीपीएफ अंशदान के भुगतान संबंधी विवरण भी प्रस्तुत करें ।

6 पर्यावरण संरक्षण के लिए ठेकेदारों/आपूर्तिकर्ताओं को दिशा - निर्देश :

* ठेकेदार/आपूर्तिकर्ता यह सुनिश्चित करें कि सामग्रियों और सेवाओं की वजह से पर्यावरण पहलुओं पर प्रभाव न्यूनतम हो |

* इस गतिविधि के दौरान सृजित एफ्लुवेन्ट को इंजीनियर प्रभावी द्वारा दिए गए अनुदेशों के अनुसार एफ्लुवेन्ट ट्रीटमेंट प्लांट से छोड़ दें।

* इस गतिविधि के दौरान सृजित जोखिम अवशिष्ट निपटान को प्रभारी इंजीनियर द्वारा दिए गए अनुदेशों के अनुसार जोखिम अवशिष्ट (प्रबंधन एवं उपयोग) नियमानुसार करना है |

* अन्य सभी ठोस अवशिष्टों को प्रभारी इंजीनियर द्वारा दिए गए अनुदेशों के अनुसार निपटाना है |

* पर्यावरण पर प्रभाव कम करने के लिए लीक एवं स्पिल से बचे | यदि कोई लीक / स्पिल हो तो सुधार कार्य करने के लिए प्रभारी इंजीनियर को तत्काल सूचित करें |

* यदि उपयोगित मद् जोखिम वर्ग में आता है तो यह सुनिश्चित करें कि :-

क) एम एस डी एस / ट्रेम कार्ड आदि सहित उत्पाद संबंधी विवरण सामग्री के साथ होना चाहिए |

ख) जोखिम रसायन नियमावली के निर्माण, भंडार एवं निर्यात की अपेक्षा के अनुसार पैकिंग और लेबलिंग होना चाहिए |

7. सीमित क्षेत्र प्रवेश

यदि काम के संबंध में सीमित क्षेत्र (जैसे कॉलम्स, हीट एक्सचेंजर, शेलस, वेसलस, फिल्टर्स, स्पीरिस, बुलेटस, बोइलर आदि) में प्रवेश करना है तो ठेकेदार को इस उद्देश्य के लिए रखे गए रजिस्टर पर नाम और अन्य विवरण प्रत्येक समय दर्ज करना चाहिए | सीमित क्षेत्र में प्रवेश करने के पहले सभी सुरक्षा विनियमों का पालन करना है और परमिट प्राप्त करना है | सीमित क्षेत्र से बाहर आते समय कामगार/ पर्यवेक्षक को प्रत्येक समय प्रभारी इंजीनियर को अवश्य रिपोर्ट करना है | किसी भी मामले में इस रजिस्टर से किसी प्रकार की विचलन की अनुमति नहीं दी जाएगी |

अनुबंध - 'ख'

विषय : श्रम कानून - जाँच सूची

1. संविदा श्रम (विनियम और उन्मूलन) अधिनियम -1970

प्रत्येक काम के लिए एक ही समय 19 से अधिक मजदूरों को लगाते समय ठेकेदार को श्रम लाइसेंस प्राप्त करना चाहिए।

2. कर्मचारी राज्य बीमा अधिनियम 1948

कामगार जिनका वेतन (समयोपरि भत्ता छोड़कर) प्रतिमाह 15000/- से अधिक न हो, इस अधिनियम के तहत आता है। कृपया ध्यान दें कि निम्नलिखित कार्यकलाप पूरा करने के बाद ही फैक्टरी परिसर/टाऊनशिप में कामगारों को काम करने की अनुमति दिया जाएगा।

क) इ एस आई के अधीन पहले ही पंजीकृत मजदूरों को इ एस आई कार्ड और उसकी एक प्रति प्रस्तुत करना चाहिए।

ख) नए मामले में, इस अधिनियम के अधीन पंजीकृत करने के लिए निम्नलिखित दस्तावेजें प्रस्तुत करना चाहिए।

1. संबंधित कामगार द्वारा यथाविधि भरे हुए पंजीकृत प्रपत्र।

2. पहचान के लिए प्रमाण - पता एवं आयु (एस एस एल सी, जन्म प्रमाण पत्र, ड्राइविंग लाइसेंस, पासपोर्ट आदि)।

3. परिवार के दो फोटो -

ग) ऐसे कामगार जिनका वेतन प्रतिमाह 15000/ से अधिक दावा दे रहे हैं, निम्नलिखित दस्तावेजें प्रस्तुत करनी चाहिए।

1. उनके नियोक्ता से यह वचनबंध प्रस्तुत करना है कि प्रतिमाह उनका वेतन रू. 15000/ से अधिक है और उन्हें इ एस आई अधिनियम के तहत शामिल करने की आवश्यकता नहीं है।

2. निजी दुर्घटना पॉलिसी की एक प्रति इसमें यह दर्शाता है कि कामगार इस पॉलिसी की सुरक्षा हैं।

3. इ पी एफ और एम पी अधिनियम 1952

क) संबंधित कामगार को नामांकन प्रपत्र फाईल करना है।

ख) यदि प्रस्तुत अधिनियम और योजना के तहत पहले ही नामित हो, तो संबंधित दस्तावेज प्रस्तुत करें।

4. अन्तर राज्य प्रवासी कामगार (रोजगार और सेवा शर्तों के विनियम) अधिनियम 1979

यदि ठेकेदार किसी भी दिन 05 या उससे अधिक अन्तर राज्य प्रवासी कामगार को काम के लिए लगाते हो तब उन्हें प्रस्तुत अधिनियम के तहत लाइसेंस प्राप्त करना चाहिए।

सुरक्षा, स्वास्थ्य एवं पर्यावरण (एस एच ई) की शर्तें

एच ओ सी एल, अंबलमुगल में काम करने वाले ठेकेदारों के लिए निम्नलिखित सुरक्षा, स्वास्थ्य एवं पर्यावरण शर्तें लागू होंगे।

1. सुरक्षा, स्वास्थ्य एवं पर्यावरण के प्रभावी एवं दक्ष प्रबंधन के लिए कार्यस्थल में योग्य एवं अनुभवी व्यक्तियों की उपलब्धता एवं उपयुक्तता सुनिश्चित करेंगे।
2. आवश्यकताओं के अनुरूप उपकरण, सामग्री और उपभोज्य सुनिश्चित करेंगे।
3. उपयोग किए जाने वाले सभी उपकरण / पाइ की सामग्रियों को पर्याप्त मजबूती / टिकाऊपन सुनिश्चित करेंगे।
4. यह सुनिश्चित करेंगे कि उचित एवं पर्याप्त पी पी ई प्रदान किए जाएंगे और संबंधित व्यक्तियों द्वारा पहने जाएंगे।
5. आवश्यकतानुसार कार्यकलाप/ जोखिम के उपयुक्त सुरक्षा चिहनों को लगाना सुनिश्चित करेंगे।
6. कार्यस्थल से ऐसे सामग्री जो आवश्यकता के अनुरूप नहीं हो, को हटाया जाना सुनिश्चित करेंगे।
7. यह सुनिश्चित करेंगे कि कार्यकलाप के कारण पर्यावरण में कोई प्रतिकूल प्रभाव न हो।
8. अपने कर्मचारियों की गतिविधियों पर उचित एवं सूक्ष्म पर्यवेक्षण सुनिश्चित करेंगे।
9. कार्यान्वित किए जा रहे कार्य की प्रकृति संबंधी दुर्घटनाओं का पहचान करेंगे और जहां अपेक्षित हो किसी प्रकार की घटनाओं / दुर्घटनाओं को रोकने के लिए ऐसी दुर्घटनाओं को दूर करने / नियंत्रित करने के उपाय विकसित करेंगे।
10. कर्मचारियों को कार्य के दौरान पर शिक्षित / प्रशिक्षित करना सुनिश्चित करेंगे और उनके एस एच ई जागरूकता में सुधार लाना भी सुनिश्चित करेंगे।
11. पर्याप्त स्वास्थ्य की व्यवस्था सुनिश्चित करेंगे (यानि सफाई, धूल एवं धूआं मुक्त पर्यावरण, उचित प्रकाश की व्यवस्था और ठेकेदार द्वारा काम के लिए नियुक्त सभी कर्मचारियों को पेय जल)
12. नियमित जांच / निरीक्षण करके निम्नलिखित के लिए नियमित नियंत्रण सुनिश्चित करेंगे लेकिन केवल निम्नलिखित के लिए सीमित नहीं करेंगे।
 - * वाहनों एवं उपकरणों
 - * टूल्स, उपकरण, लिफ्टिंग उपकरणों
 - * सुरक्षा उपकरणों
 - * आग संरक्षण
13. समय – समय पर और जब कभी आवश्यक हो, अपने व्यय पर कार्य स्थल से निर्दिष्ट क्षेत्र की ओर सभी कूड़े/ रद्दी/अनुपयोगी सामग्रियाँ निकाल देंगे और हटा देंगे।
14. प्रदत्त कार्य के संबंध में घटित होनेवाली सभी घटनाओं / दुर्घटनाओं यदि कोई हो तो, रिपोर्ट करेंगे। ठेकेदार घटना / दुर्घटना रिपोर्ट तैयार करके मालिक (ऑनेर्स) सेफ्टी विभाग में प्रस्तुत करेंगे।।

अनुबंध डी
काली सूची/अवकाश सूची की घोषणा संबंधी पत्र

स्वामित्व प्रतिष्ठान के संबंध में :-

मैं एतद्वारा घोषणा करता/ करती हूँ कि न तो मैं अपने नाम पर या मेरे स्वामित्व प्रतिष्ठान सर्वश्री के नाम पर जिसने संलग्न बोली /निविदा प्रस्तुत न कर रहे हैं या मेरे स्वामित्व में या किसी अन्य साझेदार कंपनी जिसमें मैं प्रबंध भागीदार के रूप में हो, वे नीचे सूचित को छोड़कर किसी केंद्रीय सरकारी सार्वजनिक कंपनी (सीपीएसयू) या किसी प्रशासनिक मंत्रालय द्वारा घोषित काली सूची या अवकाश सूची में न पड़े हैं। (यहाँ काली सूची या अवकाश सूची का विवरण दें , और उसके अभाव में शून्य सूचित करें)

