

**SUPPLY, INSTALLATION, ASSEMBLING, TESTING, COMMISSIONING,
LIFTING/SHIFTING, FACTORY INSPECTION & ACCEPTANCE TESTING,
TRAINING OF EMPLOYERS & SPARE PARTS OF AIR HANDLING UNIT**

(TENDER IS ON COMPLETE PACKAGE BASIS)

(VALID PAKISTAN ENGINEERING COUNCIL REGISTRATION CERTIFICATE WITH
RELEVANT CATEGORY OF MECHANICAL/HVAC ENGINEERING GOODS (ME01))

(UNDER SINGLE STAGE TWO ENVELOPE BIDDING PROCEDURE)

AS PER PPRA RULES 2004

**TENDER ENQUIRY NO:
SSGC/LP/EPADS2/PT/2181279**

Bid Closing date & time: 24-09-2026 at 1600 hrs

Bid Opening date & time: 24-09-2026 at 1630 hrs

Supplier must be active in FBR Active Tax Payer List (ATL)

Scaled quotation of above referred requirement to be submitted in PKR

Venue:

Tender Room, CRD Building, Ground Floor

SSGC Head office complex Karachi-75300

Ph. +92-21-99021024, +92-21-99021173, +92-21-99021116.

Earnest Money (Fixed Bid Bond): PKR 225,000/-

"Note: Tender document is also available online on SSGC website for view only. Bidder is eligible to participate in bidding process only after purchasing the tender documents from Tender Room SSGC Head Office as per the procedure mentioned in the Press Publication / SSGC website. It is mandatory for bidders to attach original Token Slip in front of the Sealed Envelope (issued at the time of Purchasing) as an evidence that supplier has purchased the Tender documents. Further, any Corrigendum/Clarifications/Addendums/Extensions issued to be notified to only those bidders who have purchased Tender documents." (Not applicable on EPADS Tender).

Sui Southern Gas Company Limited

Procurement Department

ST-4/B, Block-14, Sir Shah Sidana Road, Gulshan-e-Iqbal, Karachi-Pakistan

Phone: +92-21-9902-1279, 1259

Fax: +92-21-99231583

www.ssgc.com.pk

INVITATION FOR PRE-BID MEETING**SSGC/LP/EPADS/PT/2181279****Supply, Installation, Testing and Commissioning of Spare Parts of Air Handling Unit**

Dear Sir,

This refers to the subject Tender Enquiry, a Pre-Bid Meeting has been scheduled at 1100 hrs. on Tuesday 15-Sep-2026 at Conference Room, Procurement Department, 2nd floor SSGC-Head Office, Opposite Expo Center, Karachi.

You are requested to please to attend this Pre-bid meeting:

1. Only One (01) fully authorized person from each bidding Firm is allowed to attend the Meeting in the Conference Room.
2. Cell Phones are not allowed during the meeting.
3. Authorized person from bidder should bring:
 - (a) Original CNIC
 - (b) Authority letter to attend the Pre-bid meeting on their company's letterhead. (Mandatory)

You are requested to kindly follow above instructions in true letter and spirit.

Kindly acknowledge the receipt of this letter at: nnute@ssgc.com.pk


For General Manager (Procurement)





Checklist for Bidders

Enquiry #: _____

Opening Date: _____

Time: _____

M/s. _____

Please ensure before submitting the bid, that following information/ Documents have been submitted / providing along the bid. Kindly Check () appropriate box.

Sl. No.	Checklist Item	Action Required	Yes/No
1	Tender Document Availability on SSGC website & EPADS	Ensure the bidder participates via EPADS.	
		Download the tender document from EPADS.	
		Fill the BOQ/ Bid Form/ Schedule of Requirement correctly.	
		Submit the bid on EPADS before the deadline; otherwise, bid will be rejected.	
2	Physical Bid Bond Submission	Submit the physical bid bond to the Tender Room (SSGC HD) before the bid submission. And upload Scanned copy of Bid bond on EPADS.	
		If Bid Bond In original not submitted, the bid will be rejected.	
3	Bid Submission Deadline	Confirm all documents (electronic and bid bond in original) are submitted before the specified bid submission deadline.	
4	Signature and Stamp	Ensure all documents are signed and stamped as required and uploaded on EPADS or else bid will be rejected	
5	Additional Documents (if any)	Verify if any other documents specified in Tender document are included in the bid on EPADS.	
6	Tender Fees	Rs. 0 (Free)	
7	Technical literature	Original Technical literature is enclosed, if any duly signed & stamped	
8	Any change in your current address, Phone Fax no & Email etc. Intimated	Bidders are required to intimate Procurement dept. for any change in Current address, email, contact information etc. in tender documents	
9	Bid validity	Bid Validity as specified is mentioned	
10	Delivery / Completion period	Delivery / Completion period has been specified as per tender terms	
11	Corrections/Cutting/Overwriting	All corrections/cutting/overwriting are signed & stamped	
12	Sample	Sample (if necessary) is enclosed as per form attached in Tender Document	
13	Form-X	Form- X Duly Signed & Stamped	

Note:

Non-Availability of the above Information/documents, or incomplete/incorrect statement on this checklist may result in rejection of the bid at / after the bid opening.

As per SRO296(1)/2023 dated 08th March 2023 "E-Pak Procurement Regulation, 2023" all bidders are advised to register in e-Pak Acquisition and Disposal System (EPADS).



Bidders Authorized Representative

Sui Southern Gas Company Limited (SSGCL)

Contents

Part - A

Section - 1	General Terms & Conditions	Included
Section - 1A	Additional Terms for Tenders on FOB/C&F Basis	Included
Section - 1B	General Terms & Conditions of Services	Included
Annexure-A	Format of Bid Bond Bank Guarantee	Included
Annexure-B	Format of Performance Bank Guarantee	Included
Annexure-C	Declaration by Supplier	Included
Annexure-D	Contract Form	Included
Annexure-E	Form "Y" Sample Submission Form	Included
Annexure-F	Form "X" Bank Account Detail	Included
Section - 2 (Goods/Services)	Special Conditions of Tender Document (Goods/Services)	Included

Part - B

Section - 3	Schedule of requirement (BoQ)	Included
Section - 4	Technical Specification/Scope of Work / Drawing	Included
Section - 5	Black Listing Mechanism / Affidavit of Compliance with Integrated Management System (IMS) Manual / Form of Bid Securing Declaration	Included

SSGC

SUI SOUTHERN GAS COMPANY LIMITED
Procurement Department

M/s. _____

Tender Enquiry No. _____

INVITATION TO BID

Sui Southern Gas Company Limited, (SSGCL) has pleasure in extending you an invitation, to submit bid for the subject material according to Terms and Conditions specified in the attached Tender Document. Please read following instructions before submission of bid.

1. Bids are to be submitted in sealed envelope provided with the tender, indicating Tender Enquiry Number & its opening date and then on the face of the envelope.
2. Bid Bond @ 2% of the total FOB / FOB value shall be enclosed with the bid without which bid will be rejected and returned to bidder unannounced. The Bid Bond shall remain valid till the last date of the month in which it is expiring.
3. In case the bid opening date falls on a holiday or due to some unavoidable circumstances, it is not possible to open on scheduled date, it will be opened on next working day at the same time and at the same venue.
4. The bidder shall bear all expenses associated with the preparation and delivery of its bid sample and the Company will in no case be liable in this respect.
5. Prospective bidder requiring any information or clarification of the tender may notify the same by fax or at the mailing address. The Company will respond to any request for explanation or clarification, if received within reasonable time prior to submission of bids.
6. The Company reserves the right to cancel, add, delete or amend tendered items/quantities/any part of the tender during the bidding period without assigning any reason. However, bidders shall be informed about it prior to bid opening process.
7. The Company reserves the right to accept or reject any bid or part of a bid or to amend the bidding process and reject all bids at any time prior to award of contract/purchase order without thereby incurring any liability to the affected bidder(s).
8. In case of Single stage two (02) envelope bidding procedure (if mentioned in press advertisement & Tender document), sealed technical offer & sealed bid shall be submitted in separate envelopes. Bid Bond will be enclosed with "commercial" bid. "Technical Proposal" and "Financial Proposal" is to be mentioned on the top of the envelope. Technical offer will be opened and evaluated first. Financial offers of only technically compliant bidders will be opened at a later intimated date in presence of bidder's representatives. Financial proposal of technically non-compliant bidders will be returned unopened along with their bid bond.
9. For Tenders invited on F.O.B/C&F basis, conditions as mentioned in Section-1A will also apply.
10. The Company will appreciate confirmation by fax No 92-21-99231583 or email at smrta@ssgc.com.pk or to DGM (Procurement) of your intention to submit the bid and if not interested in submission of bid, it will be appreciated if it is intimated through fax or email with mentioning of reasons.
11. Bids are required to be submitted at:

Tender Room, CRD Building, Head Office Complex, Sir Shah Suleman Road Gulshan-e-Iqbal, Karachi Pakistan. Ph. 0092-21-99011024, 0092-21-99011025, 0092-21-99011279, 0092-21-99013074, Fax # 0092-21-99231583, Email: smrta@ssgc.com.pk

Hope and look forward for your valued participation.

Thanking you

Yours sincerely

M. Mustafa Iqbal
General Manager (Procurement)



Section - I

General Terms & Conditions

1. Submission of bids:

- 1.1. Bids are to be submitted in sealed envelope provided with the tender (in such a manner that contents are fully kept enclosed and cannot be seen until opened) indicating tender enquiry number, its opening date and time on the top of the envelope. Envelopes shall be addressed to General Manager (Procurement Department) on the address provided on "invitation to bid". Envelope shall indicate the name and address of the bidder for returning the bid in case it is declared late or submitted without bid bond.
- 1.2. Sealed bids (as above) shall be mailed/submitted/dropped in tender box placed at Tender Room, CRD Building, SSGC Head Office. Bids are to be delivered on or before closing time after which bid will not be entertained. In case bid is sent through courier, the same shall be delivered at least half an hour before scheduled opening time.
- 1.3. The Company may at its discretion extend the closing date for the submission of bids, in which case all rights and obligations of the purchaser and bidders previously subject to the closing date will thereafter be subject to the date extended. However, any request for extension received from prospective bidders less than one week prior to bid opening date may not be entertained. In case of extension in bid opening date, the same will be advertised in press and simultaneously shall be intimated to prospective bidder who had purchased the tender documents.
- 1.4. The bid shall contain no interlineations, erasures or overwriting except as necessary to correct the errors made by the bidder, in case of any correction etc. it shall be signed and stamped by the person signing the bid.
- 1.5. The quoted price shall be inclusive of all duties/taxes except GST, which is to be mentioned separately. The supplier shall declare (if applicable) regarding non-applicability of GST for which documentary evidence shall be enclosed or could be produced upon demand.
- 1.6. Rates shall be item-wise, as given in price schedule/schedule of requirement/Bid Form unless otherwise specified.
- 1.7. Bidder is responsible for timely delivery of bids at location specified 1.2 above. Company will not be responsible for misplacement/ tampering/non-attendance/delay or any other incident in case the bid is not delivered at the designated place & time.
- 1.8. Any bid received late after the closing date and time, will be rejected and returned unopened.
- 1.9. The quotation shall only be acceptable as/as per Bid Form. In case for foreign tender when Local Agent submits bid on behalf of different bidders, a separate Bid Bond for each Bid is required. Likewise for tender when bidder submit alternative bids a separate bid bond for each bid is required or else bid will be liable for rejection.
- 1.10. Deviation from tender terms and conditions is not allowed. However, in unavoidable circumstances, these shall be mentioned at the bottom of "Section 3: Bid Form" deviation on any other page will not be entertained.
- 1.11. Discount offered (if any) shall be mentioned on the "bid form" only.
- 1.12. The bidder(s) or their authorized representative shall put his full signature with stamp & date on each page of tender document as well as enclosure vis-a-vis drawings, specifications etc. Any correction, overwriting shall be duly signed & stamped.
- 1.13. The bid is to be completed and returned to the Company in accordance with, General terms & conditions. General terms & conditions duly signed & stamped (as a token of acceptance) shall be submitted along with Bid Form (Price schedule) duly completed as per requirement. However, specifications/drawing is to be retained by bidder for their future references.

2. Eligible Countries / bidders:

The invitation for bids is open to all manufacturers/suppliers/stockiest/dealers/pre-qualified bidders but is not applicable to those countries where inter trade protocols with Pakistan do not exist or those countries from where imports are not allowed by Government of Pakistan.

3. Qualification/Disqualification of Suppliers:

The Company, at any time, ~~may~~ **shall** follow the **Attached Black Listing Mechanism** having credible reasons for or proof of evidence of any defect in suppliers. may require the suppliers or contractors to provide information regarding their professional, technical, financial, legal or managerial competence.

Please Follow the Attached
Black Listing Mechanism



whether already pre-qualified or ~~not~~ **Follow the Attached** Company shall disqualify a supplier or contractor if it finds, at any time that the information regarding ~~such~~ **listing mechanism** supplier or contractor was false and materially inaccurate or incomplete.

4. Joint Ventures

In the event that the successful bidder is a joint venture (formation of two or more companies), the Company will require an undertaking on judicial stamp paper that the parties to the joint venture accept joint and several liabilities for all obligations under the purchase order/contract.

5. Clarification of tender documents

Prospective bidders requiring any further information or clarification of the tender documents may notify the Company in writing or by fax or at the Company's mailing address indicated in the "invitation to bids". The Company will respond in writing to any request for information or clarification of the tender documents, if received five working days prior to closing date for the submission of bids prescribed by the Company. The Company response (including an explanation of the query) will be sent in writing or by fax/e-mail to all prospective bidders who have purchased the tender documents. Verbal instructions/reference will not be acceptable.

6. Modification and withdrawal of bid

6.1 The bidder may modify or withdraw its bid after the bid submission, provided the written notice of the modification or withdrawal is received by the Company prior to the deadline prescribed for submission of bid. After the bids/quotations are opened, no bidder shall be allowed to revise, propose or request any change in the bid.

6.2 The bidder's modification or withdrawal notice shall be sealed and addressed to GM (P). A withdrawal notice may be sent by fax followed by a signed copy.

6.3 Bids once opened cannot be withdrawn during validity period.

7. Bid validity

All offers shall remain valid up to 90 days (120 days in case of Two Envelope bidding procedure) from the date of opening of bids, until any further extension agreed by the bidder. If the bidder agrees for extending bid validity the bid bond shall also be extended accordingly. A bidder giving extension to his bid validity will not be required or permitted to modify his bid. If there will be any query/clarification or extension request asked by the Company, the bidder should reply the same within 7 days after receipt of the same and if bidder takes more than 7 days the delay in reply will be added in their bid validity period.

8. Rate Escalation

8.1 All items except line-pipe

Quoted prices shall remain valid, firm, irrevocable and fixed till the fulfillment of obligations by the bidder and will not be subject to escalation / change on any account.

8.2 Line-pipe only:

- 8.2.1 Bidders are essentially required to submit detailed breakdown of rates indicating per ton price of:
- HR Coil
 - All other charges (including wastage, transportation, conversion cost etc).

8.2.2 Rate / price offered by the bidders shall be firm and irrevocable. However bidder offering pipe manufactured from Pakistan Steel Mills (PSM) HR coil are required to submit certified documentary evidence of HR coil rates. Adjustment in line-pipe rates (from the bid opening date till the currency of order) due to change in rate of HR coil manufactured by PSM is admissible to the extent of raw material cost without wastage. The bidders are required to submit certified documentary evidence of HR coil rates published by PSM, at the time of submission of bids. SSGC may verify the document / rates from PSM.

8.2.3 The variation clause however shall not be applicable on line-pipe quantities which were delivered within 20 days of the announcement of the variation (both days inclusive) in price of HR coil by PSM.



8.2.4 The variation clause also shall not be applicable on the line pipe quantities delivered after the specified delivery schedule (total or monthly consignment wise)

8.2.5 No escalation is applicable on line pipe manufactured from imported HR coil.

9. **Bid bond (earnest money):**

Bid bond equivalent to two percent (2%) of the total offer value, in favor of Sui Southern Gas Company Ltd. shall accompany the bid if bid value is above Rs.500,000 in the form of pay order, demand draft, call deposit receipt or a bank guarantee (specimen of bank guarantee is attached at Annexure-A), issued by a scheduled bank in Pakistan. The bid bond shall remain valid for 120 days (150 days in case of Two Envelope bidding procedure) unless specified otherwise. The bid bond shall be returned/refunded to the unsuccessful bidders while the bid bond of the successful bidder shall be retained, till submission of Performance bond (if applicable). Bids without bid bond will not be considered. In case the order value is less than Rs. 500,000 the bid bond in lieu of performance bond will be retained till fulfillment of obligations by the supplier. However, in either case the bidder is responsible to arrange the extension the bid bond validity as per requirement. If bid bond submitted by the supplier is more than 2% of ordered value, it may be replaced with appropriate value. If order value is less than Rs. 500,000, the bid bond will be returned along with the order. Bid bonds of non-compliant bidders may be released during evaluation process. The bid bond may be forfeited if a bidder withdraws the bid during validity period specified by the bidder or if successful bidder fails to:

- Accept purchase order,
- Furnish performance guarantee in accordance with clause 16 of Section 1,
- Supply material as per requirement and delivery schedule.