साझेदार कंपनी के संबंध में

हम एतद्वारा घोषित करते /करती हैं कि न तो हम, सर्वश्री ने प्रस्तुत बोली/निविदा प्रस्तुत करता है या कंपनी से शामिल किसी भागीदार न उनके वैयक्तिक क्षमता या स्वामित्व के रूप में या किसी कंपनी/ कारोबार के प्रबंधन भागीदार के रूप में नीचे सूचित को छोड़कर किसी केंद्रीय सरकारी सार्वजनिक कंपनी (सीपीएसयू) या किसी प्रशासनिक मंत्रालय द्वारा घोषित काली सूची या अवकाश सूची में न पड़े हैं। (यहाँ काली सूची या अवकाश सूची का विवरण दें , और उसके अभाव में शून्य सूचित करें)

कंपनी के संबंध में

हम एतद्वारा घोषित करते/ करती हैं कि हमें नीचे सूचित को छोड़कर किसी केंद्रीय सरकारी सार्वजनिक कंपनी (सीपीएसयू) या किसी प्रशासनिक मंत्रालय द्वारा घोषित काली सूची या अवकाश सूची में न पड़े हैं। (यहाँ काली सूची या अवकाश सूची का विवरण दें , और उसके अभाव में शून्य सूचित करें)

यह समझता हूँ कि यदि इस घोषणा के किसी भी विवरण गलत हो जाने पर हिंदुस्तान ओर्गेनिक केमिकल्स लिमिटेड या इसके प्रशासनिक मंत्रालय को मेरा/हमारा बोली अस्वीकार करने का अधिकार है और यदि बोली ठेके के रूप में हो जाने पर , प्रस्तुत ठेका समाप्त करने का अधिकार है।

स्थान:

बोलीदाता का हस्ताक्षर :

तिथि:

यदि हिन्दी और अंग्रेज़ी पाठ में भिन्नता हो तो, अंग्रेज़ी पाठ प्रबल होगा।

In case of variation between Hindi and English version, English version will prevail

ANNEXURE - E

ANNEXURE TO BID AGAINST TENDER No: _____

(KINDLY FILL THIS SHEET AND SUBMIT IN -COMMERCIAL/TECHNICAL BID)

Name of Bidder:		
Sr. No.	Commercial Clauses	Bidder Confirmation (Please put v in front of your confirmation)
1	Whether bidder (a proprietary concern, Partnership Firm, Company) is currently on holiday list/black list/de-listed or has been put on holiday/blacklisted/de-listed at any PSU/govt. Organization. If so, give details.	<input type="checkbox"/> Yes, We are on holiday List/Black List/De-List <input type="checkbox"/> No
2	Whether the party is registered under Micro/Small/Medium Enterprises act 2006 (Please furnish the proof)	<input type="checkbox"/> Micro <input type="checkbox"/> Medium <input type="checkbox"/> Small <input type="checkbox"/> No
	ii Status of MSE Bidder	<input type="checkbox"/> Manufacturer <input type="checkbox"/> Services <input type="checkbox"/> Not Applicable
	iii Whether MSE bidder is offering product manufactured by him/her	<input type="checkbox"/> Yes <input type="checkbox"/> No
3	All MSE bidders shall register / declare their UAM Number on CPP Portal and copy of this registration / declaration shall be attached with the offer; failing which such bidders will not be able to enjoy benefits as per PP Policy for MSME order, 2012. <u>SSI/MSME/NSIC/UAM /DIC registration certificate</u>	<input type="checkbox"/> Mention UAM Number _____ <input type="checkbox"/> Not Applicable
	ii Submitted valid document against clause no 3 (i)	<input type="checkbox"/> Submitted <input type="checkbox"/> Not Applicable
4	Whether the proprietor of "MSME" enterprise is from SC/ST category (Please attach caste certificate issued by competent authority)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	ii Whether the proprietor of "MSME" enterprise is woman (i.e. Woman proprietorship, or holding minimum 51% shares in case of Partnership/Private Limited Companies)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	iii Submitted certificate against clause no 4 (ii)	<input type="checkbox"/> Submitted <input type="checkbox"/> Not Applicable
5	AGREED TO ALL TERMS AND CONDITIONS OF ENQUIRY: It is hereby stated that the quotation/offer submitted is in full compliance with the documents issued against the enquiry and also further confirmed that there is no deviation from all the terms and conditions as per the enquiry. Non-acceptance or deviation to HOCL's standard terms and conditions mentioned in enquiry documents may lead to rejection of offer, no correspondence shall be done for clarifications	<input type="checkbox"/> Agreed <input type="checkbox"/> Not Agreed
DATE:		SIGN AND STAMP OF BIDDER

ANNEXURE (F)

(For Purchase Order/ Work Order with estimated value more than FIVE Lakhs)

**ANNEXURE TO BE SUBMITTED ALONG WITH THE BID AGAINST TENDER
NO _____**

(KINDLY FILL AND SUBMIT ALONG WITH OMMERCIAL/TECHNICAL BID)

Name of the Bidder:		
Sr No.	Commercial Clauses	Bidder Confirmation(Please put \surd)
1	Please mention whether you are a Class-I/Class II Local supplier.(Please see the definition given below)	Class I <input type="checkbox"/> Class II <input type="checkbox"/>
2	Specify the percentage (%) of local content.	----- %
3	Details of location at which the local value addition is made	
4	Mention whether the product offered is manufactured in India under a license from a foreign who hold intellectual property rights and there is a technology collaboration agreement / Transfer of technology agreement.	Yes / No

SELF DECLARATION OF LOCAL CONTENT

We hereby declare that the percentage (%) of local content specified against mentioned against Sr.No.2 is _____%.

We also understand that submitting False self-declarations and auditors will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a Bidder or its successors can be debarred for up to Two Years as per the Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under Law.

DATE:

SGNATURE AND STAMP

Definitions

Local Content: - The amount of value added in India(Total value of item procured minus the value of imported content in the item(including all customs duties) as a proportion of total value, in percentage.

Class I Local Supplier: - Supplier or service provider whose goods AND services or works offered for procurement has local content equal to or more than 50%.

Class II Local Supplier: - Supplier or service provider whose goods AND services or works offered for procurement has local content more than 20% but less than 50 %.

Purchase Preference: -Will be as per the applicable Government order.

DATE:

SIGNATURE AND STAMP

ANNEXURE – H

BID SECURITY DECLARATION

**ANNEXURE TO BE SUBMITTED ALONG WITH THE BID AGAINST TENDER
NO _____**

I/We.....hereby declare that:

- 1. I will not revoke the tender within the stipulated period/ validity period OR increase the quoted rates.**
- 2. I will commence the work on intimating to start the work/ on receipt of Letter of Indent.**
- 3. I will not withdraw or amend the tender or impair or derogate from the tender in any respect within the period of validity of the tender.**
- 4. I will furnish the required performance security within the specified period.**

NAME AND ADDRESS OF THE BIDDER

PLACE:

DATE:

SIGNATURE AND STAMP OF THE BIDDER

ANNEXURE – L

DECLARATION ON CODE OF INTEGRITY FOR PUBLIC PROCUREMENT (COIPP)

I, hereby declare that, I shall observe the highest standard of ethics and shall not indulge in the following prohibited practices, either directly or indirectly, at any stage during the period of this distributorship or during execution of resultant contracts:

- i. “Corrupt practice” : making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii. “Fraudulent practice” : any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii. “Anti-competitive practice” : any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act,2002, between two or more bidders, with or without the knowledge of HOCL that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non competitive levels;
- iv. “Coercive practice” : harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;
- v. “Conflict of interest” : participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of procuring entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from HOCL with an intent to gain unfair advantage in the procurement process or for personal gain;

And

- vi. “Obstructive practice” : materially impede HOCL’ s investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and / or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the procuring entity’s rights of audit or access to information;

I, further declare that:

- i. I shall be obliged to suo-moto proactively declares any conflicts of interest (coming under the definition mentioned above – pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract and failure to do so would amount to violation of this code of integrity;
- and
- ii. I, in any previous transgressions of such a code of integrity with any entity in any country during the last three years or I have been debarred by any other procuring entity. Failure to disclose, would amount to violation of this code of integrity;

Yours faithfully,

Signature and Stamp of bidder :

Name of the Bidder :

Place :

Date :

ANNEXURE - S

INSTRUCTIONS TO THE CONTRACTORS FOR USE OF VEHICLES

INSTRUCTIONS TO THE CONTRACTORS FOR USE OF VEHICLES, LIFTING MACHINES, LIFTING TOOLS & TACKLES, EARTH MOVING EQUIPMENT AND ENGINE OPERATED EQUIPMENT

1. Lifting machines, chains ropes and lifting tackles

Contractor shall possess valid certificates, for lifting machines, chains blocks, ropes, slings, Dshackles, belts and other lifting tools & tackles used for working inside HOCL, Ambalamugal.

2. Insurance for special type vehicles

Contractor shall possess valid certificates, for vehicles which are used for working inside HOCL, Ambalamugal.

3. Driving License

The Driver / Operator shall possess relevant valid certificates, for vehicles which are used for working inside HOCL, Ambalamugal.

4. Certificate of Fitness

Contractor shall possess valid certificates, for transport vehicles which are used for working inside HOCL, Ambalamugal.

5. Vehicle Entry Permit

Vehicle entry permit shall be taken for use of Mobile equipment inside plant area.

6. Spark Arrestor

Spark arrestor shall be provided for all vehicles / engine operated equipment which are used for working inside plant area.

NOTE:

1. The vehicle / mobile equipment brought inside HOCL premises shall be maximum 10 years from the date of registration.

2. Spark ignited equipment (including petrol driven engines) are not permitted inside PESO Licensed area.

Please note that Mobile Lifting Machines like Mobile cranes, Fork lift, Manlift, Dozers and Excavator shall be allowed to work inside the Factory Premises only after verifying the following:

I. For Mobile Cranes

Shall ensure regular controls are in place for the following by doing regular checks / inspections but not limited to the following:

- a. RTO license for operating crane available

- b. Record of eye examination / re-examination carried out as per Kerala factories Rules 1957
- c. Availability of load chart inside operator cabin in such a way that operator can read and understand load chart.
- d. Condition of hook and latch.
- e. Condition of wire ropes / slings.
- f. Condition of over hoist limit switch (Anti two blocks) and overload alarm.
- g. SWL marked on all hooks.
- h. Tyre condition.
- i. Third party inspection certificate of crane and lifting tools and equipment.
- j. Condition of Horn & Reverse horn.
- k. Condition in hydraulic cylinders and outriggers.
- l. Guards in moving and rotating parts.
- m. Availability of Safe Load indicator (SLI) in operator cabin.

II. For Fork Lift

Shall ensure regular controls are in place for the following by doing regular checks / inspections but not limited to the following:

- a. RTO License for operating Excavator.
- b. Condition of Fork.
- c. Condition in hydraulic cylinders for any leakage.
- d. Tyre condition.
- e. Condition of Horn & Reverse horn.
- f. Condition of overhead guard.

III. For Man Lift

Shall ensure regular controls are in place for the following by doing regular checks / inspections but not limited to the following:

- a. RTO license for operating crane available
- b. Record of eye examination / re-examination carried out as per Kerala factories Rules 1957
- c. Condition of Platform and guard rails.
- d. Condition of main boom and tip boom.
- e. Tyre condition.
- f. Third party inspection certificate of crane and lifting tools and equipment
- g. Condition of Horn & Reverse horn.
- n. Condition in hydraulic cylinders and outriggers.

IV. For Excavator / Dozer

Shall ensure regular controls are in place for the following by doing regular checks / inspections but not limited to the following:

- a. RTO License for operating Excavator.
- b. Condition of Loader bucket.
- c. Condition of Boom.
- d. Hydraulic oil level.
- e. Condition in hydraulic cylinders for any leakage.
- f. Tyre condition.
- g. Condition of Horn & Reverse horn.
- h. Condition of backhoe pins and bushings.
- i. Condition of swing tower.

ANNEXURE – Q
BANK GUARANTEE (FOR EMD / SECURITY DEPOSIT)

Bank Guarantee No.
Bank Guarantee issue date
Bank Guarantee amount
Bank Guarantee Period from
To,
Hindustan Organic Chemicals Limited
Ambalamughal – 682302,
Ernakulam District,
Kerala

In consideration of Hindustan Organic Chemicals Limited having its registered office at Ambalamughal – 682302, Ernakulam District, Kerala (hereinafter referred to as HOCL, which expression shall include all its successors, administrators, executors and assigns) having issued an advertisement for open tender Enquiry No. _____ dated _____ for _____.
_____ (Name of the Party) having its Registered Office at (Full address of the party) (hereinafter referred to as _____, which expression shall include all its successors, administrators, executors and assigns) against the submission of the Bank Guarantee of Rs. _____/- (Rupees _____ only) for Earnest Money deposit / Security Deposit (strike out whichever is not applicable).

We _____ (Name of the Bank and Full Address) having its Registered Office at _____ (Full Bank Address) (hereinafter referred to as The Bank which expression shall include all its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay HOCL immediately on first demand in writing and any / all money(s) to the extent of Rs. _____ /- (Rupees _____ only), without any demur, reservation, contest or protest and / or without any reference to the _____ (Name of the party). Any such demand made by HOCL on the Bank by serving a written notice shall be conclusive and binding, without any proof, on the Bank as regards the amount due and payable, notwithstanding any dispute(s) pending before any court, tribunal, arbitrator, sole expert, conciliator or any other authority and / or any other matter or thing whatsoever, as liability under these presents being absolute and unequivocal. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable until it is discharged by HOCL in writing but not later than _____. This Guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the Customer and shall remain valid, binding and operative during its currency against the Bank against any outstanding bill remaining unpaid or towards loss or damage caused to or suffered or would be caused to or suffered by reason of any breach by the said Customer of any of the terms or conditions agreed between them.

The Bank also agrees that HOCL at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the _____ (Name of the Party) and notwithstanding any security or other guarantee that HOCL may have in relation to the _____ (Name of the party) liabilities.

The Bank further agrees that HOCL shall have fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said supply or to extend time of performance by the said _____ (Name of the Party) from time to time or to postpone for any time or from time to time exercise of any of the powers vested in HOCL against the _____ (Name of the Party) and to forebear or enforce any of the terms and conditions relating to the said supply and we shall not be relieved from our liability by reasons of any such variation, or extension being granted to the said _____ (Name of the Party) or for any forbearance, act or omission on the part of HOCL or any indulgence by HOCL to the said _____ (Name of the Party) or any such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

The Bank further agree that the Guarantee herein contained shall remain in full force during the period that is taken for the finalization of the tender enquiry No. _____ dated _____ all dues of HOCL under or by virtue of this supply have been fully paid any its claim satisfied or discharged or till HOCL discharges this Guarantee in writing, or till _____ whichever is earlier. However, HOCL shall have the right to lodge claim up to 6 months from expiry of validity date of Bank Guarantee.

This Guarantee shall not be discharged by any change in our constitution, in the constitution of Customer any or that of HOCL.

The Bank confirms that this Guarantee has been issued with observance of appropriate laws of the country of issue.

The Bank also agrees that this Guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of Indian courts at Mumbai, India.

Not with standing anything contained hereinabove, our liability under this guarantee is limited to Rs. _____ /- (Rupees _____ only) and our guarantee shall remain in force up to _____ unless notice of demand to enforce a claim under this guarantee is served upon us on or before _____. All your rights under the above guarantee shall be forfeited and we shall be relieved and discharges from all liabilities from all liabilities there under.

We, _____ (Name of the Bank and Full address), hereby undertake not to revoke this guarantee during its currency except with the previous consent of HOCL in writing.

Not with standing anything contained here above.

1. Our liability under this bank guarantee shall not exceed Rs. _____ /- (Rupees _____ only).

2. This bank guarantee shall be valid up to _____. We are liable to pay the guarantee amount or any part thereof under this bank guarantee only and only if you serve upon us a written claim or demand on or before.

Place:

Date:

Annexure - R

Declaration of Compliance of Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017

This declaration must form part of all tenders & it contains general information and serves as a declaration form for all bidders. (Before completing this declaration, bidders must study the General Conditions, Definitions, Govt Directives applicable in respect of Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017& prescribed tender conditions).

DECLARATION BY AUTHORISED SIGNATORY OF THE FIRM

I, the undersigned,..... (full names), do hereby declare, in my capacity as of M/s(name of bidder entity), that:

1. The facts contained herein are within my own personal knowledge.
2. I have read the Order (Public Procurement No.1, 2 & 3) dtd 23 Jul 2020 & 24 Jul 2020 on the subject of Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017 regarding restrictions on procurement from a bidder of a country which shares a land border with India and comply to all the provisions of the Order.
3. I certify that M/s(name of bidder entity) is not from such a country or, is from such a country (strike out whichever is not applicable), has been registered with the Competent Authority. I further certify that M/S.....(name of the sub-contractor if any) is not from such a country or, is from such a country (strike out whichever is not applicable), has been registered with the Competent Authority. I hereby certify that this SUPPLIER fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority is attached].
4. I understand that the submission of incorrect data and / or if certificate / declaration given by M/s(name of bidder entity) is found to be false, this would be a ground for immediate termination and further legal action in accordance with law as per Clause 12 of the Public Order on Restrictions under Rule 144 (xi) of the General Financial Rules (GFRs), 2017.

AUTHORISED SIGNATURE:

DATE: _____

Seal / Stamp of Bidder

ANNEXURE – W
FORM OF DECLARATION ALONG WITH SUBMISSION OF TENDER

From

To

HINDUSTAN ORGANIC CHEMICALS LTD
Ambalamugal

1. I/We hereby declare that, for execution WORK of _____ as per Tender / NIT / RFQ No. _____, Date: _____, I / We have read, understood and agree to the scope of work, time schedule for completion of work. Period of contract, General Conditions of Contract, Special Conditions of Contract, Payment Terms, Specifications for materials and workmanship, Drawings, and other Documents and papers, all as detailed in the Tender Documents at the Schedule of Rates / Amount quoted by me / us for the above WORK in accordance with the above Tender / NIT / RFQ.
2. It has been explained to me / us that the time stipulated for completion of WORK in all respects and indifferent stages mentioned in the 'Time Schedule' of completion of WORK and signed and accepted by me / us is the essence of the CONTRACT. I / We agree that in case of failure on my / our part, to strictly observe the Time of Completion mentioned for WORK or any of them and to the final completion of WORK in all respects according to the Schedule set out in the said 'Time Schedule' of completion of WORK, and I / We agree fully to the recovery being made as specified (including Liquidated Damages clause) in the above Tender / NIT / RFQ.
3. I / We agree to pay the Earnest Money and Security Deposit and accept all the Terms and Conditions laid down in the Tender / NIT / RFQ in this respect.
4. In the case of acceptance of this tender, I / We hereby agree to abide by and full fill all Terms and Conditions of above Tender / NIT / RFQ and in default thereof, to forfeit and pay to HOCL such sums of money as are stipulated In Condition contained In General Tender Notice and Tender Documents.
5. If, I / We fail to commence the WORK specified in the Tender / NIT / RFQ, or I / We fail to deposit the amount of Security Deposit specified In Tender / NIT / RFQ, I / We agree that HOCL without prejudice to any other right or remedy be at liberty to forfeit the said Earnest Money in full, otherwise the said Earnest Money shall be retained by HOCL towards the Security Deposit specified in the Tender / NIT / RFQ. HOCL shall be at liberty to cancel the Tender / NIT / RFQ, if I / We fail to deposit the Security Amount as aforesaid or to execute an Agreement or to start WORK as stipulated In the Tender / NIT / RFQ Document.

Dated this _____ day of _____ 20____

Signature of tenderer(s) with seal of the firm



HINDUSTAN ORGANIC CHEMICALS LIMITED

MANUAL FOR SCAFFOLDING

SCAFFOLDING

Scope, application and definitions

(a) Scope and application. This applies to all scaffolds used in workplaces. It does not apply to crane or derrick suspended personnel platforms.

(b) Definitions.

Adjustable suspension scaffold means a suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.

Bearer (putlog) means a horizontal trans-verse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests and which joins scaffold uprights, posts, poles, and similar members.

Boatswains' chair means a single-point adjustable suspension scaffold consisting of a seat or sling designed to support one employee in a sitting position.

Body belt (safety belt) means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness means a design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders, with means for attaching it to other components of a personal fall arrest system.

Brace means a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

Bricklayers' square scaffold means a supported scaffold composed of framed squares

which support a platform.

Carpenters' bracket scaffold means a supported scaffold consisting of a platform supported by brackets attached to building or structural walls.

Catenary scaffold means a suspension scaffold consisting of a platform supported by two essentially horizontal and parallel ropes attached to structural members of a building or other structure. Additional support may be provided by vertical pickups.