9.1 In the event of bid bond validity following short of the prescribed period of 120 or 150 days as the case may be either (i) due to extension in the bid submission date or (ii) where so required by the procuring agency, then in such an event it shall be mandatory on the bidder to extend the bid bond validity upto 120/150 days within 30 days of the opening of technical proposal / bid, and / or where so required by the procuring agency.

9.2 In the event of the bid security amount deposited / furnished by the bidder falls short by 10% of the requisite Bid security amount. The procuring agency keeping in view the nature of the procurement may consider and allow the bidder to deposit / furnish the balance 10% amount, provided the bidder does so within 15 days of the opening of the bid. Notwithstanding that all other terms & conditions have been fully complied with.

10. **Opening of bids:**

Bids will be opened in presence of bidders or their authorized agents at the address provided in "invitation to bids". The bidder's representatives who are present shall sign the bid opening sheet (attendance sheet) to mark their attendance/witness. Commercial contents of bids will be announced/recorded in bid opening sheet.

11. **Preliminary Examination of bids:**

- 11.1 The Company will examine the bids to determine their completion, computational errors, provision of guarantees, authorized signature and other related matters.
- 11.2 Arithmetic errors will be rectified on the following basis. Discrepancy between unit price and the total price obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price will be corrected. Discrepancy between total bid amount and the sum of total prices, the total prices shall prevail and the total bid amount will be corrected.
- 11.3 Prior to a composed evaluation, the Company will determine the substantial responsiveness of each bid to the bidding documents. In Company's opinion a substantially responsive bid is the one which conforms to all the terms and conditions of the Bidding documents without any material deviation.
- 11.4 Bids determined as not substantially responsive will be rejected by the Company and cannot subsequently be made responsive by the bidder through correction of the non-conformity.



12. Clarification of submitted bids:

To assist in the examination, evaluation and comparison of bids, the Company may at its discretion inquire any clarification from bidder about their bid. All responses by bidders shall be provided in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

13. Technical Literature & Samples.

The Bidder(s) shall submit the following.

- 13.1 Samples (if applicable/required)
- 13.2 Original or legible copy of technical literature/performance characteristics
- 13.3 Test Certificates (if applicable/required)
- 13.4 Documentary evidence for legal import in case of imported material. (At the time of delivery when quoted on FOR basis)
- 13.5 In case of pipeline operation material bidders must also attach a "proof from supplier/manufacturer, that goods offered have been used successfully on a high pressure natural gas pipeline elsewhere under tropical climatic conditions.

13.6 Specification Compliance Sheet:

Company requires a clause-by-clause commentary on the Specifications, demonstrating the material's responsiveness to those specifications or a statement of deviations and exceptions to the provisions of the specifications, if so required/desired. For purposes of the commentary to be furnished pursuant to above, the bidder shall note that standards for workmanship, material and equipment and references to brand names or catalogue numbers, designated by the Company in the specifications are intended to be descriptive only and not restrictive. The bidder may substitute other authoritative standards, brand names and/or catalogue numbers in its bid provided which demonstrates to the Company's satisfaction that the substitutes are equivalent or superior to those designated in the specifications by the Company.

Bid which does not possess above documents, certificates etc., may be considered technically Non-compliant.

- 13.7 The offer shall be accompanied with all technical data/documents/certifications as required under the tender specifications. Evaluation shall be carried out on the basis of data/ documents/certifications submitted with the bid. No clarification, additional information may be sought / accepted after bid opening.

13.8 Deviation to technical specifications:

The bidder shall fill the "technical compliance sheet" and mention offered specifications along with reference to its technical brochure/literature (page/clause No.etc). Statement such as "Compliant" or "Confirmed" is not acceptable. Deviation to tender terms and technical specification is not acceptable. However, if bidder feels to mention minor deviation, the same shall be referred categorically on the "Bid Form" as well as on the technical compliance sheet stating reference of its technical data sheet/brochure. In case of insufficient information, data or documents, the Company is not liable to seek clarification and the bid may be determined non-compliant on provided information.

14. Award/Evaluation Criteria:

- 14.1 In case of locally manufactured items e.g. service line material & meter components, manufactured by local vendors, the lowest bidder will be awarded maximum quantity as per his declared capacity and past performance in respect of delivery and quality. New vendors / manufacturers shall also be considered for placement of a purchase order up to a maximum of 10% of the tender quantity if their submitted sample has been tested and approved and provided they have quoted lowest price or agree to accept the order on lowest received price.
- 14.2 Generally for other items other than above, ordering shall be based on technical compliance and lowest quoted price. Supplies may be subject to pre shipment inspection and post qualification by a third party in case of foreign material. If required during the process of manufacturing and / or inspection, SSGCL representative may visit the manufacturer facility to witness the manufacturing / inspection process.



- 14.3 Evaluation may be carried out both on item or on group of items/single or multiple packages basis depending upon the nature of requirement exclusively at the discretion of the company to ensure economic procurement.
- 14.4 Company reserve the right to settle the final terms of supply with the lowest evaluated and commercially responsive bidder. Any effort by the bidder (s) to influence the outcome of bid evaluation or placement of purchase order may result in disqualification of the bidder.

15. Loading of Bids:

Bids may be loaded with following if offer found to be deviated from specifications, delivery schedule, terms & conditions without stating the amount involved in such deviation by following method:

- 15.1 The cost of compensation / loading amount for that item shall be derived from the bid itself.
- 15.2 If 15.1 is not possible, average of rates of other bidders, who have quoted for that item conforming to technical specification, shall form the basis for cost compensation/loading.
- 15.3 The company will encourage participation by local bidders who will be given price preference. Loaded cost factor shall be determined as per prevailing Government policy / SRO. However they will submit details of local value addition on raw material imported by them and percentage of locally manufactured component with documentary evidence.

16. Performance Bond:

- 16.1 In case purchase order value is above Rs.500,000, the successful bidder shall submit performance bond guarantee which is to be submitted within ten days from receipt of LOI or order along with integrity pact. The successful bidder shall submit a performance bank guarantee (PBG) in the form of a pay order or bank guarantee (specimen attached at Annexure-B) issued by a scheduled bank in Pakistan, for an amount equivalent to 10% of the total value of the purchase order or as specified, in the "letter of intent". The performance bond unless specified otherwise, shall remain valid till:
- 16.1.1 Completion of final satisfactory delivery in case of consumable items.
- 16.1.2 12-18 months from the date of satisfactory delivery of the equipment/machinery.
- 16.1.3 Satisfactory delivery/installation of system in case the installation responsibility is on supplier's part.
- 16.1.4 120 days in case of chemicals.
- 16.1.5 In case of locally manufacturing item, the PBG equivalent to 3 months delivery schedule will be required after placement of purchase order which should remain valid till completion of final satisfactory delivery of the ordered quantity.
- 16.1.6 In case of small diameter line pipe (MS/MDPE) the PBG shall remain valid up to 3 months after completion of satisfactory final delivery.
- 16.1.7 In case of Vehicles, Manufacturer's Warranty is required in lieu of PBG.
- 16.2 The guarantee will be released after completion of this period, subject to satisfactory performance of the supplied equipment/machinery/system as mentioned at 16.1 above. The supplier shall keep the guarantee valid at their cost until fulfillment of the obligations.
- 16.3 In case the bidder does not submit the performance bond as specified, the delivery time of goods shall be deemed to have commenced 10 days (15 days in case of import) from the issuance of letter of intent/purchase order. The proceeds of the performance bond shall be payable to the Company as compensation for any loss resulting from the supplier's failure to complete its work under the purchase order/ contract. The validity period of the performance bond is to be extended if the delivery date/period is being extended mutually by the Company/supplier.
- 16.4 The performance bond will be discharged / returned by the Company not later than thirty (30) days following the date of completion of the supplier's work under the purchase order/contract including any warranty/guarantee/performance obligations as specified in the special conditions of contract. The supplier shall not be absolved of their liability to perform in case of encashment of performance bond by the Company, who shall have the right to claim and receive all damages/losses occurred due to non-performance.
- 16.5 The Company shall promptly notify the supplier in writing for any claim arising under this guarantee. Upon receipt of such notice, the supplier shall promptly agree to replace the defective goods or parts thereof, without cost to the Company other than, where applicable the cost of inland delivery of the repaired or replaced goods or parts from the port of entry to the final destination.



- 16.6 If the supplier, having been notified, fails to rectify the defect (s) in accordance with the purchase order/contract, the Company may proceed to take such remedial actions as may be necessary at the supplier's expense. Any amount payable by the supplier under this clause may be recovered by the Company, by withdrawing from the performance bond without having to notify or seek the approval of the supplier.
- 16.7 Nothing herein contained shall be construed to limit supplier's obligation of performance of the order/contract to the value of the performance bond.
- 16.8 **Guarantee/Warranty:** In case where performance guarantee is not applicable, the supplier shall confirm that all supplied goods under the contract/purchase order are new, unused, of the most recent or current models and incorporate all recent improvements in design and goods unless provided otherwise in the contract/purchase order. This guarantee shall remain valid for a period of twelve to eighteen months after the goods have been delivered or commissioned.
17. **Purchase Order/Contract:**
Purchase order of quoted material may be placed on fulfillment of conditions mentioned at 14 & 16 above which is through formal confirmation for proceedings with the suppliers.
18. **Assurance:**
The successful bidder will be required to give satisfactory assurance of its ability and intention to deliver the goods, pursuant to the tender enquiry and contract within the time set forth therein.
19. **Force Majeure:**
- 19.1 In the event of either party hereto being rendered unable, wholly or partially, by force majeure circumstances to carry out its obligations under the purchase order/contract documents, such party shall give notice and full particulars and other satisfactory evidence of such force majeure circumstance(s) in writing or by fax to the other party within 7 days after the occurrence of the cause(s). Relied upon the obligations of the party giving such notice so far as they are affected by such force majeure shall be suspended for the period during cause(s) shall, as far as possible, be remedied and obliterated with all reasonable dispatch. The term 'force majeure' as employed herein, shall mean acts of God or public enemy, civil insurrection, fire, floods, earthquakes or other physical disasters, order or request of governments, blockade or embargo. It is, however, clarified that strikes, lockouts, shortage or non-availability of raw materials, riots, and disturbances, other labor dispute or congestion's in ports on the supplier's side shall not be included in the term 'force majeure'.
- 19.2 In case the force majeure contingencies last continuously for more than one month, both parties will agree on the necessary arrangements for the further implementation of the purchase order/contract. In case further implementation is unforeseeable and impossible, both parties shall arrange for the termination of the purchase order/contract, but without prejudice to their rights and obligations prior to such termination it being understood that each party shall fulfill its contractual obligations so far as they have fallen due before the operation of force majeure.
20. **Amendment in purchase order/contract:**
- 20.1 The Company may at any time by a written notice to the supplier make changes within the general scope of the purchase order/contract in any one or more of the following:-
- 20.1.1 Drawings, designs or specifications where goods to be furnished under the purchase order/contract are to be specifically manufactured for the Company.
- 20.1.2 The method of shipment or packing.
- 20.1.3 The place of delivery.
- 20.1.4 Quantities of item up to a maximum variation of +15% of purchase order/contract value.
- 20.2 Company reserves the right to increase/decrease the quantities or delete any or all items listed in the price schedule/schedule of requirement/bid form without assigning any reason.
- 20.3 Upon notification by the Company of such modifications the supplier shall submit to the Company, an estimated cost for the proposed modification within ten (10) calendar days of receipt of notice of the modification and shall include an estimate of the impact (if any) of the modification on the delivery dates under the purchase order/contract, as well as a detailed schedule for the completion of the modification, if applicable.



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- 20.4 The supplier shall not perform modification in accordance with clause 20.1 above until the Company have authorized a modification order in writing on the basis of the estimate provided by the supplier as described in clause 20.3.
- 20.5 Modification mutually agreed upon shall constitute a part of the work under the purchase order/contract and the provisions and conditions of the contract shall apply to the said modification.
- 20.6 If modification made by the Company results in a variation in purchase order/contract quantities whose net cost effect is within 15% of the total value then the original purchase order/contract rates would be applicable. Any "modification" affecting the quantities and the corresponding cost effect beyond 15 percent would be mutually agreed upon between the Company and the supplier.

21. Extension in delivery period:

- 21.1 Delivery of the goods shall be made by the supplier in accordance with the schedule of requirement and delivery period, however, the supplier may claim extension of the time limits as set forth in the schedule of requirements and delivery period in case of
- 21.1.1 Modification in the goods ordered by the Company pursuant to clause 20.
- 21.1.2 Delay in provision of any services which are to be provided by the Company (services provided by the Company shall be interpreted to include all approvals by the Company under the contract).
- 21.1.3 Delay in performance of work caused by orders issued by the Company.

21.2 The supplier shall demonstrate to the Company's satisfaction that it has used its best endeavors to avoid or overcome such causes for delay and the parties will mutually agree upon remedies to mitigate or overcome such causes for delay.

21.3 Notwithstanding clause 21.1 above, the supplier shall not be entitled to an extension of time for completion unless the supplier at the time of such circumstances arising, immediately has notified the Company in writing of any delay that it may claim as caused by circumstances pursuant to clause 21.1 above and upon request of the Company, the supplier shall substantiate that the delay occurred is due to the circumstances referred by the supplier.

22. Packing:

22.1 The material shall be in original/sealed packing to ensure delivery without any damage during transit.

22.2 If any of the good is discovered to be damaged or unacceptable at the point of embarkation, the supplier shall be responsible for replacement of those goods free of any charge and cost to the Company, within the delivery time schedule of the contract/purchase order.

22.3 The identification marks showing contents, quantity and contract/purchase order number shall be printed on each skid/metal container/case containing one copy of invoice & packing list.

22.4 Handling and Transportation:

The Supplier shall arrange for the proper stacking of the Goods and for its proper storage and lashing and for other such provisions/suitable measures as may be necessary to safeguard against movement and damage to the Goods from the point of loading to its designated destination.

23. Inspection:

23.1 Pre-delivery inspection may be carried-out at the premises of supplier(s) and/or post delivery inspection at company's any location, by the appointed inspector/inspection team, third party inspectors appointed by the Company.

23.2 The Company reserves the right to arrange inspections and tests to the goods or manufacturing processes at any stage at any of the premises of the supplier or its subcontractor(s), or and at the point of delivery and at the goods final destination. Where conducted on the premises of the supplier or its sub-contractor(s), all reasonable facilities and assistance including access to drawings and production data shall be furnished to the inspection at no charge to the Company. Such inspection, however, shall not relieve the Supplier to fulfill the obligations under the



purchase order/contract. If goods fail to conform to the specifications, the Company may reject them.

24. Delivery:

24.1 Free delivery at any of the following locations, unless specified otherwise:

- 24.1.1 R & D Section, Stores Department Abul Hasan Ispahani Road Karachi.
- 24.1.2 R & D Section, Stores Department F-37, SITE Karachi.
- 24.1.3 R & D Section, Stores Department F-76, Dope Yard SITE, Karachi.
- 24.1.4 Meter Manufacturing Plant, Sir Shah Sulaiman Road, Gulshan-e-Iqbal Karachi.
- 24.1.5 Khadeji Store, 57th Kilometer at Super Highway Karachi.
- 24.1.6 Any other location specified by the company.

24.2 Delivery period shall commence after 10 days (15 days in case of import) of the issuance of letter of intent or from the date of purchase order/contract whichever is earlier, unless otherwise specified.

24.3 The supplier shall replace defective material at their risk & cost including transportation, duty, taxes etc.

24.4 GST Invoice if applicable be submitted at R&D section Stores Department along with material & delivery challan.

24.5 Unloading and stacking through cranes, fork lifters, labor etc. will be arranged by supplier at delivery site (for material like Pipes/Heavy Machinery & Equipment etc).

24.6 Delivery is to be made strictly in accordance with "delivery schedule" as specified by the Company.

24.7 The rejected material is to be collected/lifted by the supplier within a maximum period of one month after its intimation by the Company. Beyond specified period, the Company shall not be responsible for storage/safety of the uncollected material.