Chimney hoist means a multi-point adjustable suspension scaffold used to provide access to work inside chimneys. (See "Multi-point adjustable suspension scaffold".) **Cleat** means a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Continuous run scaffold (Run scaffold) means a two- point or multi-point adjustable suspension scaffold constructed using a series of interconnected braced scaffold members or supporting structures erected to form a continuous scaffold.

Coupler means a device for locking together the tubes of a tube and coupler scaffold.

Crawling board (chicken ladder) means a supported scaffold consisting of a steel plates/grating with cleats spaced and secured to provide footing, for use on sloped surfaces such as roofs.

Deceleration device means any mechanism, such as a rope grab, rip-stitch lanyard, Specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard, which dissipates a substantial amount of energy during a fall arrest or limits the Energy imposed on an employee during fall arrest.

Double pole (independent pole) scaffold means a supported scaffold consisting of a platform(s) resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

Equivalent means alternative designs, materials or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

Exposed power lines means electrical power lines which are accessible to employees and which are not shielded from contact. Such lines do not include extension cords or power tool cords.

Eye or Eye splice means a loop with or without a thimble at the end of a wire rope.

Fabricated decking and steel plates/gratings means manufactured platforms made of metal. **Fabricated frame scaffold (tubular welded frame scaffold)** means a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

Failure means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Float (ship) scaffold means a suspension scaffold consisting of a

braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

Form scaffold means a supported scaffold consisting of a platform supported by brackets attached to formwork.

Guardrail system means a vertical barrier, consisting of, but not limited to, top rails, midrails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Hoist means a manual or power-operated mechanical device to raise or lower a suspended scaffold.

Horse scaffold means a supported scaffold consisting of a platform supported by construction horses (saw horses). Horse scaffolds constructed of metal are sometimes known as trestle scaffolds.

Independent pole scaffold (see "Double pole scaffold").

Interior hung scaffold means a suspension scaffold consisting of a platform suspended from the ceiling or roof structure by fixed length supports.

Ladder jack scaffold means a supported scaffold consisting of a platform resting on brackets attached to ladders.

Ladder stand means a mobile, fixed-size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs.

Landing means a platform at the end of a flight of stairs.

Large area scaffold means a pole scaffold,

tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: a scaffold erected over the entire floor area of a room.

Lean-to scaffold means a supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

Lifeline means a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lower levels means areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

Masons' adjustable supported scaffold (see "Self-contained adjustable scaffold"). **Masons' multi-point adjustable suspension scaffold** means a continuous run suspension scaffold designed and used for masonry operations.

Maximum intended load means the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mobile scaffold means a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

Multi-level suspended scaffold means a two-point or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

Multi-point adjustable suspension scaffold means a suspension scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels. Such scaffold

includes chimney hoists.

Needle beam scaffold means a platform suspended from needle beams.

Open sides and ends means the edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).

Outrigger means the structural member of a supported scaffold used to increase the base width of a scaffold in order to provide support for and increased stability of the scaffold.

Outrigger beam (Thrustout) means the structural member of a suspension scaffold or outrigger scaffold which provides support for the scaffold by extending the scaffold point of attachment to a point out and away from the structure or building.

Outrigger scaffold means a supported scaffold consisting of a platform resting on outrigger beams (thrustouts) projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside the building or structure.

Overhand bricklaying means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. It includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal fall arrest system means a system used to arrest an employee's fall. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.

Platform means a work surface elevated above lower levels. Platforms can be constructed using individual steel plates/gratings,

fabricated steel plates/gratings, fabricated decks, and fabricated platforms.

Pole scaffold (see definitions for “Single-pole scaffold” and “Double (independent) pole scaffold”).

Power operated hoist means a hoist which is powered by other than human energy.

Pump jack scaffold means a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

Qualified means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Rated load means the manufacturer’s specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

Repair bracket scaffold means a supported scaffold consisting of a platform supported by brackets which are secured in place around the circumference or perimeter of a chimney, stack, tank or other supporting structure by one or more wire ropes placed around the supporting structure.

Roof bracket scaffold means a rooftop supported scaffold consisting of a platform resting on angular-shaped supports.

Runner (ledger or ribbon) means the lengthwise horizontal spacing or bracing member which may support the bearers.

Scaffold means any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.

Self-contained adjustable scaffold means a combination supported and suspension scaffold consisting of an adjustable platform(s) mounted on an independent supporting frame(s) not a part of the object being worked on, and which is equipped with a means to permit the raising and

lowering of the platform(s). Such systems include rolling roof rigs, rolling outrigger systems, and some masons’ adjustable supported scaffolds.

Shore scaffold means a supported scaffold which is placed against a building or structure and held in place with props.

Single-point adjustable suspension scaffold means a suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels. **Single-pole scaffold** means a supported scaffold consisting of a platform(s) resting on bearers, the outside ends of which are supported on runners secured to a single row of posts or uprights, and the inner ends of which are supported on or in a structure or building wall.

Stair tower (Scaffold stairway/tower) means a tower comprised of scaffold components and which contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.

Stall load means the load at which the prime-mover of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.

Step, platform, and trestle ladder scaffold means a platform resting directly on the rungs of step ladders or trestle ladders.

Stilts means a pair of poles or similar supports with raised footrests, used to permit walking above the ground or working surface.

Stonesetters’ multi-point adjustable suspension scaffold means a continuous run suspension scaffold designed and used for stonesetters’ operations.

Supported scaffold means one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Suspension scaffold means one or more

platforms suspended by ropes or other non-rigid means from an overhead structure(s).

System scaffold means a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

Tank builders' scaffold means a supported scaffold consisting of a platform resting on brackets that are either directly attached to a cylindrical tank or attached to devices that are attached to such a tank.

Top plate bracket scaffold means a scaffold supported by brackets that hook over or are attached to the top of a wall. This type of scaffold is similar to carpenters' bracket scaffolds and form scaffolds and is used in residential construction for setting trusses.

Tube and coupler scaffold means a supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

Tubular welded frame scaffold (see "Fabricated frame scaffold").

Two-point suspension scaffold (swing stage) means a suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with means to permit the raising and lowering of the platform to desired work levels.

Unstable objects means items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

Vertical pickup means a rope used to support the horizontal rope in catenary scaffolds.

Walkway means a portion of a scaffold platform used only for access and not as a work level.

Window jack scaffold means a platform resting on a bracket or jack which projects through a window opening.

General requirements.

This section does not apply to aerial lifts

(a) Capacity

(1) Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

(2) Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.

(3) Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.

(4) Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

(5) The stall load of any scaffold hoist shall not exceed 3 times its rated load.

(6) Scaffolds shall be designed by a qualified person and shall be constructed and

loaded in accordance with that design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with paragraph (a) of this section.

(b) Scaffold platform construction.

(1) Each platform on all working levels of scaffolds shall be fully steel plates/gratings or decked between the front uprights and the guardrail supports as follows:

(i) Each platform unit (e.g., scaffold steel plates/gratings, fabricated steel plates/gratings, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch (2.5 cm) wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

(ii) Where the employer makes the demonstration provided for in paragraph (b)(1)(i) of this section, the platform shall be steel plates/gratings or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9 1/2 inches (24.1 cm).

Exception to paragraph (b)(1): The requirement in paragraph (b)(1) to provide full steel plates/gratings or decking does not apply to platforms used solely as walkways or solely by employees performing scaffold erection or dismantling. In these situations, only the steel plates/gratings that the employer establishes is necessary to provide safe working conditions is required.

(2) Except as provided in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, each scaffold platform and walkway shall be at least 18 inches (46 cm) wide.

(i) Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches (30 cm) wide. There is no minimum width requirement for boatswains' chairs.

(ii) Where scaffolds must be used in areas

that the employer can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches (46 cm) wide, such platforms and walkways shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards by the use of guardrails and/or personal fall arrest systems.

(3) Except as provided in paragraphs (b)(3)(i) and (ii) of this section, the front edge of all platforms shall not be more than 14 inches (36 cm) from the face of the work, unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used in accordance with paragraph (g) of this section to protect employees from fall-

(i) The maximum distance from the face for outrigger scaffolds shall be 3 inches (8 cm);

(ii) The maximum distance from the face for plastering and lathing operations shall be 18 inches (46 cm).

(4) Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches (15 cm).

(5)(i) Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches (30 cm) unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees and/or materials without tipping, or has guardrails which block employee access to the cantilevered end.

(ii) Each platform greater than 10 feet in length shall not extend over its support more than 18 inches (46 cm), unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping, or has guardrails which block employee access to the cantilevered end.

(6) On scaffolds where scaffold steel plates/gratings are abutted to create a long platform, each

abutted end shall rest on a separate support surface. This provision does not preclude the use of common support members, such as "T" sections, to support abutting steel plates/gratings, or hook on platforms designed to rest on common supports.

(7) On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches (30 cm) unless the platforms are nailed together or otherwise restrained to prevent movement.

(8) At all points of a scaffold where the platform changes direction, such as turning a corner, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms which rest at right angles over the same bearer shall be laid second, on top of the first platform.

(9) Platforms may be coated periodically with fire-retardant finishes and slip-resistant finishes.

(10) Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the user. Scaffold components manufactured by different manufacturers shall not be modified in order to intermix them unless a competent person determines the resulting scaffold is structurally sound.

(11) Scaffold components made of dissimilar metals shall not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component to a level below that required by paragraph (a)(1) of this section.

(c) Criteria for supported scaffolds.

(1) Supported scaffolds with a height to

base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:

(i) Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer legs.

(ii) Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet (6.1 m) or less thereafter for scaffolds 3 feet (0.91 m) wide or less, and every 26 feet (7.9 m) or less thereafter for scaffolds greater than 3 feet (0.91 m) wide. The top guy, tie or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (9.1 m) (measured from one end [not both] towards the other).

(iii) Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

(2) Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation.

(i) Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

(ii) Unstable objects shall not be used to support scaffolds or platform units.

(iii) Unstable objects shall not be used as working platforms.

(iv) Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.

(v) Fork-lifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied.

(3) Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

(d) Criteria for suspension scaffolds.

(1) All suspension scaffold support devices, such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).

(2) Suspension scaffold outrigger beams, when used, shall be made of structural metal or equivalent strength material, and shall be restrained to prevent movement.

(3) The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights, except masons' multi-point adjustable suspension scaffold outrigger beams shall not be stabilized by counterweights.

(i) Before the scaffold is used, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces are capable of supporting the loads to be imposed. In addition, masons' multi-point adjustable suspension scaffold connections shall be designed by an engineer experienced in such scaffold design.

(ii) Counterweights shall be made of non-flowable material. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.

(iii) Only those items specifically designed

as counterweights shall be used to counterweight scaffold systems. Construction materials such as, but not limited to, masonry units and rolls of roofing felt, shall not be used as counterweights.

(iv) Counterweights shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.

(v) Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled.

(vi) Outrigger beams which are not stabilized by bolts or other direct connections to the floor or roof deck shall be secured by tiebacks.

(vii) Tiebacks shall be equivalent in strength to the suspension ropes.

(viii) Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). However, where the employer can demonstrate that it is not possible to place an outrigger beam perpendicular to the face of the building or structure because of obstructions that cannot be moved, the outrigger beam may be placed at some other angle, provided opposing angle tiebacks are used.

(ix) Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorages include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

(x) Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.

(4) Suspension scaffold outrigger beams shall be:

(i) Provided with stop bolts or shackles at both ends;

(ii) Securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams;

(iii) Installed with all bearing supports perpendicular to the beam center line;

- (iv)** Set and maintained with the web in a vertical position; and
- (v)** When an outrigger beam is used, the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.
- (5)** Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be:
 - (i)** Made of steel, wrought iron, or materials of equivalent strength;
 - (ii)** Supported by bearing blocks; and
 - (iii)** Secured against movement by tiebacks installed at right angles to the face of the building or structure, or opposing angle tiebacks shall be installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.
 - (iv)** Tiebacks shall be equivalent in strength to the hoisting rope.
- (6)** When winding drum hoists are used on a suspension scaffold, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension ropes shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with means to prevent the end from passing through the hoist.
- (7)** The use of repaired wire rope as suspension rope is prohibited.
- (8)** Wire suspension ropes shall not be joined together except through the use of eye splice thimbles connected with shackles or coverplates and bolts.
- (9)** The load end of wire suspension ropes shall be equipped with proper size thimbles and secured by eyesplicing or equivalent means.
- (10)** Ropes shall be inspected for defects by

a competent person prior to each work shift and after every occurrence which could affect a rope's integrity. Ropes shall be replaced if any of the following conditions exist:

- (i)** Any physical damage which impairs the function and strength of the rope.
- (ii)** Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).
- (iii)** Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one ropelay.
- (iv)** Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
- (v)** Heat damage caused by a torch or any damage caused by contact with electrical wires.
- (vi)** Evidence that the secondary brake has been activated during an overspeed condition and has engaged the suspension rope.
- (11)** Swaged attachments or spliced eyes on wire suspension ropes shall not be used unless they are made by the wire rope manufacturer or a qualified person.
- (12)** When wire rope clips are used on suspension scaffolds:
 - (i)** There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart;
 - (ii)** Clips shall be installed according to the manufacturer's recommendations;
 - (iii)** Clips shall be retightened to the manufacturer's recommendations after the initial loading;
 - (iv)** Clips shall be inspected and retightened to the manufacturer's recommendations at the start of each work shift thereafter;
 - (v)** U-bolt clips shall not be used at the point of suspension for any scaffold hoist;
 - (vi)** When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.
- (13)** Suspension scaffold power-operated

hoists and manual hoists shall be tested by a qualified testing laboratory.

(14) Gasoline-powered equipment and hoists shall not be used on suspension scaffolds.

(15) Gears and brakes of power-operated hoists used on suspension scaffolds shall be enclosed.

(16) In addition to the normal operating brake, suspension scaffold power-operated hoists and manually operated hoists shall have a braking device or locking pawl which engages automatically when a hoist makes either of the following uncontrolled movements: an instantaneous change in momentum or an accelerated overspeed.

(17) Manually operated hoists shall require a positive crank force to descend.

(18) Two-point and multi-point suspension scaffolds shall be tied or otherwise secured to prevent them from swaying, as determined to be necessary based on an evaluation by a competent person. Window cleaners' anchors shall not be used for this purpose.

(19) Devices whose sole function is to provide emergency escape and rescue shall not be used as working platforms. This provision does not preclude the use of systems which are designed to function both as suspension scaffolds and emergency systems.

(e) Access.

This paragraph applies to scaffold access for all employees. Access requirements for employees erecting or dismantling supported scaffolds are specifically addressed in paragraph (e)(9) of this section.

(1) When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or

direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Crossbraces shall not be used as a means of access.

(2) Portable, hook-on, and attachable ladders (Additional requirements for the proper construction and use of portable ladders are contained in subpart X of this part—Stairways and Ladders):

(i) Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold;

(ii) Hook-on and attachable ladders shall be positioned so that their bottom rung is not more than 24 inches (61 cm) above the scaffold supporting level;

(iii) When hook-on and attachable ladders are used on a supported scaffold more than 35 feet (10.7 m) high, they shall have rest platforms at 35-foot (10.7 m) maximum vertical intervals.

(iv) Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold used;

(v) Hook-on and attachable ladders shall have a minimum rung length of 11 1/2 inches (29 cm); and

(vi) Hook-on and attachable ladders shall have uniformly spaced rungs with a maximum spacing between rungs of 16 3/4 inches.

(3) Stairway-type ladders shall:

(i) Be positioned such that their bottom step is not more than 24 inches (61 cm) above the scaffold supporting level;

(ii) Be provided with rest platforms at 12 foot (3.7 m) maximum vertical intervals;

(iii) Have a minimum step width of 16 inches (41 cm), except that mobile scaffold stairway-type ladders shall have a minimum step width of 11 1/2 inches (30 cm); and

(iv) Have slip-resistant treads on all steps and landings.

(4) Stairtowers (scaffold stairway/ towers) shall be positioned such that their bottom step is not more than 24 inches (61 cm.) above the scaffold supporting level.

- (i)** A stairrail consisting of a toprail and a midrail shall be provided on each side of each scaffold stairway.
 - (ii)** The toprail of each stairrail system shall also be capable of serving as a handrail, unless a separate handrail is provided.
 - (iii)** Handrails, and toprails that serve as handrails, shall provide an adequate handhold for employees grasping them to avoid falling.
 - (iv)** Stairrail systems and handrails shall be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
 - (v)** The ends of stairrail systems and handrails shall be constructed so that they do not constitute a projection hazard.
 - (vi)** Handrails, and toprails that are used as handrails, shall be at least 3 inches (7.6 cm) from other objects.
 - (vii)** Stairrails shall be not less than 28 inches (71 cm) nor more than 37 inches (94 cm) from the upper surface of the stairrail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
 - (viii)** A landing platform at least 18 inches (45.7 cm) wide by at least 18 inches (45.7 cm) long shall be provided at each level.
 - (ix)** Each scaffold stairway shall be at least 18 inches (45.7 cm) wide between stairrails.
 - (x)** Treads and landings shall have slip-resistant surfaces.
 - (xi)** Stairways shall be installed between 40 degrees and 60 degrees from the horizontal.
 - (xii)** Guardrails meeting the requirements of paragraph (g)(4) of this section shall be provided on the open sides and ends of each landing.
 - (xiii)** Riser height shall be uniform, within 1/4 inch, (0.6 cm) for each flight of stairs. Greater variations in riser height are allowed for the top and bottom steps of the entire system, not for each flight of stairs.
 - (xiv)** Tread depth shall be uniform, within 1/4 inch, for each flight of stairs.
- (5) Ramps and walkways.**
- (i)** Ramps and walkways 6 feet (1.8 m) or more above lower levels shall have guardrail systems

which comply with subpart M of this part—Fall Protection;

- (ii)** No ramp or walkway shall be inclined more than a slope of one (1) vertical to three (3) horizontal (20 degrees above the horizontal).
 - (iii)** If the slope of a ramp or a walkway is steeper than one (1) vertical in eight (8) horizontal, the ramp or walkway shall have cleats not more than fourteen (14) inches (35 cm) apart which are securely fastened to the steel plates/gratings to provide footing.
- (6) Integral prefabricated scaffold access frames shall:**
- (i)** Be specifically designed and constructed for use as ladder rungs;
 - (ii)** Have a rung length of at least 8 inches (20 cm);
 - (iii)** Not be used as work platforms when rungs are less than 11 1/2 inches in length, unless each affected employee uses fall protection, or a positioning device
 - (iv)** Be uniformly spaced within each frame section;
 - (v)** Be provided with rest platforms at 35-foot (10.7 m) maximum vertical intervals on all supported scaffolds more than 35 feet (10.7 m) high; and
 - (vi)** Have a maximum spacing between rungs of 16 3/4 inches (43 cm). Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16 3/4 inches (43 cm).
- (7) Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.**
- (8) Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches (36 cm) horizontally and not more than 24 inches (61 cm) vertically from the other surface.**
- (9) Effective September 2, 1997, access for employees erecting or dismantling supported scaffolds shall be in accordance with the following:**
- (i)** The employer shall provide safe means of

access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard.

The employer shall have a competent person determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

(ii) Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

(iii) When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

(iv) Cross braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

(f) Use

(1) Scaffolds and scaffold components shall not be loaded in excess of their maximum intended

loads or rated capacities, whichever is less.

(2) The use of shore or lean-to scaffolds is prohibited.

(3) Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

(4) Any part of a scaffold damaged or weakened such that its strength is less than that required by paragraph (a) of this section shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

(5) Scaffolds shall not be moved horizontally while employees are on them.

(6) The clearance between scaffolds and power lines shall be as follows: Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

Insulated lines voltage	Minimum distance	Alternatives
Less than 300 volts 300 volts to 50 kv..... More than 50 kv	3 feet (0.9 M). 10 feet (3.1 m) 10 feet (3.1 M) plus .4 inches (1.0 cm) for each 1 kv over 50 kv.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).
Uninsulated lines voltage	Minimum distance	Alternatives
Less than 50 kv More than 50 kv	10 feet (3.1 M). 10 feet (3.1 M) plus .4 inches (1.0 cm) for each 1 kv over 50 kv.	2 times the length of the line insulator, but never less than 10 feet (3.1 m).

Exception to paragraph (f)(6): Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has deenergized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

(7) Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

(8) Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

(9) Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

(10) Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.

(11) Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.

(12) Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the

scaffold is secured against the anticipated wind forces imposed.

(13) Debris shall not be allowed to accumulate on platforms.

(14) Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.

(15) Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:

(i) When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder;

(ii) The platform units shall be secured to the scaffold to prevent their movement;

(iii) The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection, and

(iv) The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

(16) Platforms shall not deflect more than 1/60 of the span when loaded.