25. Delivery Failures:

25.1 In case the supplier fails to supply/ship the material within the stipulated period, the Company have the right to make an alternative arrangement for the purchase of the goods on such terms as may be offered. In such event all losses, cost and charges sustained/incurred by the Company on stated purchase shall be recovered from the Supplier without prejudice to any other right or remedy available to the Company which includes recovery of losses sustained by the Company from any due payment of the said supplier.

25.2 In the event Company remains unable to make such alternative arrangements, the Company has the right to recover from the supplier any or all losses sustained as a result of the supplier's failure to ship/supply the goods as per schedule of delivery.

25.3 In the event Company being forced to purchase any quantity or any other alternative not specified in this document as a result of any failure to supply/ship the material, the Company shall have the right to terminate the contract/purchase order without prejudice to any other rights or remedies available to the Company.

26. Payment:

26.1 The supplier after delivery of goods and its acceptance shall submit invoice to Finance Department of the Company, containing following information i.e.

- (a) Purchase order No. & date
- (b) Items
- (c) Quantity
- (d) Price
- (e) Invoice value
- (f) Point of delivery
- (g) Delivery challan indicating delivery date, etc.

Payment will be made within 30 days of completion of stated formalities.

26.2 Income Tax @ 3.5% or as applicable under the prevailing government rules will be deducted at source (except where the supplier provides an income tax exemption certificate). Quoted price shall be inclusive of all taxes, except GST, which shall be mentioned separately. Supplier(s) are required to submit signed and stamp acknowledgement slip, Sales Tax return, Annex "C" & Annex "T" (whichever applicable) in which Sales Tax (of relevant Sales Tax Invoice) is paid.



- 26.3 In case supplier is not liable to pay tax under the income tax ordinance or is liable to pay tax at a lower rate the supplier shall obtain a certificate from the tax authorities in Pakistan to that effect. In case the required certificate is not produced by the supplier prior to the date of payment, then the Company shall deduct tax at source from the gross payment payable to supplier.

27. Liquidated damages:

- 27.1 If supplier fails to deliver ordered material within the stipulated period/scheduled time specified in purchase order, Company, without prejudice to any other remedies, shall deduct from the bill or any other due payments/guarantees, as liquidated damages, a sum equivalent to 0.1% per day of the undelivered goods up to maximum 10%. The liquidated damages shall also be applicable for the cancelled quantity of goods under clause 28.
- 27.2 Whenever liquidated damages become payable, in the event that delivery of all goods and equipment is not made within the time period specified except on account of force majeure, the Company shall quantify the same and shall serve notice to the supplier requiring payment thereof. If the supplier fails to remit payment within 15 days of receipt of such notice, the Company shall forth-with become entitled to recover the same without recourse to the supplier, by calling upon The Performance Bond, withdrawals by way of liquidated damages shall not reduce the value of the Performance bond.
- 27.3 The payment of liquidated damages shall not relieve the supplier from performing and fulfilling all its obligations under the contract/purchase order nor shall the right and entitlements of the Company be affected or reduced in any manner.
- 27.4 In case of order placed on FOB/C&F basis, the delivery period shall commence from the date of confirmation of L/C. However, delayed submission of PBG period in excess of time limit will be deducted from the delivery period for the purpose of recovery of late delivery charges.
- 27.5 The liquidated damages shall be the sum equivalent to point one (0.1%) percent of the Contract price of the delayed goods as unperformed services for each day of delay, until actual delivery or performance, up to a maximum deduction of ten (10) percent of the Contract price. Once this maximum is reached, the Company may consider termination of the Contract at the risk and cost of the Supplier.

28. Default by Supplier:

- 28.1 The Company may, without prejudice to any other remedy by written "notice of default" sent to the supplier, cancel the purchase order whole or in part, if:
- 28.1.1 The supplier fails to deliver any or all of the ordered quantity as per specified delivery schedule or any extension thereof granted by the Company
 - 28.1.2 The supplier fails to perform any other obligation(s) under the "purchase order".
 - 28.1.3 The Company during the delivery period has reasons to believe that the supplier will not be able to fulfill the obligations under the purchase order/contract.
- The Company prior to exercising its right to cancel the purchase order/contract shall issue notice to the Supplier specifying the default(s) and the supplier shall submit an explanation within seven (07) days of receipt of such notice. If such explanation is not furnished within the stipulated time or if so furnished, is found to be unsatisfactory and/or the default(s) continues, purchase order/contract may be cancelled. The Company in addition to cancellation of purchase order/contract may suspend/cancel the shipment of supplier.
- 28.2 The Company shall have the right to terminate/cancel the contract/purchase order concluded between the supplier and Company, if:
- 28.2.1 The successful bidder fails to furnish the performance bond as under clause 16 thereof.
 - 28.2.2 The supplier fails otherwise to perform, fulfill or comply with terms, conditions, regulations and requirements of the contract/purchase order to carry out the work in accordance with the provisions thereof or abandons the shipment.
 - 28.2.3 The supplier becomes bankrupt or insolvent or makes an assignment for the benefit of its creditors.
 - 28.2.4 One or more consignments of material delayed by a period of more than three months or non-supplied.
 - 28.2.5 Rejection of manufacturing items as a result of observation by inspection team.



28.2.6 Penalty on higher rejection rate of supplied goods.

28.3 The supplier shall have the right to terminate the contract/purchase order if:-

28.3.1 The Company fails to establish the "letter of credit" within the stipulated period as required.

28.3.2 The Company becomes bankrupt or insolvent or makes an assignment for the benefit of its creditors.

28.3.3 The Company is in default and breach of its obligation and liabilities under the contract/purchase order.

29. Resolution of dispute:

The Company and the supplier shall make every effort to resolve the disagreement or dispute arising between them amicably by direct discussion under or in connection with the purchase order/contract.

30. Applicable law:

The purchase order/contract shall be governed by and interpreted in accordance with the laws of the Islamic Republic of Pakistan.

31. Declaration/Integrity Pact/Certification:

31.1 Successful supplier shall furnish the declaration (specimen attached at Annexure-C) within 10 days after issuance of LOI/order /contract if the order/contract value becomes Rs:10 million or above.

31.2 In case of F.O.B/C&F Purchase order/Contract, the Principal as well as "local agent" both will sign the "integrity pact" as required under this clause.

31.3 Bidders to submit a certificate on Rs:100/- non-judicial stamp paper certifying that they are not black listed by the Government/Autonomous bodies and declared as defaulted supplier.

32. Arbitration/resolution of disputes:

32.1 Any difference or dispute arising out of or in connection with the contract between the Company and the supplier which can not be amicably resolved shall be referred to arbitration in Karachi, Pakistan, to two arbitrators, one appointed by each party of such difference/ dispute. In case the judgment of the said Arbitrator being at variance, the matter shall be referred to an "umpire", who shall be appointed by both the side Arbitrators. The umpire shall be retired judge of a High Court or the Supreme Court of Pakistan. Such arbitrators and umpire shall together proceed to adjudicate the disputes in accordance with the Arbitration Act, 1940, as amended from time to time.

32.2 Prior to exercising any right by the Company or supplier to terminate the purchase order/ contract under the conditions stipulated above, a return notice shall be required to be given to the other party specifying such default(s) and calling for submission of an explanation within seven (7) days of receipt of such notice. If such explanation is not furnished within the stipulated time or if so furnished, is found to be unsatisfactory, and the default(s) continues, the purchase order/contract be terminated with notice to other party.

32.3 The agreement shall be governed by Law of Islamic Republic of Pakistan and the arbitration language shall be English.

32.4 During the course of arbitration, the supplier shall not suspend the performance of his responsibilities and obligations under the contract unless authorized by the Company in writing to do so.

32.5 In addition to the remedies as stated above, there is a "grievance committee" formed by the Company which can be approached by supplier in case of non-settlement of issues at any stage if supplier feels that settlement is not insight or not justified.

33. Redressal of grievances by the procuring agency:-

33.1 Grievance Committee is in place to address the complaints of bidders that may occur prior to entry into the procurement contract.

33.2 Aggrieved bidder may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report.

33.3 Bidder is to submit complaint on letter head duly signed by the authorized person. Tender reference, details / nature of complaint, complainant active telephone, cell, postal address, email



address must necessarily be provided. Incomplete / anonymous complaints will not be responded at all.

- 33.4 The Committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.

33.5 Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.

34. Blacklisting of Suppliers and Contractors:

The Company shall permanently blacklist or temporarily debar (at least for 6-months from participating in SSGC's tender proceedings) if, a supplier or contractor who either constantly fails to perform satisfactorily performance or found to be indulged in corrupt and fraudulent practices as defined below:

- 34.1 Corrupt and fraudulent practices* include the offering, giving, receiving, or soliciting of anything of value to influence the action of the Company.
- 34.2 If the supplier/contractor found responsible for the detriment of the Company during proceedings of procurement/contract, prior to its execution.
- 34.3 Misrepresentation of facts to influence the procurement process or the execution of the purchase order/contract.
- 34.4 Collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non- competitive levels and to deprive the Company of the benefits of free and open competition.

35. Supplier's Guarantee and Responsibilities:

The Bidder/Supplier shall guarantee that the materials supplied against this tender enquiry is new and is of acceptable quality and has been tried and approved on similar jobs. The validity and scope of such guarantee will be in accordance with conditions stated in this document. In case the opinion of the Company the Goods fail to perform the services in accordance with the specifications specified in Section IV due to manufacturing defects/defective material and/or workmanship, the Supplier shall replace, repair or reconstruct such Goods at his own cost in Pakistan wherever the Goods shall be located so that such Goods shall be restored to such conditions that it shall perform in satisfactory operating condition or to replace it with new Goods at Supplier's cost so that the goods shall perform in accordance with the specifications and details as set forth in the Contract/tender documents. If the Supplier shall fail to do so after expiry of 15 days notice to this effect served on him by the Company, the Company shall be at liberty to repair, replace and/or reconstruct the Goods at its costs provided in the event, the Company shall be entitled to recover total cost of such replacement from the Supplier withdrawing from the Performance Guarantee.

36. Language:

The bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the bidder and the Company shall be written in English language. Any printed literature furnished by the bidder may be written in another language provided that this literature is accompanied by an English translation in which case for purpose of interpretation of the bid, English translation shall govern.

37. Vehicle Applied by Authorized dealer of local manufacturer :

In case of vehicle supplied by authorized dealer of local manufacturer, the authorized dealer will be responsible to get the vehicle (s) registered through Excise Department Government of Sindh and provide Original Registration book / Original Registration Invoice / Tax payment receipt / other related documents & provide the vehicle (s) number plate (s) to SSGC. Registration fee will be reimbursed by SSGC subject to submission of Government of Sindh Excise Department receipt.



Additional Terms for Tender on F.O.B.C&F basis:

1. Submission of bids:

- 1.1 Bid bond (Earnest money) @ 2% of the total F.O.B value as per clause 9, of section 1 of "General terms & conditions" is required to be submitted with the bid. It may be noted that bids without bid bond will be rejected and returned to bidder.
- 1.2 In case the bidder is manufacturer the bid shall either be completely prepared by the foreign bidder including signing and stamping of all documents. In case, such documents are being signed by the local agent of the bidder, the bid shall essentially include supplier's original Performa invoice and an original authority letter in favor of local agent to sign the documents on their behalf. The bid is liable for rejection if these conditions are not met.
- 1.3 In case of Bidder offering to supply goods which the bidder did not manufacture or otherwise produce, the bidder shall be duly authorized by the goods manufacturer or the producer to submit bid or supply the goods on their behalf.
- 1.4 Bids shall be submitted (preferably through local agents) in two copies, (original + copy).
- 1.5 The price on unit FOB and C&F basis is to be quoted separately. Following are to be essentially indicated in the bid form:
 - 1.5.1 Country of origin.
 - 1.5.2 Port of shipment.
 - 1.5.3 Estimated gross/net weight, dimension & volume of offered item and estimated weight of each item.
 - 1.5.4 Delivery period or schedule in case of bulk quantities.
 - 1.5.5 Original technical literature.
 - 1.5.6 Beneficiary's complete address.

1.6 Foreign bank charges and L/C confirmation charges will be borne by the supplier.

1.7 Bid Currency:

The rates shall be quoted in bidder's home country or in United States Dollars. A bidder expecting to incur a portion of its expenditures in the performance of the contract in more than one currency and wishing to be paid accordingly shall indicate the same in their bid. However, bidder from Pakistan would be paid in Pak Rupee.

(Clause 1.5 of General Terms & Conditions is not applicable)

2. Bid bonds:

- 2.1 Bid bond shall be equivalent to two percent (2%) of the total F.O.B value, in favor of Sui Southern Gas Company Limited and shall be in the form of pay order, demand draft, call deposit receipt or a bank guarantee (specimen attached at Annexure-A), issued by a scheduled bank in Pakistan. The bid bond shall remain valid for 120 days (150 days in case of Single Stage Two Envelope bidding procedure) unless specified otherwise. The bid bond shall be returned/refunded to the un-successful bidders while the bid bond of the successful bidder shall be retained, till submission of Performance bond. Bids without bid bond will not be considered. In case the order value is less than US\$ 25,000 the bid bond in lieu of performance bond, will be retained till fulfillment of obligations by the supplier. However, in either case the bidder is responsible to arrange the extension of bid bond validity as per requirement. If bid bond submitted by the supplier is more than 2% of ordered value, it may be replaced with appropriate value. Bid bonds of non-compliant bidders may be released during evaluation process. The bid bond shall be denominated in the currency of the bid or any other freely convertible currency.

- 2.2 Bid submitted on behalf of different principals shall be required to submit separate bid bond along with the bid for each offer.

(Note as mentioned at Clause 9, 9.1 & 9.2 of General Terms & Conditions shall also apply).

3. Conversion to single currency:

In order to carry out evaluation and comparison, the Company will convert all bid prices expressed in various currencies to Pak Rupees at the buying exchange rates established by the State Bank of Pakistan or any other commercial bank in Pakistan for similar transactions on the date of opening of bids. In case of Two Envelope Bidding System, the exchange rates prevailing at the time of opening of Technical Proposals will be used for conversion and evaluation.



4. Evaluation Criteria:

- 4.1 The evaluation of bids will be carried out on C&F / landed cost basis, however purchase order will be placed on FOB price on freight to collect basis. The bidders are required to submit best freight charges obtained by them from Pakistan National Shipping Corporation (PNSC) in order to have a uniform basis to arrive at C&F cost. Bill of lading to indicate "freight payable by the consignee at destination" in local currency. Foreign currency exchange rate (selling) will be considered as of bid "opening date".
- 4.2 In the case of goods to be offered from outside Pakistan, custom duties and other similar import taxes which are applicable shall be added to the bid.
- 4.3 In case shipment by air it shall be arranged through Company's airfreight forwarder (s) or their nominated agent "on freight to collect basis".

(Clause No. 14.3 to 14.4 of General Terms & Conditions are also to be applicable).

5. Loading of Bids:

Freight charges from port of loading up to Karachi port or unit C&F value must be indicated in bid form, failing which bid will be loaded by 5 to 10% freight charges. Bid will be declared non-compliant if loading results an excessive increase in price of material.

(Clause 15 of General Terms & Conditions is also applicable).

6. Performance bond:

- 6.1 In case purchase order value is US\$25,000/- or above or equivalent for other currencies, letter of intent will be issued to successful bidders for submission of performance bond guarantee which is to be submitted within 15 days from receipt of L.O.I. The successful bidders shall submit a performance bank guarantee (P.B.G) in the form of bank guarantee (specimen attached at Annexure-B) issued by a scheduled bank in Pakistan, for an amount equivalent to 10% of the total value of the purchase order or as specified, in the letter of intent. The performance bond unless specified otherwise, shall remain valid till:

- 6.1.1 Completion of final satisfactory delivery in case of consumable items.
- 6.1.2 12-18 months from the date of satisfactory delivery of the equipment/machinery.
- 6.1.3 Satisfactory delivery/installation of system in case the installation liabilities will be on supplier's part.
- 6.1.4 120 days in case of chemicals.

- 6.2 The Letter of Credit shall be operative upon receipt of Performance Bond (as specified in para 6.1) and integrity part, any delay due to late submission of Performance Bond will be on supplier's account. Late submission of PBG should not affect the delivery schedule.

- 6.3 The performance bond shall be denominated in foreign currency or in currency of the contract/purchase order or in a freely convertible currency acceptable to the Company and shall be in the form of a bank guarantee.

- 6.4 In very special case subject to approval of the management, the P.B.G could be acceptable in Pak Rupee. However, an undertaking should be given by the supplier that in case of encashment of P.B.G supplier shall deposit short fall amount due to Pak Rupee exchange rate.