(17) To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:

(i) An insulated thimble shall be used to attach each suspension wire rope to its hanging support (such as cornice hook or outrigger). Excess suspension wire rope and any additional independent lines from grounding shall be insulated;

(ii) The suspension wire rope shall be covered with insulating material extending at least 4 feet (1.2 m) above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so that it does not become

grounded;

(iii) Each hoist shall be covered with insulated protective covers;

(iv) In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure. The size of this conductor shall be at least the size of the welding process work lead, and this conductor shall not be in series with the welding process or the workpiece;

(v) If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off; and

(vi) An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

(g) Fall protection.

(1) Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level. Paragraphs (g)(1) (i) through (vii) of this section establish the types of fall protection to be provided to the employees on each type of scaffold. Paragraph (g)(2) of this section addresses fall protection for scaffold erectors and dismantlers.

Note to paragraph (g)(1): The fall protection requirements for employees installing suspension scaffold support systems on floors, roofs, and other elevated surfaces are set forth in subpart M of this part.

(i) Each employee on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system;

(ii) Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system;

(iii) Each employee on a crawling board (chicken ladder) shall be protected by a personal fall arrest system, a guardrail system (with minimum 200 pound toprail

capacity), or by a three-fourth inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board;

(iv) Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by ropes;

(v) Each employee on a walkway located within a scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) installed within 9 1/2 inches (24.1 cm) of and along at least one side of the walkway.

(vi) Each employee performing overhand bricklaying operations from a supported scaffold shall be protected from falling from all open sides and ends of the scaffold (except at the side next to the wall being laid) by the use of a personal fall arrest system or guardrail system (with minimum 200 pound toprail capacity).

(vii) For all scaffolds not otherwise specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section, each employee shall be protected by the use of personal fall arrest systems or guardrail systems meeting the requirements of paragraph (g)(4) of this section.

(2) Effective September 2, 1997, the employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Employers are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

(3) Personal fall arrest systems used on scaffolds shall be attached by

lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

(i) When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.

(ii) When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.

(iii) When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.

(iv) Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

(3) Guardrail systems installed to meet the requirements of this section shall comply with the following provisions (guardrail systems built in accordance with Appendix

A to this subpart will be deemed to meet the requirements of paragraphs (g)(4) (vii), (viii), and (ix) of this section):

(i) Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.

(ii) The top edge height of top rails or equivalent member on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above the platform surface. The top edge height on supported scaffolds manufactured and placed in service before January 1, 2000, and on all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches (0.9 m) and 45 inches (1.2 m). When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of paragraph (g)(4).

(iii) When midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.

(iv) When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.

(v) When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.

(vi) When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches (48 cm) apart.

(vii) Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any

point along its top edge of at least 100 pounds (445 n) for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds (890 n) for guardrail systems installed on all other scaffolds.

(viii) When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section.

(ix) Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 75 pounds (333 n) for guardrail systems with a minimum 100 pound toprail capacity, and at least 150 pounds (666 n) for guardrail systems with a minimum 200 pound toprail capacity.

(x) Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.

(xi) Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

(xii) The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.

(xiii) Steel or plastic banding shall not be used as a toprail or midrail.

(xiv) Manila or plastic (or other synthetic) rope being used for toprails or midrails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the strength requirements of paragraph (g) of this section.

(xv) Crossbracing is acceptable in place of a midrail when the crossing point of two braces is between 20 inches (0.5 m) and 30 inches (0.8 m) above the work platform or as a toprail when the crossing point of two braces is between 38 inches (0.97 m) and 48 inches (1.3 m) above the work platform. The end points at each upright shall be no more than 48 inches (1.3 m) apart.

(h) Falling object protection.

(1) In addition to wearing hardhats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.

(2) Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

(i) The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area; or

(ii) A toeboard shall be erected along the edge of platforms more than 10 feet (3.1 m) above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of 3/4" 1 1/2 inch (2.4 cm) wood/steel or equivalent may be used in lieu of toeboards;

(iii) Where tools, materials, or equipment are piled to a height higher than the top edge of the toeboard, paneling or screening extending from the toeboard or platform to the top of

the guardrail shall be erected for a distance sufficient to protect employees below; or

(iv) A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or

(v) A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

(3) Canopies, when used for falling object protection, shall comply with the following criteria:

(i) Canopies shall be installed between the falling object hazard and the employees.

(ii) When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.

(iii) Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

(4) Where used, toeboards shall be:

(i) Capable of withstanding, without failure, a force of at least 50 pounds (222 n) applied

in any downward or horizontal direction at any point along the toeboard (toeboards built in accordance with Appendix A to this subpart will be deemed to meet this requirement); and

(ii) At least three and one-half inches (9 cm) high from the top edge of the toeboard to the level of the walking/working surface. Toeboards shall be securely fastened in place at the outermost edge of the platform and have not more than 1/4 inch (0.7 cm) clearance above the walking/working surface. Toeboards shall be solid or with openings not over one inch (2.5 cm) in the greatest dimension.

Additional requirements applicable to specific types of scaffolds.

(a) Tube and coupler scaffolds.

(1) When platforms are being moved to the next level, the existing platform shall be left undisturbed until the new bearers have been set in place and braced prior to receiving the new platforms.

(2) Transverse bracing forming an "X" across the width of the scaffold shall be installed at the scaffold ends and at least at every third set of posts horizontally (measured from only one end) and every fourth runner vertically. Bracing shall extend diagonally from the inner or outer posts or runners upward to the next outer or inner posts or runners. Building ties shall be installed at the bearer levels between the transverse bracing

(3) On straight run scaffolds, longitudinal bracing across the inner and outer rows of posts shall be installed diagonally in both directions, and shall extend from the base of the end posts upward to the top of the scaffold at approximately a 45 degree angle. On scaffolds whose length is greater than their height, such bracing shall be repeated beginning at least at every fifth post. On scaffolds whose length is less than their height, such bracing shall be installed from the base of the end posts upward to the opposite end posts, and then in alternating directions until reaching the top of the scaffold. Bracing shall be installed as close as possible to the intersection of the bearer and post or runner and post.

(4) Where conditions preclude the attachment of bracing to posts, bracing shall be attached to the runners as close to the post as possible.

(5) Bearers shall be installed transversely between posts, and when coupled to the posts, shall have the inboard coupler bear directly on the runner coupler. When the bearers are coupled to the runners, the couplers shall be as close to the posts as possible.

(6) Bearers shall extend beyond the posts and runners, and shall provide full contact with the coupler.

(7) Runners shall be installed along the

length of the scaffold, located on both the inside and outside posts at level heights (when tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outsiderunners).

(8) Runners shall be interlocked on straight runs to form continuous lengths, and shall be coupled to each post. The bottom runners and bearers shall be located as close to the base as possible.

(9) Couplers shall be of a structural metal, such as drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

(10) Tube and coupler scaffolds over 125 feet in height shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design. Non-mandatory Appendix A to this subpart contains examples of criteria that will enable an employer to comply with design and loading requirements for tube and coupler scaffolds under 125 feet in height.

(b) Fabricated frame scaffolds (tubular welded frame scaffolds).

(1) When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced prior to receiving the new platforms.

(2) Frames and panels shall be braced by cross, horizontal, or diagonal braces, or combination thereof, which secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, and square. All brace connections shall be secured.

(3) Frames and panels shall be joined together vertically by coupling or stacking pins or equivalent means.

(4) Where uplift can occur which would

displace scaffold end frames or panels, the frames or panels shall be locked together vertically by pins or equivalent means.

(5) Brackets used to support cantilevered loads shall:

(i) Be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames;

(ii) Not be bent or twisted from these positions; and

(c) Be used only to support personnel, unless the scaffold has been designed for other loads by a qualified engineer and built to withstand the tipping forces caused by those other loads being placed on the bracket-supported section of the scaffold. **(6)** Scaffolds over 125 feet (38.0 m) in height above their base plates shall be designed by a registered professional engineer, and shall be constructed and loaded in accordance with such design.

Plasterers', decorators', and large area scaffolds. Scaffolds shall be constructed in accordance with paragraphs (a), (b), or (c) of this section, as appropriate.

(d) Bricklayers' square scaffolds (squares).

(1) Diagonal braces shall be installed on all sides of each square.

(2) Diagonal braces shall be installed between squares on the rear and front sides of the scaffold, and shall extend from the bottom of each square to the top of the next square.

(3) Scaffolds shall not exceed three tiers in height, and shall be so constructed and arranged that one square rests directly above the other. The upper tiers shall stand on a continuous row of steel plates/gratings laid across the next lower tier, and shall be nailed down or otherwise secured to prevent displacement.

(e) Horse scaffolds.

(1) Scaffolds shall not be constructed or arranged more than two tiers or 10 feet (3.0 m) in height, whichever is less.

(2) When horses are arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(3) When horses are arranged in tiers, the legs of each horse shall be nailed down or otherwise secured to prevent displacement.

(4) When horses are arranged in tiers, each tier shall be cross braced.

(f) Form scaffolds and carpenters' bracket scaffolds.

(1) Each bracket shall be attached to the supporting formwork or structure by means of one or more of the following:

A metal stud attachment device; welding; hooking over a secured structural supporting member, with the form wales either bolted to the form or secured by snap ties or tie bolts extending through the form and securely anchored; or, for carpenters' bracket scaffolds only, by a bolt extending through to the opposite side of the structure's wall.

(2) Metal bracket-form scaffolds shall be an integral part of the form panel.

(3) Folding type metal brackets, when extended for use, shall be either bolted or secured with a locking-type pin.

(g) Roof bracket scaffolds.

(1) Scaffold brackets shall be constructed to fit the pitch of the roof and shall provide a level support for the platform.

(2) Brackets (including those provided with pointed metal projections) shall be anchored in place by nails unless it is impractical to use nails. When nails are not used, brackets shall be secured in place with first-grade manila rope of at least three-fourth inch (1.9 cm) diameter, or equivalent.

(i) Outrigger scaffolds.

(1) The inboard end of outrigger beams, measured from the fulcrum point to the extreme point of anchorage, shall be not less than one and one-half times the outboard end in length.

(2) Outrigger beams fabricated in the shape of an I-beam or channel shall be placed so that the web section is vertical.

(3) The fulcrum point of outrigger beams shall rest on secure bearings at least 6 inches (15.2 cm) in each horizontal dimension.

(4) Outrigger beams shall be secured in place against movement, and shall be securely braced at the fulcrum point against tipping.

(5) The inboard ends of outrigger beams shall be securely anchored either by means of braced struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both.

(6) The entire supporting structure shall be securely braced to prevent any horizontal movement.

(7) To prevent their displacement, platform units shall be nailed, bolted, or otherwise secured to outriggers.

(8) Scaffolds and scaffold components shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

(j) Pump jack scaffolds.

(1) Pump jack brackets, braces, and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two positive gripping mechanisms to prevent any failure or slippage.

(2) Poles shall be secured to the structure by rigid triangular bracing or equivalent at the bottom, top, and other points as necessary. When the pump jack has to pass bracing already installed, an additional brace shall be installed approximately 4 feet (1.2 m) above the brace to be passed, and shall be left in place until the pump jack has been moved and the original brace reinstalled.

(3) When guardrails are used for fall protection, a workbench may be used as the toprail only

(4) Work benches shall not be used as scaffold platforms.

(k) Ladder jack scaffolds.

- (1) Platforms shall not exceed a height of 20 feet (6.1 m).
- (2) All ladders used to support ladder jack scaffolds shall meet the requirements of subpart X of this part— Stairways and Ladders, except that job-made ladders shall not be used to support ladder jack scaffolds.
- (3) The ladder jack shall be so designed and constructed that it will bear on the side rails and ladder rungs or on the ladder rungs alone. If bearing on rungs only, the bearing area shall include a length of at least 10 inches (25.4 cm) on each rung.
- (4) Ladders used to support ladder jacks shall be placed, fastened, or equipped with devices to prevent slipping.
- (5) Scaffold platforms shall not be bridged one to another.

(l) Window jack scaffolds.

- (1) Scaffolds shall be securely attached to the window opening.
- (2) Scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.
- (3) Window jacks shall not be used to support steel plates/gratings placed between one window jack and another, or for other elements of scaffolding.

(m) Crawling boards (chicken ladders).

- (1) Crawling boards shall extend from the roof peak to the eaves when used in connection with roof construction, repair, or maintenance.
- (2) Crawling boards shall be secured to the roof by ridge hooks or by means that meet equivalent criteria (e.g., strength and durability).

(n) Step, platform, and trestle ladder scaffolds.

- (1) Scaffold platforms shall not be placed any higher than the second highest rung or step of the ladder supporting the platform.
- (2) All ladders used in conjunction with step, platform and trestle ladder scaffolds shall meet the pertinent requirements of subpart X of this part— Stairways and Ladders, except that job-made ladders shall not be used to support such scaffolds.
- (3) Ladders used to support step, platform, and trestle ladder scaffolds shall be placed, fastened, or equipped with devices to prevent slipping.
- (4) Scaffolds shall not be bridged one to another.

(o) Single-point adjustable suspension scaffolds.

- (1) When two single-point adjustable suspension scaffolds are combined to form a two-point adjustable suspension scaffold, the resulting two-point scaffold shall comply with the requirements for two-point adjustable suspension scaffolds in paragraph (p) of this section.
- (2) The supporting rope between the scaffold and the suspension device shall be kept vertical unless all of the following conditions are met:
 - (i) The rigging has been designed by a qualified person, and
 - (ii) The scaffold is accessible to rescuers, and
 - (iii) The supporting rope is protected to ensure that it will not chafe at any point where a change in direction occurs, and
 - (iv) The scaffold is positioned so that swinging cannot bring the scaffold into contact with another surface.
- (3) Boatswains' chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly "eye-spliced" minimum five-eighths (5/8) inch

(1.6 cm) diameter first-grade manila rope, or other rope which will satisfy the criteria (e.g., strength and durability) of manila rope.

(4) Boatswains' chair seat slings shall be reeved through four corner holes in the seat; shall cross each other on the underside of the seat; and shall be rigged so as to prevent slippage which could cause an out-of-level condition.

(5) Boatswains' chair seat slings shall be a minimum of five-eighth (5/8) inch (1.6 cm) diameter fiber, synthetic, or other rope which will satisfy the criteria (e.g., strength, slip resistance, durability, etc.) of first grade manila rope.

(6) When a heat-producing process such as gas or arc welding is being conducted, boatswains' chair seat slings shall be a minimum of three-eighth (3/8) inch (1.0 cm) wire rope.

(p) Two-point adjustable suspension scaffolds (swing stages).

The following requirements do not apply to two-point adjustable suspension scaffolds used as masons' or stonemasons' scaffolds. Such scaffolds are covered by paragraph (q) of this section.

(1) Platforms shall not be more than 36 inches (0.9 m) wide unless designed by a qualified person to prevent unstable conditions.

(2) The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means

(3) The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.

(4) Platforms shall be of the ladder-type, steel plates/gratings-type, beam-type, or light-metal type.

Light metal-type platforms having a rated capacity of 750 pounds or less and platforms 40 feet (12.2 m) or less in length shall be tested and listed by a nationally recognized testing laboratory.

(5) Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.

(6) Passage may be made from one platform to another only when the platforms are at the same height, are abutting, and walk-through stirrups specifically designed for this purpose are used.

(q) Multi-point adjustable suspension scaffolds, stonemasons' multi-point adjustable suspension scaffolds, and masons' multi-point adjustable suspension scaffolds.

(1) When two or more scaffolds are used they shall not be bridged one to another unless they are designed to be bridged, the bridge connections are articulated, and the hoists are properly sized.

(2) If bridges are not used, passage may be made from one platform to another only when the platforms are at the same height and are abutting.

(3) Scaffolds shall be suspended from metal outriggers, brackets, wire rope slings, hooks, or means that meet equivalent criteria (e.g., strength, durability).

(r) Catenary scaffolds.

(1) No more than one platform shall be placed between consecutive vertical pick-ups, and no more than two platforms shall be used on a catenary scaffold.

(2) Platforms supported by wire ropes shall have hook-shaped stops on each end of the platforms to prevent them from slipping off the wire ropes. These hooks shall be so

placed that they will prevent the platform from falling if one of the horizontal wire ropes breaks.

(3) Wire ropes shall not be tightened to the extent that the application of a scaffold load will overstress them.

(4) Wire ropes shall be continuous and without splices between anchors.

(s) Float (ship) scaffolds.

(1) The platform shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 inches (15.2 cm) beyond the platform on both sides. Each bearer shall be securely fastened to the platform.

(2) Rope connections shall be such that the platform cannot shift or slip.

(3) When only two ropes are used with each float:

(i) They shall be arranged so as to provide four ends which are securely fastened to overhead supports.

(ii) Each supporting rope shall be hitched around one end of the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(t) Interior hung scaffolds.

(1) Scaffolds shall be suspended only from the roof structure or other structural member such as ceiling beams.

(2) Overhead supporting members (roof structure, ceiling beams, or other structural members) shall be inspected and checked for strength before the scaffold is erected. **(3)** Suspension ropes and cables shall be connected to the overhead supporting members by shackles, clips, thimbles, or other means that meet equivalent criteria (e.g., strength, durability).

(u) Needle beam scaffolds.

(1) Scaffold support beams shall be installed

on edge.

(2) Ropes or hangers shall be used for supports, except that one end of a needle beam scaffold may be supported by a permanent structural member.

(3) The ropes shall be securely attached to the needle beams.

(4) The support connection shall be arranged so as to prevent the needle beam from rolling or becoming displaced.

(5) Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.

(v) Multi-level suspended scaffolds.

(1) Scaffolds shall be equipped with additional independent support lines, equal in number to the number of points supported, and of equivalent strength to the suspension ropes, and rigged to support the scaffold in the event the suspension rope(s) fail.

(2) Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

(3) Supports for platforms shall be attached directly to the support stirrup and not to any other platform.

(w) Mobile scaffolds.

(1) Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

(i) Scaffolds constructed of tube and coupler components shall also comply with the requirements of paragraph (b) of this section;

(ii) Scaffolds constructed of fabricated frame components shall also comply with the

requirements of paragraph (c) of this section.

(2) Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is used in a stationary manner.

(3) Manual force used to move the scaffold shall be applied as close to the base as practicable, but not more than 5 feet (1.5 m) above the supporting surface.

(4) Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.

(5) Scaffolds shall be stabilized to prevent tipping during movement.

(6) Employees shall not be allowed to ride on scaffolds unless the following conditions exist:

(i) The surface on which the scaffold is being moved is within 3 degrees of level, and free of pits, holes, and obstructions;

(ii) The height to base width ratio of the scaffold during movement is two to one or less.

(iii) Outrigger frames, when used, are installed on both sides of the scaffold;

(iv) When power systems are used, the propelling force is applied directly to the wheels, and does not produce a speed in excess of 1 foot per second (.3 mps); and **(v)**

No employee is on any part of the scaffold which extends outward beyond the wheels, casters, or other supports.

(7) Platforms shall not extend outward beyond the base supports of the scaffold unless outrigger frames or equivalent devices are used to ensure stability.

(8) Where leveling of the scaffold is neces-

sary, screw jacks or equivalent means shall be used.

(9) Caster stems and wheel stems shall be pinned or otherwise secured in scaffold legs or adjustment screws.

(10) Before a scaffold is moved, each employee on the scaffold shall be made aware of the move.

(x) Repair bracket scaffolds.

(1) Brackets shall be secured in place by at least one wire rope at least 1/2 inch (1.27 cm) in diameter.

(2) Each bracket shall be attached to the securing wire rope (or ropes) by a positive locking device capable of preventing the unintentional detachment of the bracket from the rope, or by equivalent means.

(3) Each bracket, at the contact point between the supporting structure and the bottom of the bracket, shall be provided with a shoe (heel block or foot) capable of preventing the lateral movement of the bracket.

(4) Platforms shall be secured to the brackets in a manner that will prevent the separation of the platforms from the brackets and the movement of the platforms or the brackets on a completed scaffold.

(5) When a wire rope is placed around the structure in order to provide a safe anchorage for personal fall arrest systems used by employees erecting or dismantling scaffolds, the wire rope shall meet the requirements of subpart M of this part, but shall be at least 5/16 inch (0.8 cm) in diameter.

(6) Each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be protected from damage due to contact with edges, corners, protrusions, or other discontinuities of the supporting structure or scaffold components.

(7) Tensioning of each wire rope used for securing brackets in place or as an anchorage for personal fall arrest systems shall be by means of a turnbuckle at least 1 inch

(2.54 cm) in diameter, or by equivalent means.

(8) Each turnbuckle shall be connected to the other end of its rope by use of an eyesplice thimble of a size appropriate to the turnbuckle to which it is attached.

(9) U-bolt wire rope clips shall not be used on any wire rope used to secure brackets or to serve as an anchor for personal fall arrest systems.