6.5 Warranty/Guarantee:

In case where performance guarantee is not applicable, the supplier shall warrant that all goods supplied under the contract/purchase order are new, unused, of the most recent or current models and all recent improvements in design and goods have been incorporated, unless provided otherwise in the contract/purchase order. This guarantee shall remain valid for a period of twelve to eighteen months after the goods have been delivered or commissioned.

(Clause 16.2 to 16.8 of General Terms & Conditions are also applicable).

7. Delivery:

- 7.1 Clause 7 "FOB" (on board vessel, shipment) shall be effected per vessel of Pakistan National Shipping Corporation (PNSC) owned or chartered vessels on "freight to collect" basis. Bill of lading to indicate "freight payable by the consignee at destination". In case goods ready for shipment and the PNSC vessel is



not available at port of loading, supplier shall intimate the same to Company immediately so that matter could be taken with PNSC in Pakistan.

7.2 In case of C&F order/contract, the supplier hereby guarantees/ensure:

- 7.2.1 To use clean and dry vessel suitable for marine transportation and shall not use tramp vessels.
- 7.2.2 The goods/material will be shipped/discharged with all care and diligence at their risk & cost and goods to be stored below deck. Accordingly, the supplier shall be responsible for all damages/losses during inland and marine transportation from the supplier's plant until arrival at Karachi port.
- 7.2.3 To provide as part of its work all services and functions related to handling, loading, unloading, lashing and securing in ship's holds and all costs, charges and expenses of which shall be included in the purchase order/contract price, unless otherwise specified.

7.3 In case of FOB order/contract, the supplier's obligations shall be over after the goods have crossed the ship's rails. The co-ordination, scheduling and lining-up for a PNSC vessel shall be the obligation of the supplier.

7.4 The supplier shall reimburse the Company all additional duties, taxes and other such charges paid by the Company on account of short shipment by the supplier for all items subsequently shipped on a no-charge basis or otherwise by the supplier. The supplier shall also reimburse the Company all additional duties, taxes and other such charges paid by the Company on account of incorrect invoicing by the supplier.

7.5 Shipment shall be deemed to have been made when the supplier has shipped the goods against a clean bill of lading and all other such documentation, as specified in clause 9.3 & 9.4 appearing next in sequence) have been furnished to the Company.

7.6 The supplier shall ensure that all above mentioned acts and other incidental and ancillary functions are conducted in accordance with sound and acceptable engineering practices. The Company shall be entitled to oppose any incorrect or inadequate practice adopted by supplier in this respect and the supplier shall take corrective action/measure forthwith to correct such omissions. If any goods are discovered to be damaged or unacceptable at the point of loading, the supplier shall be responsible for replacement free of all charges and costs to the Company within the delivery period specified in the purchase order/contract.

8. Insurance:

8.1 All goods supplied under the purchase order/contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in delivery clause 7.

8.2 Marine Insurance shall be the responsibility of the Company unless otherwise specified.

8.3 The supplier shall advise the Company by fax at least seven (7) days prior to the expected date of shipment, the following particulars:-

- 8.3.1 Name of the vessel and of the shipping company.
- 8.3.2 Age of the vessel (which should be less than 20 years).
- 8.3.3 Lloyds 100A1 or equivalent classification of the vessel.
- 8.3.4 ETD from Port of dispatch and ETA at Karachi
- 8.3.5 FOB/C&F value of the consignment.

The above information shall also be transmitted to the Company's underwriters, M/s. National Insurance Corporation by fax No. 0092-21-9202779 and to the Company referring Policy No. NIF/M/K/OP/002/73.

9. Payment:

9.1 Payment of FOB/C&F prices shall be made in the currency of bid through an irrevocable letter of credit (L/C) established in favor of the supplier, negotiable through the bank of their choice. Bidder shall indicate full name and address of the negotiating bank and the place at which they wish to negotiate the letter of credit. All bank charges outside Pakistan will be on supplier's account and all bank charges within Pakistan will be at Company's account. If confirmed letter of credit is required then charges for confirmation will be on supplier's account.

9.2 The supplier's request (s) for payment shall be made to the Company in writing as follows:

9.2.1 It shall be accompanied by an invoice describing, as appropriate, the goods delivered and the services incurred and by shipping documents submitted pursuant to Clause 9.4 hereof and upon fulfillment of other obligations stipulated in purchase order/contract.

9.2.2 Against shipping documents on arrival of ordered materials at consignee destination. Bidder (s) will have to clearly mention, if they wish to opt for this mode of payment.

9.3 The letter of credit shall be available upon presenting the following documents to the negotiating bank within 15 days of the date of the bill of lading covering shipment of each consignment.



SSGC

- 9.3.1- Invoice --- 4 copies
- 9.3.2- Packing list --- 4 copies
- 9.3.3- Bill of lading "freight to be paid by consignee at destination" evidencing shipment in terms of the purchase order to Karachi-Pakistan made copies out to order in the name of Co.'s bank, Notify party Sui Southern Gas Company Ltd. --- 3 originals & 6 non-negotiable
- 9.3.4- Certificate of Origin (Verified/Endorsed by Chamber of Commerce) --- 2 copies
- 9.3.5- Manufacturers test certificate/ --- Inspection report
- 9.4 Without prejudice to the supplier's responsibility for providing documents mentioned as at 9.3.1 to 9.3.5 above to bank, the supplier shall forward the following non-negotiable documents directly to Company immediately after shipment so as to reach the Company at least 15 days prior to the arrival of the vessel at Karachi port.
- 9.4.1 -Invoice --- 6 copies
- 9.4.2 -Bill of Lading --- 6 copies
- 9.4.3 -Packing List --- 6 copies
- 9.4.4 -Certificate of Origin (Verified/Endorsed by Chamber of Commerce) --- 2 copies
- 9.4.5 -Manufacturers Test Certificate/ --- 2 copies
- Inspection report
- 9.4.6 The invoice to be exactly as per order/contract. Any deviation which renders of cause the company to pay demurrage or any other charges with respect to clearance/handling etc. will be borne by the supplier.
- 9.5 No payment hereunder shall be deemed to be accepted by the Company of the goods covered by such payment nor release the supplier from responsibility thereof under the terms of the purchase order/contract.
- 9.6 If the Company is compelled to pay demurrage or storage charges or incur any loss or suffers any damage at Karachi Port on account of non-compliance by the supplier of above requirements, the Company shall be entitled at their sole discretion to recover the same amount from supplier.
10. Termination of purchase order by supplier:
- 10.1 The supplier shall have the right to terminate the contract/purchase order if:-
- 10.1.1 The Company fails to establish the letter of credit within the stipulated period as required under clause 9.1 hereof after the supplier has made compliance with the provisions of clause 9.
- 10.1.2 The Company becomes bankrupt or insolvent or makes an assignment for the benefit of its creditors.
- 10.1.3 The Company is in default and breach of its obligation and liabilities under the contract/purchase order.
11. Installation/Commissioning/Training:
- If installation/commissioning and training is required, the charges will be paid in Pak Rupee and will be subject to deduction of all local duty and taxes (as applicable).
12. Vehicle (s) supplied by foreign manufacturer / principal:
- 12.1 In case of supply of any type of vehicle (s) / each moving vehicle (s) by the foreign principal / manufacturer. After clearance of vehicle from the custom, the local agent of the foreign supplier / manufacturer / principal will be completely responsible to get the vehicle (s) registered through Excise Department Government of Sindh and provide Original Registration book / Original Registration Invoice / Tax payment receipt / other related documents & provide the vehicle (s) number plate (s) to SSGC. Registration fee will be reimbursed by SSGC subject to submission of Government of Sindh Excise Department receipt.
- 12.2 The bidder / supplier shall quote only those vehicle (s) / which fully comply to Pakistan environment and can operate in Pakistan. The bidder should ensure that vehicle (s) components i.e. fuel tank & lubricants / spares are available in Pakistan.



SECTION-1-B of Services.

General Terms & Conditions

1. Definitions and Interpretation:

1.1 In these tender documents (as hereinafter defined) the following words and expressions shall have the meaning hereby assigned to them except where the Tender requires otherwise.

- a) **Company** means the Sui Southern Gas Company Limited; a Company registered under statutes of Pakistan and includes any successors-in-interest or assignees.
- b) **Engineer** means the Engineer(s) nominated by the Company to look after and supervise the Work.
- c) **Representative of the Company** means a duly authorized person appointed by the Company or as specified in the "Special Conditions of the Contract" to perform the assigned duties.
- d) **Bidder** means any person or persons, firm or company bidding for the Work.
- e) **Contractor** means the persons, firm or company whose Tender (as hereinafter defined) has been accepted by the Company and includes the Contractor's representatives, sub-Contractors, successors and permitted assignees (Prior to the execution of the Contract the word "Contractor" also means a Tenderer or Bidder submitting a proposal in accordance with the Tender Documents).
- f) **Agent or Representative** means person(s) appointed by the Contractor to perform duties as set forth in the Contract.
- g) **Laborers/Workmen** means such laborers/workmen and staff as may be employed by the Contractor for purpose of carrying out the Work.
- h) **Sub Contractor** means any firm or person having a direct Contract with the Contractor. Nothing contained herein however, shall be deemed or be construed to impose upon the Company, any obligation, liability or duty to a sub-contractor or to create any contractual relation between any sub-contractor and the Company.
- i) **Work** means whole of the Works / Services or part thereof to be executed in accordance with Tender / Contract documents, whether temporary or permanent and whether original, altered substituted or additional.
- j) **Contract Documents** shall consist of duly executed Articles of Agreement, the Tender Documents and the Tender submitted by the successful Bidder including modifications thereto incorporated in the documents before and after the execution of the Contract.
- k) **Contract Price/Value** means the sum named in Schedule of (SOR) / BOQ subject to additions thereto or deductions there from as may be made under the provisions hereinafter contained.
- l) **Plant** means all machineries, equipment, materials, appliances or things of whatsoever nature required in or about the execution, completion or maintenance of the Work, but does not include such equipment, materials, appliances or things intended to form part of the permanent Work.
- m) **Temporary Works** means all temporary works of every kind required in or about the execution, completion or maintenance of the Work.
- n) **Drawings** means the drawings referred to in the Contract documents and any modification of such drawings.
- o) **Location** means the land and other places on, under in or through which the Work is to be executed or carried out and other lands or places provided by the Company for the purpose of the Contract.
- p) **Approved/Approval** means approved/approval in writing by Company's representative or as specified in "Special Conditions of Contract".
- q) **Tender/Bid** means the offer tendered by the Bidder for the Work governed by the Contract.
- r) When the terms Acceptable, Satisfactory, Proper, or other such general qualifying terms are used in the Contract, it shall be understood that reference is made to be sole ruling and the sole judgment of the Company.
- s) The Word Equivalent or Equal where used in these documents in the general sense shall not mean Similar but shall mean "Conforming to, Like, of Kind/Quality and Function". "Proprietary Items" and "Trade Names" are used for the purposes of establishing a standard of "Kind, Quality and Function" and "Equipment" items, articles, things or materials will be approved, if held to be "Equivalent" by the Company.
- t) **Approved Banker** wherever occurring in this Contract shall mean a Scheduled Commercial Bank operating in Karachi and acceptable to the Company.



- u) **Specification(s)** means the standard codes of practice and other specifications issued with the Tender and any notification such as specifications approved in writing by the Company and other specifications as may from time to time be furnished or approved in writing by the Company.
- v) **Month** means calendar month of the Christian era.
- w) **Time Schedule** is a graphical illustration of the time span of various Work activities defining starting and completion dates.
- x) **Bonds** mean Bid Bond, Performance Bond or Bank Guarantee and other instruments of security furnished by the Bidder of his surety in accordance with the Tender/Contract.
- y) **Completion Date** means the date on which the Work has been completed in accordance with the Contract so that it can be utilized for intended purpose.
- z) **Day** means a day of 24 hours mid night to mid night.
- aa) **Completion Period** means the time allowed for the execution of the Work.

1.2 Words importing the singular only also include the plural and vice-versa where the Contract so requires.

1.3 The marginal headings or notes in these Conditions of Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

1.4 If there is any conflict between the Special Conditions and the General Conditions, the Special Conditions shall modify, supplement and supersede the General Conditions.

2. **Examination:**

Bidders shall visit/inspect/examine the Work & Location and shall fully acquaint themselves with the nature and requirements of Work/Services, access to Work/Location, availability of materials, weather, law and order and local conditions etc, before submitting their Bids. Submission of the Bid shall be prima facie evidence that the Bidders have fulfilled this requirement and shall be binding upon him.

3. **Conflict between Drawings/Specifications/SOR:**

In case of any conflict between drawings/specifications, SOW/TOR and SOR/BOQ, with regard to the quality of any item, the Contractor / Consultant shall base his quotation for the better quality. In case of any deficiency in the drawings/details, the Contractor / Consultants shall seek clarification from the Company. Submission of Bids/rates on the basis of incomplete drawings/details shall be Contractor / Consultant's sole responsibility.

4. **Additions, Deletions:**

The Company reserves the right to make addition (Upto 15 %) and delete the quantity from the Work defined in SOW/TOR/SOR/BOQ as deemed necessary before or after the execution of the Contract. All such additions and deletions shall only be authorized in writing by the Company.

5. **Schedule of Requirements:**

The quantities specified in the SOR/BOQ are estimated and are intended to serve only as a guide to the Bidders. Payments shall be made on the basis of actual Work quantum done as measured. No claims or adjustments shall be entertained/allowed on account of increase or decrease in the Scope of Work which has not been duly authorized by the Company through the issue of change orders as stipulated in the relevant provision.

6. **Rate:**

The Bidder shall quote all item rates and lump sum prices as shown in the "SOR/BOQ". Bidders shall fill in the rate / price for each item in the SOR/BOQ. In case of any discrepancy between item rate and the amount, the quoted item rate will prevail. The quantities given in the SOR/BOQ are estimated ones and are subject to variations. That is, there could be increase or decrease. Nevertheless, the item rates quoted by the Bidder shall remain fixed and no escalation whatsoever shall be permissible. The rates / prices quoted by the Bidder shall be workable. The Bidder shall be required to furnish a complete rate analysis of any item in the SOR/BOQ as considered necessary, by the Company.

7. **Evaluation:**

It may be clearly understood that this tender does not contain a price variation clause and therefore, all unit prices quoted shall be firm, irrevocable fixed and valid until completion of the Contract and will not be subject to variation on any account.

8. **Validity:**

Bids shall remain valid for acceptance for a period of (120) days from the date of bid opening. If the last date falls on a holiday, the validity will be extended to the first Company working day thereafter.

9. **Bid Bond (Earnest Money):**

The Bidder is required to furnish Bid Bond strictly in accordance with the prescribed format, in the form of a Pay Order, Demand Draft or Bank Guarantee issued only by a scheduled commercial bank operating in Karachi, for an amount fixed bid bond as specified of tendered Work / Services quoted by the Bidder in favor of Sui Southern Gas Company Limited. No Bid shall be considered without a Bid Bond and no cash or cheque or a guarantee issued by an insurance company shall be accepted.

The Bid Bond shall remain valid for a period of 150 days from the date of Bid opening. Bid Bonds of the unsuccessful Bidders shall be returned as soon as practicable. The successful Bidder's Bid Bond shall be retained by Company until execution of a Contract for the Work / Services defined in these documents and the submission of a Performance Bond prior to the execution of Contract.

In the event that the successful Bidder refuses or fails to provide (PBG) and Stamp papers for contract within fifteen (15) days of the issuance of a Letter of Intent, Company shall be at liberty to forfeit the Bid Bond.

In the event of the bid bond validity falling short of the prescribed period of 150 days as the case may be either (i) due to extension in the bid submission date or (ii) where so required by the procuring agency, then in such an event it shall be mandatory on the bidder to extend the bid bond validity up to 150 days within 30 days of the opening of technical proposal / bid, and / or where so required by the procuring agency.

In case when bidder submit alternate bids a separate bid bond for each bid is required otherwise bid will be liable for rejection. In case of Single Stage Two Envelope bidding system (bid bond will be enclosed with "Financial" bid, unless and until specified separately in Tender terms).

The bid bond may be forfeited if a bidder withdraws the bid during validity period specified by the bidder or if successful bidder fails to:

- Accept purchases order/LOI,
- Furnish performance guarantee in accordance with clause 10 of General Terms & Conditions,
- Extend Services as per requirement and completion Period.

10. Performance Bond:

The Bidder shall furnish a Performance Bond strictly (if the bid increases to Rs. 500,000/-) in accordance with the prescribed format in the form of a bank guarantee issued by a scheduled commercial bank operating in Karachi for an amount equivalent to _____ () percent of the Contract value. Failure to furnish the performance Bond before execution of the Contract will entitle the Company to consider the Bidder as having abandoned the Contract and the forfeit the Bid Bond. The Performance Bond shall remain valid till after three (03) month of completion of the work.

The Company's right to recover damages from the Bidder for breach of Contract shall not be limited to the value of the Performance Bond. In the event of the Bidder failing to execute a formal Contract or to submit the Performance Bond in the manner aforesaid and in the period specified, the Company shall be entitled to appropriate the earnest money submitted by the Bidder with his tender without prejudice to its right to claim any further loss or damage which may result to it by reason of the aforesaid default of the Bidder as if Contract is actually executed for the purpose of such claims.

The Bidder shall extend the validity period of the Performance Bond for such period(s) as required for the Contract performance.

The performance bond of the successful bidder will be released after successful completion of work.

11. Retention Money:

The amount to be retained from payments shall be equal to the specified percent of certified value of Work which would be released after the maintenance period.

12. Completion Period:

Subject to any requirements as to completion of any portion of the Work before the completion of the whole of Work, the Work shall be completed within the specified completion period. The Work shall not be considered as completed until the Company has certified in writing that it has been completed. Should extra, altered or additional Work of any kind, or any other cause of delay, which in the opinion of the Company could not have been foreseen by the Contractor / Consultant requires extension in completion time, then on the written request of the Contractor / Consultant, the completion period as provided in the Contract shall be extended by the Company. All such extensions shall be allowed in writing by the Company's representative.

13. Signing / Execution of Contract / Agreement:

Formal signing / execution of Contract / Agreement shall be completed within fifteen (15) days of receipt of "Letter to Proceed". The Company shall prepare the Contract in accordance with the prescribed format (Contract Form, and Articles of Agreement) for the purpose and the successful Bidder shall be communicated the date and time by the Company for the execution of Contract.

The successful Bidder shall provide the stamp paper, of value at the rate of thirty five (35) paise per every hundred Rupees or part thereof of the amount of the Contract, or at the prevailing rate as specified by the Government of Pakistan.



In case the agreement is executed for services i.e. Janitorial, Canteen, Landscaping, Maintenance Contract etc.... will be for One year extendable for further Two terms of one year each unless specified in Special Term & conditions.

14. Award / Evaluation Criteria:

Company reserves the right to settle the final award of job to the technically compliant and lowest evaluated and commercially responsive bidder.

Evaluation may be carried out both on item or on group of items/single or multiple package basis depending upon the nature of requirement exclusively at the discretion of the company to ensure economic procurement.

15. Commencement & Execution of Work:

Notwithstanding any delay in the preparation / execution of the Contract the successful Bidder shall commence mobilization / preparations and under take the Work within (15) days after receipt of the Letter to Proceed.

The Contractor / Consultant shall prior to commencement of Work, obtain the written authority and instructions of the Company.

16. Change in Orders:

The Company may at any time, by a written notice to the Contractor / Consultant, make changes within the general Scope of Work of the Contract.

Upon notification by the Company of such change, the Contractor / Consultant shall submit to the Company an estimate of costs for the proposed change (hereinafter referred to as a change) within ten (10) calendar days of receipt of notice of the change, and shall include an estimate of the impact (if any) of the change on the completion date (s) under the Contract, as well as detailed schedule for the execution of the change, if applicable.

The Contractor / Consultant shall not perform changes in accordance with above, until the Company has authorized a Change Order in writing on the basis of the estimate provided by the Contractor / Consultant.

Changes mutually agreed upon as a change shall constitute a part of the Work under this Contract, and the provisions and conditions of the Contract shall apply to said change.

17. Assignment:

The Contractor / Consultant shall not assign, in whole or in part, its obligations to perform under the Contract except with the Company's prior written consent.

18. Termination of Contract:

The Company may decide to terminate the Contract in one of the following situations:

(i) Termination for Default:

The Company may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Contractor / Consultant, terminate the Contract in whole or in part.

- (a) If the Contractor / Consultant fails to complete the contracted Works / Services within the time period(s) specified in the Contract or any extension thereof granted by the Company.
- (b) If the Contractor / Consultant fails to perform any other obligation(s) under the Contract.
- (c) If the Company during the completion period of the Contract has reason to believe that the Contractor / Consultant will not be able to fulfill the obligations under the Contract.

Prior to the exercising of any right by the Company to terminate the Contract, the Company shall issue notice to the Contractor / Consultant specifying the default(s) and the Contractor / Consultant shall submit an explanation within seven (07) days of receipt of such notice. If such explanation is not furnished within the stipulated time or if so furnished, is found to be unsatisfactory and / or the default(s) continues, the Contract may be terminated by the Company.

(ii) Termination for Insolvency:

The Company may at any time terminate the Contract by giving written notice to the Contractor / Consultant, without compensation to the Contractor / Consultant, if the Contractor / Consultant becomes bankrupt or otherwise insolvent. Notwithstanding the above such termination will not prejudice or affect any right of action or remedy which has accrued or will occur thereafter to the Company.



(iii) **Termination for Convenience:**

- a. The Company may by written notice sent to the Contractor / Consultant, terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the company's convenience, the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective.
- b. The Works that are complete and ready for Commissioning within thirty (30) days after the Contractor / Consultant's receipt of notice of termination shall be at the Contract prices and on the existing Contract terms. For the remaining Works, the Company can also opt to have any portion thereof completed and commissioned at the contract prices and on the other contract terms.

19. Liquidated Damages:

If the Contractor / Consultant fails to complete the Work or perform the Services specified in the Contract within the stipulated period / scheduled time specified in the Contract, the Company, without prejudice to any other remedies, shall deduct from the bills or any other due payments / guarantees, as liquidated damages, a sum equivalent to 0.1 % per day of the value the Contract, until actual completion of the Work or performance of the Services. However if delay of over 100 days takes place (i.e. equal to 10%), the Company reserves the right to terminate the Contract at the risk and cost of Contractor / Consultant. The liquidated damages shall also be applicable for the Works / Services terminated under Clause 16.

The payment of liquidated damages shall not relieve the Contractor / Consultant from performing and fulfilling all its obligations under the Contract and nor shall the rights and entitlements of the Company be affected or reduced in any manner.

20. Force Majeure:

The parties will not be considered to be in default in the execution of their contractual obligations or any of them to the extent that the execution of such obligations or any of them is delayed or omitted by cause of Force Majeure. Each party will advise the other party by written notice within 07 days of the occurrence of any such case of Force Majeure. The term Force Majeure employed herein shall mean acts of public enemy, wars (whether declared or not) invasion, hostilities, revolution, epidemics, riots (other than among the Contractor / Consultant's own employees) fires, floods, earth quake, commotion, disorder and other causes similar in kind to those herein mentioned, not under the control of either party, which makes the performance of this agreement unfeasible and which by the exercise of due diligence the party seeking excuse from performance is unable to overcome.

The Company shall not be liable to the Contractor / Consultant for any damage or loss caused by Force Majeure directly or indirectly.

21. Safety of Employees and Works:

The Contractor / Consultant shall be responsible to take all necessary precautions for the safety of employees on or off the Work, and shall comply with all applicable safety laws and codes to prevent accidents or injury to persons on about or adjacent to the places where the Work is being performed. All statutory rules, orders, regulation from time to time in force relating to taking and observance of all safety precaution governing or which might be deemed to be given during the execution and performance of the Work. The Contractor / Consultant shall comply with any and all personnel safety regulations. Any person of the Contractor / Consultant violating the safety rules shall be removed by the Contractor / Consultant from site and replaced without delay.

22. Insurance:

The Contractor / Consultant shall be responsible for obtaining a Contractor / Consultant's All Risk Policy (CAR) against risks to the Works and shall make good at his own cost, all losses or damages whether to the Works or to the lives, persons, whether under the workmen's compensation Act or Third Party Risk, or property of others from whatsoever cause arising out of or in connection with the works either during the progress of the works or during the period of maintenance provided by this Contract.

The Contractor / Consultant shall arrange insurance approved by the Company fully to cover workmen compensation and other claims arising out of sickness, injury or death of his personnel working at site and also to cover theft, loss of or damage to the Company's material in his possession and to indemnify the Company for third party claims for damage done or said to have been done to those persons or their property as a result of the Contractor / Consultant's activities on and off the site.



Insurance will be required where ever applicable:

Company's Address:

GENERAL MANAGER (PROCUREMENT)
SUI SOUTHERN GAS COMPANY LIMITED,
2ND FLOOR, HEAD OFFICE, ST-4/B, B-14,
SIR SHAH SULEMAN ROAD,
GULSHAN-E- IQBAL,
KARACHI - PAKISTAN.

Contractor / Consultant's Address:

23. Dispute Resolution:

If any dispute shall arise as to the interpretation of this Contract or any matter or thing arising there from, the same shall be settled as far as possible by way of amicable resolution. Failing such settlement, the dispute may be referred for arbitration to two Arbitrators, one to be nominated by each Party. The appointed Arbitrators shall before proceeding on the reference appoint an Umpire. The Award given by the Arbitrators or the Umpire as the case may be shall be final and binding on the Parties. The proceedings shall be governed by the Pakistan Arbitration Act, 1940 and any statutory modification thereof. The venue of arbitration shall be Karachi.

All costs of Arbitration shall be borne by the Parties themselves, unless otherwise ordered by the Arbitrator. Notwithstanding the existence of any difference or dispute, or the commencement or continuance of any arbitration proceedings, Works to be done or Services to be provided under this Contract shall not be suspended or discontinued by the Contractor / Consultant nor shall any payment be withheld by the Company except the difference of the amount in dispute, which is the subject matter of such proceedings.

24. Income Tax and Duties:

All kinds of Government Taxes and Duties (income tax, custom duties, etc.) also the provincial sales tax as per provincial law, against any item of the contract, shall be entirely the responsibility of the Contractor / Consultant. Income Tax will be deducted as applicable under the prevailing Government Rules. Rate of Income Tax deduction in relation to submission of Income Tax certificate from the Contractor / Consultant should also be stipulated.

All Foreign Service providers are required to obtain Advance Ruling from the Federal Board of Revenue (FBR) under Section 206A of the Income Tax Ordinance 2001 (Pakistan's Income Tax Law). The advance Ruling issued by FBR covers application of Income Tax Ordinance 2001 to Transaction proposed or entered in to Foreign Service Provider".

25. Payments:

Payment will be made within 30 days after completion of works.

The Contractor / Consultant shall submit to the Company during the execution of the Work on-account bills along with a statement / details of executed Work.

The rates and prices in such on-account bills and statement of Work shall be in accordance with those in the SOR/BOQ so far as such rates and prices are applicable and on the approved rates and prices for other items of Work. All payments against on-account bills shall be treated as provisional payments and will be subject to final adjustment.

The Company may withhold payment or on-account of subsequently discovered evidence, nullify the whole or part of any certificate to such extent as may be necessary to protect itself from loss on-account of:

- (a) Defective Work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claim.
- (c) Failure of the Contractor / Consultant to make payments properly to Sub-Contractor / Consultants.
- (d) Damage to another Contractor / Consultant.

When the grounds are removed payment shall be made for amounts withheld because of them.

Payments in respect of extra / additional Work will be made on the basis of the original Contract rates and the Contractor / Consultant will not be entitled to any extra compensation / payment including idle charges because of such delays.



The making and acceptance of the final payment after successful completion of Work shall constitute a waiver of all claims by the Company other than those arising from faulty Work appearing after final payment and of all claims by the Contractor / Consultant, except those previously made and still unsettled.

Supplier(s) are required to submit signed and stamped acknowledgement slip, Sale Tax return, Annex "C" & Annex "T" (whichever applicable) in which Sales Tax (of relevant Sales Tax invoice) is paid.

26. Blacklisting of Suppliers and Contractor / Consultants:

The company shall permanently blacklist or temporarily debar (at least for 6-months from participating in SSGC's tender proceedings) if, a supplier or Contractor / Consultant who either constantly fails to perform satisfactorily or found to be indulged in corrupt and fraudulent practices as defined below:

- 26.1 Corrupt and fraudulent practices includes the offering, giving, receiving, or soliciting of anything of value to influence the action of an official/company.
- 26.2 If the supplier/Contractor/Consultant found responsible for the detriment of the company during proceedings of procurement/contract, process or its execution.
- 26.3 Misrepresentation of facts (by providing fake documents, concealing, mis-reporting facts pertaining to the bid) in order to influence the procurement process or the execution of the purchase order/contract.
- 26.4 Collusive practices among bidders (prior to or after bid submissions) designed to establish bid prices at artificial, non-competitive levels and to deprive the company of the benefits of free and open competitive.

27. GOP's Obligation:

The contract shall be governed by the Law of Pakistan. The Contractor / Consultant is obligated to comply with all regulations and ordinance in force or to be passed by the Government of Pakistan in connection with Labor legislation during the course of the work to be performed. Any additional financial charges on account of revision in minimum wages by GOP will be company's responsibility while the contract is in operation.

This contract embodies the entire understanding of the parties hereto on this subject and there are no commitment, terms, conditions or obligations, oral or written, express or implied, other than those contained herein.

28. Late Bid:

Sealed bids shall be mailed/submitted/dropped in tender box placed at Tender Room, CRD Building, and SSGC Head Office, in accordance to the time specified in invitation to bid & tender notice (which ever applicable). Bids are to be delivered on or before closing time after which all bids submitted after the time prescribed shall not be entertained and will be returned without being opened. In case bid is sent through courier, the same shall be delivered at least half an hour before scheduled opening time.

29. Rebate / Discount:

Unit rate(s) given in the Bill of Quantities shall take into account all relevant factors including discount if any. Discount given separately at the time of bid opening will not be considered.

30. Joint Ventures:

In the event that the bidder is bidding as a Joint Venture, the Company will require the joint venture agreement duly executed by the parties to the Joint Venture to be submitted with the bid. The joint venture parties shall also furnish an undertaking to be jointly and severally liable for all liabilities arising out of obligation under the Purchase Order / Contract. The Joint Venture agreement of the parties must specify share of each partner and name of the lead partner along with their registration with the FBR, SST and BST as the case may be. Failure to specify these two narrations the joint venture agreement will not be entertained.

31. Correction / Amendments in Quoted Price:

Any overwriting in BOQ / SOR is not allowed. In case of type of any amendment / correction required in unit price / total amount the same has to be strikeout and re-written with corrected figures, properly signed & stamped out, in order to avoid an ambiguous bid.



SSGC

Annexure - A

On Non Judicial Stamp Paper of Rs. 50/- (Fifty) Per 100,000
Format of Bid Bond Guarantee

BANK GUARANTEE NO.....
DATE OF ISSUE.....
DATE OF EXPIRY.....
AMOUNT.....

Sri Southern Gas Company Limited,
ST. 4/B, Block-14,
Gulshan-e-Iqbal,
Sir Shah Sultan Road,
Karachi.

SSGC/LP/.....

Dear Sir,

Bid Bond Bank Guarantee

In consideration of M/s..... hereinafter called the Bidder
having submitted the accompanying bid & in consideration of value received from Bidder we hereby agree and
undertake as follows:

1. To make unconditional payment of Rs. upon your written demand without further
reasons, queries or reference to the Bidder or any other person in the event of withdrawal of the aforesaid
bid by the Bidder before the end of the period specified in the bid after the opening of the
envelope for the validity thereof or if no such period is specified within 90 days (150 days in case of Single Stage Two
Envelope bidding procedure) after said opening and or in the event that the Bidder shall within the period
specified thereafter or if no period specified within 15 days after the prescribed sums are presented to the
Bidder the signature the Bidder shall fail to execute such further contractual documents if any, as may be
required by the terms of the bid as accepted or on the Bidder failing to give the requisite Performance Bond as
may be required for the fulfillment of resulting contract.
2. To accept written intimation (s) from you as conclusive and sufficient evidence of the existence of a default
of non-compliance as aforesaid on the part of Bidder and to make payment accordingly within 03 days of the
receipt of the written intimation.
3. No grant of time or other indulgence to, or composition or arrangement with the Bidder in respect of the
aforesaid bid with or without notice to us shall in any manner, discharge or otherwise, however, affect this
Guarantee and our liabilities & commitments hereunder.
4. This Guarantee shall be binding on us and our successors in interest and shall be irrevocable.

Yours faithfully,

(Stamp and signature of the issuing bank)



SSGC

Annexure - B

On Non Judicial Stamp Paper of Rs. 50/- (Fifty) Per 100,000
Format of Performance Bond Guarantee

BANK GUARANTEE NO.....
DATE OF ISSUE.....
DATE OF EXPIRY.....
AMOUNT.....

Sol Southern Gas Company Limited,
ST. 4/B, Block-14,
Gulshan-e-Iqbal,
Sir Shah Sulaiman Road,
Karachi.

SSGC/LP/.....

Dear Sirs,

In The Sum of Rs..... Account.....
To You in Karachi under the Purchase

In consideration of your having placed Purchase Order No.....
dated..... On M/s..... called Supplier and in
consideration for value received from Supplier, we hereby agree and undertake as under:

1. To make unconditional payments to you from time to time as called upon or make an unconditional payments Rs..... Being Ten Percent (10%), of the value of the Purchase Order price mentioned in the said Purchase Order, on your written demand(s) without further resource, question or reference to Supplier or any other person, in the event of default or non-performance and / or non-fulfillment by Supplier of his obligations liabilities & responsibilities under and in pursuance of the said Purchase Order of which you shall be the sole judge.
2. To accept written intimation from you as conclusive and sufficient evidence of the existence of a default or breach as aforesaid on the part of Supplier and to make payment accordingly within 3 (three) days of receipt thereof.
3. To keep this guarantee in full force from the date hereof as specified in General or Special terms & conditions.
4. That on grant of time or other indulgence to amendment in the terms of the purchase order by agreement with Supplier in respect of the Performance of his obligations under and in pursuance of the said Purchase Order with or without notice to us, shall in any manner discharge or otherwise, however, affect this Guarantee and our liabilities and commitments there under.
5. This Guarantee shall be binding on us and our successors in interest and shall be irrevocable.
6. This Guarantee shall not be affected by any change in the constitution of the Guarantor Bank or the constitution of M/s..... the Supplier.

Yours Faithfully,

(stamp and signature of the issuing bank)



(Format of Declaration)

General Manager (Procurement)
Sui Southern Gas Company Limited,
ST. 4/B, Block-14, Gulshan-e-Iqbal,
Sir Shah Soleman Road, Karachi
Dear Sir,

SSGC/LP/

Declaration

(The Seller/Supplier) hereby declares its intention not to obtain or induce the procurement of any contract, right, interest, privilege or other obligation or benefit from Sui Southern Gas Company Limited or any administrative subdivision or agency thereof of any other entity owned or controlled by it (SSGC) through any corrupt business practice.

Without limiting the generality of the foregoing, (The Seller/Supplier) represents and warrants that it has fully declared the brokerage, commission fees etc. paid or payable to anyone and not given or agreed to give and shall not to give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from SSGC, except that which has been expressly declared pursuant hereto.

(The Seller/Supplier) certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with SSGC and has not taken any action or will not take any action in circumvent the above declaration, representation or warranty.

(The Seller/Supplier) accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation or warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to SSGC under any law, contract or other instrument, be voidable at the option of SSGC.

Notwithstanding any rights and remedies exercised by SSGC in this regard, (The Seller/Supplier) agree to indemnify SSGC for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to SSGC in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by (The Seller/Supplier) as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from SSGC.

Yours faithfully,

Signature & Stamp (The seller/supplier)

Note:

1. The above declaration is required to be submitted by the Successful Bidder after issuance of Purchase Order (PO) or Letter of Intent (LOI) on Bidder's letter head, for purchase order / letter of intent of a total value of Rs. 10,000,000/- (Ten million) or above.
2. Please note that submitting the declaration is a mandatory requirement.



CONTRACT FORMContract No. **SSGC/LP/EPADS2/PT**ARTICLES OF AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 2018 by and between Sui Southern Gas Company Limited, having its office at ST-4/II, 5th Floor, Muhammad Ali Road, Block 14, Gulshan-e-Iqbal, Karachi hereinafter referred to as the "Company" of the one part and M/s. _____ hereinafter referred to as the "Contractor", (which expression shall include the successors, of the said firm, heirs, executives, administrators and assigns of the Partners of the said firm individually or severally) of the other part.

WITNESSETH

WHEREAS, under the procedure, bids have heretofore been received by the Company for carrying out "_____ work and the tender of the Contractor for the said work has been accepted by the Company.

NOW THEREFORE, for and in consideration of the premises, negotiations, covenants and agreements hereunder contained and to be performed by the parties hereto, the said parties hereby covenant and agree as follows:-

Article-1 Work and Cost of the Work:

- 1) In consideration of the covenants and agreements to be kept and performed by the contractor and for the faithful performance of this Contract and the completion of the work embraced therein according to the specifications and conditions herein contained and referred to or agreed to in course of subsequent negotiations and in accordance with the Contract, the Company shall pay and the Contractor shall receive and accept as full compensation for everything furnish and done by the contractor under this agreement at sum of approximately Rs. _____, or such other sums as may be ascertained in accordance with the conditions of Contract, etc. and at rates quoted against each item of work and agreed to and accepted by the parties as one installment, and at the times and in the manner prescribed by the conditions of the Contract.

- 2) The Contractor at his own proper cost and expense shall do all work and furnish all labour, materials, tools, supplies, machinery and other equipment and plans that may be necessary for the satisfactory completion of all the works as set forth in the contract documents.

Article-2 - Time:

The maintenance of a rate of progress in the works at a rate which will result in its completion within the specified time, is of the essence of the contract and the Contractor agrees to proceed with all the due diligence and care at all times to take all precautions to ensure the timely completion as defined herein; time being deemed to be essence of the Contract of part of the Contractor.

The said work shall be started on the Contractor's receipt from the Company of a written order to proceed, and the Contractor shall have the work called for duty and fully complete in total months (including _____ weeks mobilization period) from the date of issuance of such order.

Article-3 - Contract Documents:

It is understood and agreed that the contract documents which comprise this Contract are attached hereto and made a part hereof and consist of the following :-

- a) The Article of Agreement.



- b) Bid (submitted vide letter No. _____, dated _____ comprising Letter of Invitation, Instructions to bidders, Scope of Work, Special and General Conditions of Contract, Tender Form, Bill of Quantities, Drawings, etc.).
- c) Company letter No. _____, dated _____
Contractor letter No. _____, dated _____
- d) Notice of Award (Letter of Intent (LOI) No. SSGC/MAT/S&C/_____, dated _____
- e) Acceptance by the Contractor on the copy of LOI.
- f) Letter to Proceed No. SSGC/PROC/S&C/_____, dated _____
- g) Performance Bank Guarantee No. _____, dated _____, amounting to Rs. _____ issued by M/s. _____

It is agreed by the parties to the contract that this contract shall be executed in two counterparts; one copy to be retained in the office of the Sui Southern Gas Company Limited and one given to the Contractor.

IN WITNESS WHEREOF the parties hereto have executed this Contract at Karachi in two counterparts by their duly authorized representatives as of the day and year herein above set forth.

Signed for and on behalf of
M/s. Sui Southern Gas Company Limited

Signed for and on behalf of
M/s. _____ Karachi

Signature: _____

Signature: _____

Name: _____

Name: _____

In the presence of:

Signature: _____

Signature: _____

Name: _____

Name: _____

Signature: _____

Name: _____



FORM "Y"

(SSGC - sample submission form)

SECTION A: HIDDEN INFORMATION

FIELD	DETAILS
Bidder Name / Firm Name	
NTN / GST No.	
Address	
Contact Person	
Contact Number	
Email Address	

Declaration by Bidder

I/We hereby declare that the sample(s) submitted are in accordance with the tender specifications and terms.
 I/We understand that failure to submit correct and complete samples may lead to disqualification.

Signature of Bidder:

SECTION B: TENDER DETAILS

FIELD	DETAILS
Tender No.	
Tender Opening Date	
Item(s) for which sample is submitted	
Quantity of Sample Submitted	
Specification/Description of Sample	
Make:	
Brand:	
Serial No:	
Generic size, height, weight, width:	
Other description:	

SECTION C: FOR OFFICE USE ONLY (TO BE FILLED BY TENDER ROOM)

FIELD	DETAILS
Date & Time of Submission	
Received By (Tender Room Staff Name & Sign)	
Tender Room Stamp	
Remarks (if any)	



Form of Bid-Securing Declaration

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

Date: [date (as day, month and year)]

Alternative No.: [insert identification No if this is a Bid for an alternative]
No.: [number of Bidding process]

To: [complete name of Procuring Agency]

We, the undersigned, declare that

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarrred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligations under the Bid conditions, because we:

(a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid or

(b) having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid validity, (i) fail or refuse to sign the Contract or (ii) fail or refuse to furnish the Performance Security (or guarantee), if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder, or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder: _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder: _____

Title of the person signing the Bid: _____

Signature of the person named above: _____

Date signed: _____

- In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder.

- Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid.

[Note: in case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members of the Joint Venture that submits the Bid.]



Amendment #

Supplier code: _____

FORM-X

Bank account details form for all Beneficiaries

(Mandatory requirement for Digital Online Banking)

As per FBR Regulations ref # C.No.4 (24) IT-Budget/2021-142150-R dated 23rd Sept'2021 to make the payment online w.e.f. 01-11-2021. All beneficiaries are required to fill in the below details, which is mandatory:

Name of Firm: _____

Address of Firm: _____

CNIC #: _____

NTN #: _____

Bank Name: _____

Bank A/C Title name: _____

Branch code: _____

Bank A/c #: _____

(16 Digits)

Bank IBAN #: _____

(24 Digits)

☐ Information already submitted.

Note: Please be attached copy of Cheque / Account Maintenance Certificate.(Mandatory)

Authorized Sign & Stamp

Date: _____

Note: All payments transactions will be made on above mentioned Account details. This is only a one time information to be provided by the all beneficiaries. In case if the above detail has already submitted, please tick the box above "Information already submitted" and also ensure Form-X is duly signed & stamped.



(services)

Section - 2
Special Conditions of Tender Document
Tender Enquiry No. SSGC/EE/

Note: In case of any conflict between special conditions of Tender Document and any other terms & conditions, the Special Conditions of Tender Document will govern / prevail.

- 1- Contractor to submit the following within 15 days after issuance of Letter of Intent (LOI).
 - a. Performance Bank Guarantee
 - b. Stamp Papers
 - c. Insurance Policy
 - d. Any other Document as mentioned in the LOI
- 2- Formal contract will be made on Non-Judicial stamp paper of value @ Rs 0.35 per hundred rupees of contract value, as per prevailing rate by Government of Sindh & Balochistan. The stamp duty will be borne by the contractor and also submit the copy of challan of stamp paper. Further as per Government of Sindh Board of Revenue notification NO.CIS/SWR/BOR/R&T-17/2022-808 dated 08-06-2022 all judicial and non-judicial stamp paper of the denomination of rupee five hundred and above shall be exclusively on e-stamp.
- 3- All kinds of Government Taxes, Duties and Levies against any item of the contract, shall entirely be the responsibility of the Contractor. Income Tax will be deducted as per applicable Law under the prevailing Government Rules. Rate of Income Tax deduction in relation to submission of Income Tax certificate from the Contractor should also be stipulated.
- 4- Bank Guarantee (Bid Bond Guarantee/Performance Bank Guarantee) will be made on Non-Judicial stamp paper at the prevailing rate as specified by the respective Provinces. Further the bidder/contractor submitting the Bid Bond guarantee/Performance Bank guarantee being prepared by the State Bank's schedule banks should ensure that there should be no deletion/insertion/alteration/modification of any terms in the Bid Bond/PBG guarantee format as given in the tender document or else bid will be liable for rejection.
- 5- If the letter to proceed (LTP) by user deptt. is not issued within six months after issuance of letter of intent (LOI), both the parties are at liberty to terminate/void the LOI without any claim of loss or damage to the other party.
- 6- The completion period of the said work shall start with effect from the issuance of Letter to Proceed, which in case of work exigencies could be issued prior to signing of formal agreement.
- 7- In case of services and works tenders:
Bids determined to be substantially responsive will be checked by the Procuring Agency for an arithmetic error. Errors will be corrected by the Procuring Agency as follows:
 - a. Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern ; and
 - b. Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rates as quoted will govern, unless in the opinion of the Procuring Agency there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
- 8- The bidder shall fill in rates and prices for all items of the works / services described in the BOQ. Item against which no rate or price is entered by a bidder will not be paid for by the Procuring Agency when executed and shall be deemed covered by rates and prices for other items in the BOQ. Any Bidder who change / amend the BOQ or Price Schedule (description, Quantity, UOM etc.) will render the bid as conditional bid and will be liable for rejection.
- 9- **Method For Submission of Bid Bond (Under Single Stage Two Envelope Bidding Procedure):**
In case of Single Stage Two Envelope Tenders the fixed bid bond as per clause#09 of General Terms & Conditions to be placed in the Technical Proposal. However, if the bid bond is placed in the financial proposal will also be considered. Without submission of bid bond (either in Technical proposal or financial proposal) the bid will be rejected.
- 10- Bid bond submission (2%) of the bid amount as mentioned in the clause 9 of General Terms & Conditions, to be treated as null & void, however other contents of clause 9 will remain unchanged. The submission of fixed amount of Bid security is appearing in the Schedule of Requirement/Bid Form.



- a) All the bidders are advised to furnish fixed bid security (Original Instrument) as per amount appearing in Schedule of Requirement/Bid Form, failing which their bid will be rejected.
- b) The submission of fixed amount of bid security is also mandatory for all the bids valuing Rs.500,000/- or less.
- c) The word lowest bidder or the lowest evaluated bid has been substituted to read as most advantageous bid.
- 11- Bid shall remain valid for acceptance for period of (120) days from the date of public opening of the bids & Bid Bond validity is for 150 days.
- 12- In case the local agent requires to offer bid form more than one Principal / Manufacturer, it is mandatory to purchase separate tender document for each Principal / Manufacturer, failing which the bid submitted with the original tender document will only be accepted and the bid with photocopy of tender document will be rejected.
- 13- **Blacklisting Mechanism of Suppliers and Contractors and their Local Agent:**
Black listing mechanism is attached separately in the tender documents which will become an integral part of Tender Documents and now be followed / enforced in true letter & spirit and supersede the Black Listing terms as mentioned in the General Terms & Conditions.
- 14- Original counter slip of token which is issued with tender document to be attached on the TOP of envelope at the time of bid submission."
- 15- The Successful Contractor(s) / Supplier(s) / Consultant(s) shall submit a copy of Professional Tax Certificate with their Invoices / Bills failing which the payment will not be released.
- 16- **Contracts of Contractors**
In the event the contractor is not willing to extend the CONTRACT for further term(s) / Period(s) under the same terms & conditions and the quoted price as defined in the bid documents, the contractor is liable to intimate in writing to SSGC at-least 3 (Three) months in advance prior to completion of the existing contract term / period, failing which, action will be taken as per tender terms.
- 17- **Insurance**
In addition to the Clause 22 -Insurance, of General Term and Condition, when The Successful Contractor(s) / Supplier(s) will submit Insurance Policy to SSGC, the Insurance Company (policy issuer) should be registered with SECP, otherwise the insurance policy will not be considered / rejected at contractor's risk and cost. The insurance coverage period will be according to the work completion period as mentioned in the contract / tender documents.
- 18- **Fixed Bid Security - Alternative Bid**
A bidder cannot submit two bids/offers with a single fixed bid security/pay order. However, the alternative bids/offers with separate fixed bid security/pay order can be accepted, failing which the bids will be liable for rejection.
- 19- **Bid Bond & PBG (Performance Bank Guarantee) for Proprietary Tenders**
In case of proprietary Tenders, the Bid Bond & Performance Bank Guarantee (PBG) are not required / Applicable.
- 20- SSGC will not pay invoices if they are turned in after 6 months of work completion / material delivered.
- 21- It is mandatory for the bidders to follow all the terms and conditions given in the tender documents without any addition / deletion / amendment and submit the bid accordingly. Therefore, in this context, the bidders are requested not to give their own terms and conditions as it tantamount towards the conditional bid. Otherwise their terms and conditions will not be considered and the Purchase Order / Contract will be awarded based on only as per SSGC tender terms and conditions.
- 22- The bidders/contractors are required to provide their only one Bank Account number (IBAN number) on the 'FORM-X' attached duly signed & stamped as one time information, which shall be firm (not changeable) for all the future payment transactions.
- 23- **Payment:**
The supplier after delivery of goods and its acceptance shall submit invoice to Finance Department of the Company, containing following information i.e.
- Purchase order No. & date
 - Items
 - Quantity
 - Price
 - Invoice Value
 - Point of delivery
 - Delivery challan indicating delivery date, etc.
 - Supplier(s) are required to submit signed and stamp acknowledgement slip, Sales Tax return,



Annex "C" & Annex "I" (whichever applicable) in which Sales Tax (of relevant Sales Tax invoice) is paid. Payment will be made within 30 days of completion of stated requirements.

24. In case the insurance policy submitted by the contractor is expired during the execution of job, it is the responsibility of the user department to coordinate with the contractor to get it renewed/updated till the period the job is completed/commissioned.

In case the job is not completed within the given time as per tender terms and the insurance policy submitted by the contractor expires, the contractor is liable to get this insurance policy renewed / updated immediately till the period of the job is completed / commissioned as per tender terms failing which the contractor will be responsible for any loss to SSGC.

25. Bidders can quote their rates on both i.e. Schedule of Requirement/Bid Form as well as Bill of Quantity (BoQ)

26. Subsequent to the issuance of LOI, successful bidder has to submit 10% Performance Bank Guarantee of the contract value unless and until specified in the tender document.

27. Company reserve the right to award the Purchase Order /LOI to most advantageous bidder.

28. As per SRO 592(I)/2022 of PPRA Regulations, for Procurement Contracts/Purchase Orders worth of Rs. 50 million and above, bidders/contractors are required to submit the Beneficial Owner's Information for Public Procurement Contracts/Purchase Orders (Annexure-I).

29. Bidder will be blacklisted and henceforth cross debarred for participating in respective category of Public Procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration (which is an integral part of tender document), however, without indulging in corrupt and fraudulent practices, if in breach of obligation(s) under the Bid conditions:

a) The bidder have withdrawn or modified their bid during the period of bid validity as specified in the tender terms.

b) Having been notified of the acceptance of bid by procuring agency during the period of bid validity (i) failure to sign the contract or accept purchase order (ii) fail or refuse to furnish the performance security or to comply with any other condition as mentioned in the tender document.

30. Wherever the "Rate Only" is mentioned (either on BOQ or anywhere in tender documents) the same shall only be applicable not exceeding 15% of the original procurement for the same items as given in the BOQ for package basis. In case the requirement is on item wise basis (not package basis) then not exceeding 15% of the original Procurement for the same items (on item wise basis) as given in the BOQ.

31. **Lot:** In case when the tender is floated on LOT basis, following clauses to be applied:

a) The bidder(s) are essentially / mandatorily required to submit fixed bid bond as mentioned in the bid form/BOQ/Invitation to Bid. Separate fixed bid bond to be submitted against each individual LOT and its validity to be 150 days at the time of opening of technical proposal.

b) Evaluation for each LOT will be carried out separately. Each LOT will be awarded separately.

32. For open competitive bidding if the most advantageous bidder is new local manufacturer, 10% trial order will be placed and remaining 90% order will be awarded to the next most advantageous bidder at their own quoted rates.

33. **Redressal of Grievances And Settlement of Disputes:**

- Any bidder feeling aggrieved by any act of the procuring agency after the submission of his bid may lodge a written complaint concerning his grievances within seven days of announcement of the technical evaluation report and five days after issuance of final evaluation report.

- In case, the complaint is filed against the technical evaluation report, the GRC shall suspend the procurement proceedings.

- In case, the complaint is filed after the issuance of final evaluation report, the complainant cannot raise any objection on technical evaluation of the report. Provided that the complainant may raise the objection on any part of the final evaluation report in case where single stage single envelope bidding procedure is adopted.

34. All the bidders are allowed to participate in the subject procurement without regard to nationality/origin, except bidders of some nationality/origin, prohibited in accordance with policy of the Federal Government. Following countries are ineligible to participate in the procurement process:

- India
- Israel



35. In Open Competitive Bidding Procedure where the quoted price is less than Rs. 500,000/- the Bid Bond will be retained in lieu of PBG.
36. In case the Bid Bond is not required, the bidder must submit the Form of Bid-Securing Declaration attached with the Tender Document else the Bid will be liable for rejection.
37. All Tenders floated through EPADS are to be governed by S.R.O. 296(I)/2023 dated: March 8, 2023 "E-Pak-Procurement Regulations 2023". In case of any conflict between SSGC Tender Terms / Instructions to Bidders and the PPRA EPADS Rules, the S.R.O. 296(I)/2023 will prevail.



Section-2
(Goods)

**Tender Enquiry No. SSGC/LP/
Special Conditions of Tender Document**

Note: In case of any conflict between Special Conditions of Tender Document and any other terms & conditions, the Special Conditions of Tender Document will govern / prevail.

1. Warranty / Guarantee Coverage

i) The successful bidder / supplier guarantee that the goods supplied against above tender enquiry are in all respect in accordance with the tender specifications & Purchase Order and that material used are in accordance with the latest approved standards and are of good workmanship / quality. Any item or part of item if found to be substandard or not meeting the specified criteria as per inspection carried out at stores. Then in such as event the Supplier / bidder hereby warrants and undertake to replace the same on Duty Delivery Paid (DDP) basis (INCOTERMS 2010) i.e. Free of all cost including but not limited to transportation, Taxes and levies. In case successful bidder / supplier failure to replace the defective item / remove the defect(s) free of cost within the period specified by the Purchaser, the successful bidder / supplier will refund the relevant cost including all other expenses incurred by the purchaser in this regard.

ii) The successful bidder / supplier must confirm that the warranty for non-consumable items will remain valid for 18 months and for consumable items (i.e. Chemical, Battery etc.) will remain valid for 6 months after the goods have been successfully delivered or commissioned.

iii) It is mandatory that the successful bidder / supplier will submit the attached undertaking at Annex-1, duly filled, signed & stamped.

iv) In case where performance guarantee is not applicable, the supplier shall confirm that all supplied goods under the contract / purchase order are new, unused, of most recent or current models and incorporate all recent improvements in design and goods unless and otherwise provided in the contract / purchase order.

v) The Warranty Undertaking being provided by the successful bidder is required to be submitted at least on Rs 200/- Non-judicial Stamp paper and should be duly notarized / attested.

vi) In case of Supply, Installation, Testing & Commissioning, since all these activities are inter-related to each other, therefore, the payment of supplies will be released after successful installation, Testing & Commissioning.

2. Bid Security:

a) Bid bond submission (2%) of the bid amount as mentioned in the clause 9 of General Terms & Conditions, to be treated as null & void, however, other contents of clause 9 will remain unchanged. The submission of fixed amount of Bid security is appearing in the Schedule of Requirement/Bid Form.

b) All the bidders are advised to furnish fixed bid security (Original Instrument) as per amount appearing in Schedule of Requirement/Bid Form, failing which their bid will be rejected.

c) The submission of fixed amount of bid security is also mandatory for all the bids valuing Rs.500,000/- or less.

d) The word lowest bidder or the lowest evaluated bid has been substituted to read as **most advantageous bid**.

e) Sub-clause 9.2 of the General Terms & Conditions to be treated as null & void, however, other contents of clause 9 will remain unchanged.

3. Method For Submission of Bid Bond (Under Single Stage Two Envelope Bidding Procedure):

In case of Single Stage Two Envelope Tenders the fixed bid bond as per clause#09 of General Terms & Conditions to be placed in the Technical Proposal. However, if the bid bond is placed in the financial proposal will also be considered. Without submission of bid bond (either in Technical proposal or financial proposal) the bid will be rejected.

4. Bid Validity:

All offers shall remain valid up to 120 days from the date of opening of bids and bid bond shall remain valid for 150 days.

5. Declaration / Integrity Pact / Certification: It is required to be submitted by the Successful Bidder on their letterheads after issuance of Purchase Order (PO) or Letter of Intent (LOI), for the value of Rs.10,000,000/- (Ten Million) or above. ANNEXURE-C is a mandatory requirement for successful bidder.

6. Stamp Duty:

"The successful Bidder shall provide the copy of challan and revenue stamp, of value at the rate of twenty five (25) paise per every hundred Rupees or part thereof of the amount of the purchase order, or at the prevailing rate as specified by the Government of Province of Sindh." Further as per Government of Sindh Board of Revenue notification NO.CIS/SWB/BOR/R&T-17/2022-808 dated 08-06-2022 all judicial and non-judicial stamp paper of the denomination of rupee five hundred and above shall be exclusively on e-stamp.

7. Cancellation of Purchase Order

In case the supplier fails to deliver the material within the specified delivery schedule as given in Purchase order (P.O.) and maximum upto 240 days after the expiry of the specified delivery schedule as per Purchase Order, the Purchase Order may be treated as cancelled at supplier's sole risk & cost. However, for the sake of clarity liquidated damages (Clause-27 of General Terms Conditions) and Default by Supplier (Clause-28 of General Terms Conditions) will be treated as given in the General Terms & Conditions of the tender documents.



8. Correct Postal Address:

Bidders are essentially required to provide correct and latest postal, e-mail & web addresses. Phone/cell/fax numbers at the time of purchase of tender documents for effective and timely communication, failing which in event of any non-delivery of information /communication the procuring agency will not be held responsible and bid will be considered as non-responsive.

9. "In case the local agent requires to offer bid from more than one principal / Manufacturers, it is mandatory to purchase separate tender document for each principal / Manufacturer, failing which the bid submitted with the original tender document will only be accepted and the bid with photocopy of tender document will be rejected".

10. "Original counter slip of token which is issued with original tender document to be attached on the TOP of envelope at the time of bid submission".

11. The Successful Contractor(s) / Consultancy(s) shall submit a copy of Professional Tax Certificate with their invoice / Bills failing which the payment will not be released.

12. Blacklisting Mechanism of Suppliers and Contractors and their Local Agent:

Black listing mechanism is attached separately in the tender documents which will become an integral part of Tender Documents and now be followed / enforced in true letter & spirit and supersede the Black listing terms as mentioned in the General Terms & Conditions.

13. Bid Bond & PBG (Performance Bank Guarantee) for Proprietary Tenders

In case of proprietary Tenders, the Bid Bond & Performance Bank Guarantee (PBG) are not required / Applicable.

14. Any Bidder who change / amend the BOQ or Price Schedule (description, Quantity, UOM etc.) will render the bid as conditional bid and will be liable for rejection.

15. Clause 14.1 of General Terms & Conditions is meant for vendorized items processed through negotiated tendering clauses.

16. For open competitive bidding if the most advantageous bidder is new local manufacturer, 10% trial order will be placed and remaining 90% order will be awarded to the next most advantageous bidder at their own quoted rates.

16(a) Bidders awarded a trial order (10% of the complete order) shall, upon successful delivery and satisfactory performance, be allowed to participate in future tenders of the same item; however, until completion of the trial order, they will be declared technically non-compliant by the user department as per the above-mentioned clause in the Special Terms & Conditions. During the currency of the trial order, they will not be issued further POs until the trial order is successfully completed.

17. SSGC will not pay invoices if they are turned in after 6 months of work completion / material delivered.

18. It is mandatory for the bidders to follow all the terms and conditions given in the tender documents without any addition / deletion / amendment and submit the bid accordingly. Therefore, in this context, the bidders are requested not to give their own terms and conditions as it tantamount towards the conditional bid. Otherwise their terms and conditions will not be considered and the Purchase Order / Contract will be awarded based on only as per SSGC tender terms and conditions.

19. The bidders/contractors are required to provide their only one Bank Account number (IBAN number) on the 'FORM-X' attached duly signed & stamped as one time information, which shall be firm (not changeable) for all the future payment transactions.

20. Payment:

The supplier after delivery of goods and its acceptance shall submit invoice to Finance Department of the Company, containing following information i.e.

- (a) Purchase order No. & date
- (b) Items
- (c) Quantity
- (d) Price
- (e) Invoice value
- (f) Point of delivery
- (g) Delivery challan indicating delivery date, etc.
- (h) Supplier(s) are required to submit signed and stamp acknowledgement slip, Sales Tax return, Annex "C" & Annex "I" (whichever applicable) in which Sales Tax (of relevant Sales Tax invoice) is paid.

Payment will be made within 30 days of completion of stated requirements.

21. **Joint Ventures:** In the event that the bidder is bidding as a Joint Venture, the Company will require the joint venture agreement duly executed by the parties to the Joint Venture to be submitted with the bid. The joint venture parties shall also furnish an undertaking to be jointly and severally liable for all liabilities arising out of obligation under the Purchase Order / Contract. The Joint Venture agreement of the parties must specify share of each partner and name of the lead partner along with their registration with the FBR, SST and BST as the case may be. Failure to specify these two narrations the joint venture agreement will not be entertained.



22. Bank Guarantee (Bid Bond Guarantee/Performance Bank Guarantee) will be made on Non-Judicial stamp paper at the prevailing rate as specified by the respective Provinces. Further the bidder/contractor submitting the Bid Bond guarantee/Performance Bond guarantee being prepared by the State Bank's schedule banks should ensure that there should be no deletion/insertion/alteration/modification of any terms in the Bid Bond/PBG guarantee format as given in the tender document or else bid will be liable for rejection.
23. In case the insurance policy submitted by the contractor is expired during the execution of job, it is the responsibility of the user department to coordinate with the contractor to get it renewed/updated till the period the job is completed/commissioned.
In case the job is not completed within the given time as per tender terms and the insurance policy submitted by the contractor expires, the contractor is liable to get this insurance policy renewed / updated immediately till the period of the job is completed / commissioned as per tender terms failing which the contractor will be responsible for any loss to SSGC.
24. Bidders can quote their rates on both i.e. Schedule of Requirement/Bid Form as well as Bill of Quantity (BoQ).
25. Company reserve the right to award the Purchase Order /LOI to the most advantageous bidder.
26. As per SRO 592(I)/2022 of PPRA Regulations, for Procurement Contracts/Purchase Orders worth of Rs. 50 million and above, bidders/contractors are required to submit the Beneficial Owner's Information for Public Procurement Contracts/Purchase Orders (Annexure-I).
27. **Fixed Bid Security – Alternative Bid**
A bidder cannot submit two bids/offers with a single fixed bid security/pay order. However, the alternative bids/offers with separate fixed bid security/pay order can be accepted, failing which the bids will be liable for rejection. In case the bidder quote different make/brands/model that will also be considered as an Alternative bid/offer and require to submit separate Bid bond for each make/brand/model.
28. Bidder will be blacklisted and henceforth cross debarred for participating in respective category of Public Procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration (which is an integral part of tender document), however, without indulging in corrupt and fraudulent practices, if in breach of obligation(s) under the Bid conditions:
- The bidder have withdrawn or modified their bid during the period of bid validity as specified in the tender terms.
 - Having been notified of the acceptance of bid by procuring agency during the period of bid validity (i) failure to sign the contract or accept purchase order (ii) fail or refuse to furnish the performance security or to comply with any other condition as mentioned in the tender document.
29. Whenever the "Rate Only" is mentioned (either on BOQ or anywhere in tender documents) the same shall only be applicable not exceeding 15% of the original procurement for the same items as given in the BOQ for package basis. In case the requirement is on item wise basis (not package basis) then not exceeding 15% of the original Procurement for the same items (on item wise basis) as given in the BOQ.
30. **Lots:** In case when the tender is floated on LOT basis, following clauses to be applied:
- The bidder(s) are essentially / mandatorily required to submit fixed bid bond as mentioned in the bid form/BOQ/Invitation to Bid. Separate fixed bid bond to be submitted against each individual LOT and its validity to be 150 days at the time of opening of technical proposal.
 - Evaluation for each LOT will be carried out separately. Each LOT will be awarded separately.
31. Subsequent to the issuance of Purchase Order/LOI, successful bidder has to submit 10% Performance Bank Guarantee of the Purchase Order/LOI value unless & until specified in the Tender Documents, Clause# 16.1.3 mentioned in General Terms & Conditions to be treated as null & void.
32. **Redressal of Grievances And Settlement of Disputes:**
- Any bidder feeling aggrieved by any act of the procuring agency after the submission of his bid may lodge a written complaint concerning his grievances within seven days of announcement of the technical evaluation report and five days after issuance of final evaluation report.
 - In case, the complaint is filed against the technical evaluation report, the GRC shall suspend the procurement proceedings.



- In case, the complaint is filed after the issuance of final evaluation report, the complainant cannot raise any objection on technical evaluation of the report. Provided that the complainant may raise the objection on any part of the final evaluation report in case where single stage single envelope bidding procedure is adopted.
33. The sub clauses 33.2, 33.4 & 33.5 of clause 33 of General Terms & Conditions to be treated as null & void.
 34. All the bidders are allowed to participate in the subject procurement without regard to nationality/origin, except bidders of some nationality/origin, prohibited in accordance with policy of the Federal Government. Following countries are ineligible to participate in the procurement process:
 - India
 - Israel
 35. In Open Competitive Bidding Procedure where the quoted price is less than Rs. 500,000/- the Bid Bond will be retained in lieu of PBG.
 36. In case the Bid Bond is not required, the bidder must submit the Form of Bid-Securing Declaration attached with the Tender Document else the Bid will be liable for rejection.
 37. All Tenders floated through EPADS are to be governed by S.R.O. 296(T)/2023 dated: March 8, 2023 "E-Pak-Procurement Regulations 2023". In case of any conflict between SSGC Tender Terms / Instructions to Bidders and the PPRA EPADS Rules, the S.R.O. 296(T)/2023 will prevail.
 38. **Samples:**
When sample submission is required. Suppliers/bidders must submit samples:
 - a) Along with the bid, if stated in the tender documents.
 - b) Within the time specified in the tender.
 - c) Upon request from the User Department for technical evaluation through official email/ letters.
- SAMPLE SUBMISSION LOCATION/ DEPARTMENT:**
All samples must be submitted to the Procurement Department - Tender Room, SSGC Head Office with Duly filled in form "Y" attached in the tender document. Samples submitted other than the Procurement Department - Tender Room, SSGC Head Office will not be considered/accepted.
- The supplier/bidder must:**
- Fill in all required details (e.g., Tender No., Bidder Name, and Sample Description).
 - Attach supporting documents (if required).
 - Submit the completed Form-Y along with the sample.
- In absence of any of the above-stated requirements the Samples will not be considered/accepted.



Sui Southern Gas Company Limited

Schedule of Requirement & Bid Form

SECTION - 3

RFD Number		SSGC/LP/EPADS2/PT/2181279		Open Bidding Date		21-AUG-26 17:55	
Document Number		2181279		Close Bidding Date		24-SEP-26 16:00	

S#	Item Code	Item Description	Unit	Quantity	Make / Brand	Unit Price inclusive of all discount (if any) & Exclusive of GST	Value PKR
1	2	3	4	5		6	7 = 5 x 6
1	SC171405	ASSISTANCE TO INSTALLATION CONTRACTOR FOR INSTALLATION OF AIR HANDLING UNIT AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Job	1			
2	SC171406	ASSEMBLING OF AIR HANDLING UNIT AT SITE COMPLETE IN ALL RESPECTS AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Job	1			
3	SC171407	TESTING & COMMISSIONING OF EQUIPMENT (AIR HANDLING UNIT) AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Job	1			
4	SC171408	LIFTING /SHIFTING OF AIR HANDLING UNIT FROM RT STORE TO BASEMENT AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Job	1			
5	SC171409	FACTORY INSPECTION & ACCEPTANCE TESTING OF AIR HANDLING UNIT (EMPLOYERS 3 PERSONNEL) (AS PER BOQ)	Job	1			
6	SC171411	TRAINING OF EMPLOYERS PERSONNEL AT SITE (AS PER BOQ)	Job	1			
7	CC091461	SUPPLY OF AIR HANDLING UNIT (AHU/02) ALONG WITH 5 SETS OF OPERATION & MAINTENANCE MANUALS (REFER SECTION 23 73 10 & DATA SHEET NO.1890-23 73 10) AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Nos	1			
8	CC091462	SPARE PARTS FOR AHU/02 (REFER DATA SHEET NO.1890-23 73 10) AT SSGC HEAD OFFICE, KARACHI. (AS PER BOQ)	Lot	1			

Total Fix Bid Bond Amount PKR: 225,000



NOTE:

1. The quoted unit price and corresponding total amount shall be inclusive of all duties and taxes and discount (if any) except General Sales Tax. (GST). Sales Tax will be applicable as per GST act and subsequent amendments of time to time. GST will be reimbursed to manufacturer and importers only subject to production of paid invoice.
2. Bidders are essentially required to quote on bid form. Rates quoted on other than bid form will not be entertained.
3. Any queries / complaints regarding subject tender enquiry shall be addressed to EM(P) / DGM(P) in writing.
4. **EVALUATION CRITERIA :** Order will be placed on the Lowest Technically / Commercially Compliant bidder (s), unless specified otherwise.
5. In case when bidder submit alternate bids, a separate Bid Bond for each bid is required. All the bidders are advised to furnish fixed bid security amount appearing in price schedule/BOQ otherwise bid will be liable for rejection.
The submission of fixed amount of bid security is also mandatory for all the bids valuing RS.500,000/- or less.
6. Any Bidder who change/amend the BOQ or Price Schedule (Description, Quantity, UOM etc.) will render the bid as conditional bid and will be liable for rejection.
7. Bid bond submission (2%) of the bid amount as mentioned in the clause 9 of General Terms & Conditions, to be treated as null & void, however, other contents of clause 9 will remain unchanged.
8. All offers shall remain valid up to 120 days from the date of opening of bids and bid bond shall remain valid for 150 days.
9. Special terms & conditions and warranty guaranty attached at annexure 01.

Signature : _____
 Person Name : _____
 Company's Name : _____
 Date : _____



STAMP

End of page, any entry beyond this line would be invalid

Delivery Schedule: Should not be more than 04 months.

Completion Period: Complete job completion time including testing and commissioning will be 01 month after installation of AHU by HVAC contractor issuance of LTP.

Note:

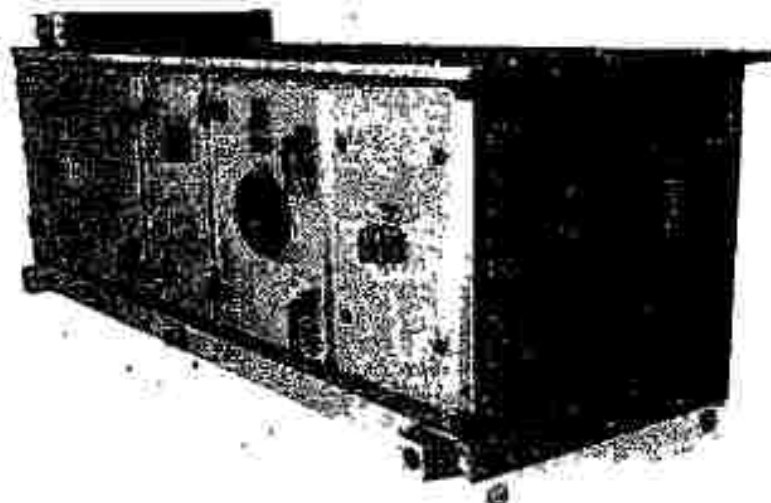
- Tender is on Complete Package Basis.
- Valid Pakistan Engineering Council Registration Certificate with relevant category of mechanical/HVAC engineering Goods (ME01).
- Under Single Stage Two Envelope Bidding Procedure.



SSGCL HEAD OFFICE BUILDING, KARACHI

TENDER FOR SUPPLY OF AIR HANDLING UNITS

Dated: August 06, 2026



Version	Date	Status	Document No.	By	Reason
00	22/04/2026	Tender	FND-1890-TD-H-XX-PKG-001	FA	Tender for Supply of Air Handling Units
01	06/08/2026	Tender	FND-1890-TD-H-XX-PKG-001	FA	Tender for Supply of Air Handling Units

CLIENT:

Sui Southern Gas Company Ltd.

ST-4/B, Hassan Square Flyover,
Block-14, Gulshan-e-Iqbal,
Karachi-75300

**CONSULTANT:**

Fahim, Nanji & deSouza (Pvt.) Ltd.

Consulting Engineers

4th Floor, ILACO House, State Life Building-5,
Abdullah Haroon Road, Saddar,
Karachi-74400

Phone (92-21) 3563-7878-82

Fax (92-21) 3521-1634

E-mail: info@fnd.com.pkWeb: www.fnd.com.pk

SSGCL HEAD OFFICE BUILDING, **KARACHI**

TENDER FOR SUPPLY

OF

AIR HANDLING UNITS

Dated: 06th August, 2026

- a) **TENDER ISSUE DATE:** 06TH AUGUST, 2026
- b) **TENDER SUBMISSION DATE:**
- c) **VENUE OF SUBMISSION:**

CLIENT

Sui Southern Gas Company Ltd.

ST-4/B, Hussain Square Flyover,
Block-14, Gota-hus-e-Jadid,
Karachi-75300.

CONSULTANT

Fahim, Nanji & deSouza (Pvt.) Ltd.

Consulting Engineers

4th Floor, ILACO House, State Life Building-5,

Abdullah Haroon Road, Saddar,

Karachi-744001.

Phone (92-21) 3521-7874-82

Fax (92-21) 3521-1634

E-mail: mech.dcm@fnd.com.pk

Web: www.fnd.com.pk



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PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 06TH AUGUST, 2026

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PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 08TH AUGUST, 2028

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**SSGCL HEAD OFFICE BUILDING,
KARACHI**

**TERMS & CONDITIONS OF SUPPLY OF AIR
HANDLING UNITS**



Fahim, Nanji & deSouza (Pvt.) Ltd.
Consulting Engineers



GENERAL SCOPE OF WORKS

PROJECT NO : 1890
PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 06TH AUGUST, 2026

GENERAL SCOPE OF WORKS

1. GENERAL

The supply of equipment shall be governed by these Conditions of Contract. The bidder shall quote prices for such items in the Bill of Quantities and in the manner defined in the Bill of Quantities.

2. SCOPE OF WORK

The scope of work shall be as follows:

- a) Supply of locally manufactured AHU preferably as per tender specifications and data sheets.
- b) Installation assistance to the HVAC installation contractor.
- c) Testing and Commissioning of the AHU.
- d) The AHU vendor/manufacturer shall be present at site during the SAT to provide necessary technical support, verify system performance, and ensure compliance with design and operational requirements.
- e) The cost of travelling, boarding & lodging of the FAT team comprising of 2 SSGC persons & 1 consultant representative shall be borne by the Contractor.
- e) Providing technical back-up to the SSGC authorised operating staff as and when required.
- f) Providing warranties/guaranties as specified.
- g) Supplying 5 copies of complete operation & maintenance manual in both hard (bound) and soft (electronic) formats.
- h) Providing training to the SSGC staff at project site.

3. SSGCL PERSONNEL TRAINING

a) On Site:

The Contractor shall provide training to the SSGC designated personnel on the proper operation/maintenance of the Equipment arrangements to be made by Contractor in accordance to the training curriculum.

c) Operational Training includes:

- Safety procedures
- Good practices in the operation of Chillers
- Good record keeping and data logging
- Consequence of neglect & bad practices
- Application of the daily check list



GENERAL SCOPE OF WORKS

PROJECT NO : 1890
PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 08TH AUGUST, 2026

d) Maintenance Training Includes:

- Routine examination and maintenance
- Fault diagnosis
- Removal, dismantling and replacement of parts and components.
- Basic electrical check, safety routines and component replacement
- Maintenance planning records and procedures
- Handling of emergencies in critical failures/ hazard situations is to be imparted and included in the documentation.

4. OPERATING & MAINTENANCE MANUALS

a) Bound Instructions: Five complete sets of operating, maintenance & service / spare parts manuals duly approved by the SSGC/Consultant, shall be supplied by the manufacturer, prior to handing over of the equipment to the SSGC. Each set shall be permanently bound and shall have a printed hard cover. Each manual shall be inscribed with suitable legend for proper identification and use of the manual. The matter shall be legibly typed and/or shall be clear Photostat copies of the original documents, catalogues, photographs of equipment. Flysheets shall be placed before instructions covering each subject. The instruction sheet shall be approximately 8.5" by 11", with large sheets of drawings folded in.

b) Softcopy of the operating & maintenance manual shall also be provided.

c) The Manuals shall include as minimum:

- Trouble shooting methods
- Lubrication instructions
- Spare parts list and description, with exploded isometric drawings where possible identifying all components and their associated spare parts numbers for all items.
- Schematic diagrams of electrical controls
- Routine/Preventive maintenance schedule
- Assembly sketches of manufacture parts
- As Built Drawings
- Commissioning results section including settings of all equipment
- Proprietary equipment manufacturers manual may be provided where they comply with the requirement of these technical provisions.

SPECIAL TERMS AND CONIDITIONS

PROJECT NO : 1850
PROJECT TITLE : SSQCL HEAD OFFICE BUILDING, KARACHI
DATED : 06TH AUGUST, 2026

SPECIAL TERMS & CONDITIONS

The conditions set forth herein under Special Terms and Conditions to the Contract and where these conditions conflict with provisions or requirement set forth elsewhere in the contract documents these conditions shall govern.

Reference Clause	Clause Description	Contract Stipulations
	Delivery Period	Delivery period of the AHU should not be more than 4 months
	Job completion period	Complete job completion time including Testing and Commissioning will be 1 month after installation of AHU by HVAC contractor / issuance of LTP
	Period of guarantee/warranty by equipment manufacturer	1 Years comprehensive Warranty/ guarantee from the date of Commissioning
	Maintenance Services	Comprehensive services for 1 Year after Commissioning
	Bid validity	120 days
	Performance Bond	10% (Ten Percent) of Contract value
	Liquidated Damages	0.1% of Contract Price for each day of delay, Max. 10% of Contract Price
	Number of person's for witness/visit to factory testing (FAT)	3 (three) persons
	Basis of Contract	Contract will awarded on a complete package basis

TECHNICAL CRITERIA FOR THE EVALUATION OF SUPPLY OF AIR HANDLING UNIT

S.NO	DESCRIPTION	STANDARD POINTS	MAX. POINTS	OBTAINED POINTS
1.0	MANDATORY	MANDATORY	MANDATORY	
1	Tax Payers Registration Certificate (FBR)			
2	No Active Litigation Affidavit confirming no pending litigation/arbitration that may affect contract performance.			
2.0	CERTIFICATIONS			
I	Valid Pakistan Engineering Council Registration Certificate with relevant category of mechanical/HVAC engineering goods (ME-01) FORM - IIA	5	5	
II	Quality Assurance & Testing ISO 9001 certification (or equivalent) for manufacturing/assembly. FORM - IIB	5	5	
3.0	FINANCIAL SOUNDNESS			FORM - IIIA
I	Annual Turnover (total sales during last financial year (in rupees))			
a	> 400 million	10	10	
b	> 300 million	8		
c	> 200 million	5		
II	Cash In Hand / OD Facility (To be verified through bank statement)			FORM - IIIB
a	> 6 million	10	10	
b	> 4 million	8		
c	> 2 million	5		
4.0	EXPERIENCE RECORD			FORM - IVA
I	NOS. OF YEAR ESTABLISHING COMPANY IN PAKISTAN			
a	> 10 Years	10	10	
b	5 to <10 Years	7		
c	< 5 Years	5		
II	Number of similar AHU projects completed in last 5 years			FORM - IVB
a	≥ 10	10	10	
b	6 to 9	7		
c	3 to 5	5		
5.0	In-house testing facilities (coil pressure test, fan performance, air leak test). FORM - V	5	5	
6.0	LOCAL FABRICATION & MANUFACTURING CAPABILITY			FORM - VI A
I	Physical manufacturing/assembly facility in Pakistan (factory/workshop)			
a	Own facility	10	10	
b	Third-party local assembly agreement	5		
c	No local presence.	0		
II	Local value addition percentage (material + labor)			FORM - VI B
a	≥ 40%	10	10	
b	30-39%	7		
c	20-29%	5		
7.0	Provision of Plug Fan (Without Belt and Pulley) in AHU Assembly FORM - VII	10	10	
8.0	Free of Cost quarterly/ half yearly visits for performance analyzing/ adjustments of AHUs (for at least 03 years after commissioning) FORM - VIII	10	5	
9.0	PERSONAL CAPABILITIES			FORM - IX
I	Strong professional fabrication and maintenance team comprising of PEC enrolled experienced engineers and skilled and experienced technicians.	10	10	
TOTAL POINTS			100	

Notes:

1. Minimum 70 marks are required to qualify for financial evaluation.
2. Documentary evidence to be attached along with Forms otherwise marks will not be awarded.
3. Technical team details with resume / CV of concerned executives / staff.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM I - COMPANY PROFILE*

Company Name: _____

Head Office Address: _____

Telephone No.: _____

Fax No. : _____

Office Address: _____

Telephone No. : _____

Fax No. : _____

Year Incorporated: _____

Attach copy of certificate of registration and ownership documents.

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM II A: CERTIFICATIONS*

Page ____ of Form II A
Max Points - 5

Valid Pakistan Engineering Council Registration Certificate with relevant category of mechanical/HVAC engineering goods (ME-01)

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.

FORM II B: CERTIFICATIONS*

Page ____ of Form II B
Max Points - 5

Quality Assurance & Testing ISO 9001 certification (or equivalent) for manufacturing/assembly.

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM III A: FINANCIAL SOUNDESS*

Page ___ of Form III A
Max Points - 10

Annual turnover (Total sales during last financial year (In Rupees))