(10) The employer shall ensure that materials shall not be dropped to the outside of the supporting structure.

(11) Scaffold erection shall progress in only one direction around any structure.

(y) Stilts. Stilts, when used, shall be used in accordance with the following requirements:

(1) An employee may wear stilts on a scaffold only if it is a large area scaffold.

(2) When an employee is using stilts on a large area scaffold where a guardrail system is used to provide fall protection, the guardrail system shall be increased in height by an amount equal to the height of the stilts being used by the employee.

(3) Surfaces on which stilts are used shall be flat and free of pits, holes and obstructions, such as debris, as well as other trip- ping and falling hazards.

(4) Stilts shall be properly maintained. Any alteration of the original equipment shall be approved by the manufacturer.

1. General Guidelines and Tables

Maximum intended nominal load (lb/ft ²)	Maximum permissible span
25.....	10
50.....	8
75.....	6

- (a) Fabricated steel platforms may be used in lieu of steel plates/gratings. Maximum spans for such units shall be as recommended by the manufacturer based on the maximum intended load being calculated as follows

Rated load capacity	Intended load
Light-duty	<ul style="list-style-type: none"> • 25 pounds per square foot applied uniformly over the entire span area
Medium-duty	<ul style="list-style-type: none"> • 50 pounds per square foot applied uniformly over the entire span area.
Heavy-duty	<ul style="list-style-type: none"> • 75 pounds per square foot applied uniformly over the entire span area.
One-person	<ul style="list-style-type: none"> • 250 pounds placed at the center of the span (total 250 pounds).
Two-person	<ul style="list-style-type: none"> • 250 pounds placed 18 inches to the left and right of the center of the span (total 500 pounds).
Three-person	<ul style="list-style-type: none"> • 250 pounds placed at the center of the span and 250 pounds placed 18 inches to the left and right of the center of the span (total 750 pounds).

Note: Platform units used to make scaffold platforms intended for light-duty use shall be capable of supporting at least 25 pounds per square foot applied uniformly over the entire unit-span area, or a 250-pound point load placed on the unit at the center of the span, whichever load produces the greater

shear force.

(b) Guardrails shall be as follows:

(i) Toprails shall be equivalent in strength to 2 inch by 4 inch lumber; or 1 1/4 inch × 1/8 inch structural angle iron; or 1 inch × .070 inch wall steel tubing; or 1.990 inch × .058 inch wall aluminum tubing.

- (ii) Midrails shall be equivalent in strength to 1 1/4 inch × 1 1/4 inch × 1/8 inch structural angle iron; or 1 inch × .070 inch wall steel tubing; or 1.990 inch × .058 inch wall aluminum tubing.
- (iii) Toeboards shall be equivalent in strength to 1 1/4 inch × 1 1/4 inch structural angle iron; or 1 inch × .070 inch wall steel tubing; or 1.990 inch × .058 inch wall aluminum tubing.
- (iv) Posts shall be equivalent in strength to 1 1/4 inch × 1 1/4 inch × 1/8 structural angle

- iron; or 1 inch × .070 inch wall steel tubing; or 1.990 inch × .058 inch wall aluminum tubing.
- (v) Distance between posts shall not exceed 8 feet.
- (c) Overhead protection shall consist of 2-inch nominal steel plates
- (d) Screen installed between toeboards and midrails or top rails shall consist of No. 18 gauge U.S. Standard wire one inch mesh.

Tube and coupler scaffolds.

MINIMUM SIZE OF MEMBERS			
	Light duty	Medium duty	Heavy duty
Maximum intended load	25 lbs/ft ²	50 lbs/ft ²	75 lbs/ft ² .
Posts, runners and braces	Nominal 2 in. (1.90 inches) OD steel tube or pipe.	Nominal 2 in. (1.90 inches) OD steel tube or pipe.	Nominal 2 in. (1.90 inches) OD steel tube or pipe.
Bearers	Nominal 2 in. (1.90 inches) OD steel tube or pipe and a maximum post spacing of 4 ft. × 10 ft.	Nominal 2 in. (1.90 inches) OD steel tube or pipe and a maximum post spacing of 4 ft. × 7 ft. Nominal 2 1/2 in. (2.375 in.) OD steel tube or pipe and a maximum post spacing of 6 ft. × 8 ft. *	Nominal 2 1/2 in. (2.375 in.) OD steel tube or pipe and a maximum post spacing of 6 ft. × 6 ft.
Maximum runners spacing vertically	6 ft. 6 in	6 ft. 6 in.....	6 ft. 6 in.

* Bearers shall be installed in the direction of the shorter dimension.

Note: Longitudinal diagonal bracing shall be installed at an angle of 45° (±5°).

MAXIMUM NUMBER OF PLATFORM LEVELS				
	Maximum number of additional platform levels			Maximum height of scaffold (in feet)
	Light duty	Medium duty	Heavy duty	
Number of Working Levels:				
1	16	11	6	125
2	11	1	0	125
3	6	0	0	125
4	1	0	0	125



HINDUSTAN ORGANIC CHEMICALS LIMITED
SCAFFOLD CHECKLIST

Location (Plant):		Purpose of Scaffold:		Erected by (Dept./Contractor):	
PARTS	POINTS TO BE CHECKED	✓	REMARKS		
Sill plate	Provided on loose ground				
Base plate	5" base plate/24" extension base plate/24" screw jack				
	Caster wheels with brake for mobile scaffold				
	Swivel base plate for uneven or angled surface				
Tubes	Uniform/Proper size				
	Straight				
Standard (Post)	Staggered joints (adjacent standards are not joined within the same lift level to prevent tipping)				
	Sleeve couplers (to join two standards (tube type) end to end)				
	Vertical				
Ledger (Runner)	Staggered joints				
	Level				
	Not damaged				
	Bearer placed on top of Ledger				
Bracing	Longitudinal diagonal bracing				
	Transverse diagonal bracing				
	Bracing repeated at every 5 th post				
Ladders	Proper angle (75°) or 1:4 base to height ratio				
	Right length				
	Properly secured/Ladder clamp				
	Separate landing				
	Right extension				
Fittings	Right fittings				
	Not damaged				
	Right angle clamps for Bearer and Ledger (tube type)				
Fall protection	Top rail				
	Mid rail				
	Toe guard (Falling object protection)				
Boards (Steel plates/gratings)	Not damaged				
	Not loose				
	Right support				
Any Other Observation					
Verified By					
Name:		Designation:		Signature	

ANNEXURE – Q
BANK GUARANTEE (FOR EMD / SECURITY DEPOSIT)

Bank Guarantee No.
Bank Guarantee issue date
Bank Guarantee amount
Bank Guarantee Period from
To,
Hindustan Organic Chemicals Limited
Ambalamughal – 682302,
Ernakulam District,
Kerala

In consideration of Hindustan Organic Chemicals Limited having its registered office at Ambalamughal – 682302, Ernakulam District, Kerala (hereinafter referred to as HOCL, which expression shall include all its successors, administrators, executors and assigns) having issued an advertisement for open tender Enquiry No. _____ dated _____ for _____.
_____ (Name of the Party) having its Registered Office at (Full address of the party) (hereinafter referred to as _____, which expression shall include all its successors, administrators, executors and assigns) against the submission of the Bank Guarantee of Rs. _____/- (Rupees _____ only) for Earnest Money deposit / Security Deposit (strike out whichever is not applicable).

We _____ (Name of the Bank and Full Address) having its Registered Office at _____ (Full Bank Address) (hereinafter referred to as The Bank which expression shall include all its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay HOCL immediately on first demand in writing and any / all money(s) to the extent of Rs. _____ /- (Rupees _____ only), without any demur, reservation, contest or protest and / or without any reference to the _____ (Name of the party). Any such demand made by HOCL on the Bank by serving a written notice shall be conclusive and binding, without any proof, on the Bank as regards the amount due and payable, notwithstanding any dispute(s) pending before any court, tribunal, arbitrator, sole expert, conciliator or any other authority and / or any other matter or thing whatsoever, as liability under these presents being absolute and unequivocal. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable until it is discharged by HOCL in writing but not later than _____. This Guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the Customer and shall remain valid, binding and operative during its currency against the Bank against any outstanding bill remaining unpaid or towards loss or damage caused to or suffered or would be caused to or suffered by reason of any breach by the said Customer of any of the terms or conditions agreed between them.

The Bank also agrees that HOCL at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the _____ (Name of the Party) and notwithstanding any security or other guarantee that HOCL may have in relation to the _____ (Name of the party) liabilities.

The Bank further agrees that HOCL shall have fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said supply or to extend time of performance by the said _____ (Name of the Party) from time to time or to postpone for any time or from time to time exercise of any of the powers vested in HOCL against the _____ (Name of the Party) and to forebear or enforce any of the terms and conditions relating to the said supply and we shall not be relieved from our liability by reasons of any such variation, or extension being granted to the said _____ (Name of the Party) or for any forbearance, act or omission on the part of HOCL or any indulgence by HOCL to the said _____ (Name of the Party) or any such matter or thing whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

The Bank further agree that the Guarantee herein contained shall remain in full force during the period that is taken for the finalization of the tender enquiry No. _____ dated _____ all dues of HOCL under or by virtue of this supply have been fully paid any its claim satisfied or discharged or till HOCL discharges this Guarantee in writing, or till _____ whichever is earlier. However, HOCL shall have the right to lodge claim up to 6 months from expiry of validity date of Bank Guarantee.

This Guarantee shall not be discharged by any change in our constitution, in the constitution of Customer any or that of HOCL.

The Bank confirms that this Guarantee has been issued with observance of appropriate laws of the country of issue.

The Bank also agrees that this Guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of Indian courts at Mumbai, India.

Not with standing anything contained hereinabove, our liability under this guarantee is limited to Rs. _____ /- (Rupees _____ only) and our guarantee shall remain in force up to _____ unless notice of demand to enforce a claim under this guarantee is served upon us on or before _____. All your rights under the above guarantee shall be forfeited and we shall be relieved and discharges from all liabilities from all liabilities there under.

We, _____ (Name of the Bank and Full address), hereby undertake not to revoke this guarantee during its currency except with the previous consent of HOCL in writing.

Not with standing anything contained here above.

1. Our liability under this bank guarantee shall not exceed Rs. _____ /- (Rupees _____ only).

2. This bank guarantee shall be valid up to _____. We are liable to pay the guarantee amount or any part thereof under this bank guarantee only and only if you serve upon us a written claim or demand on or before.

Place:

Date: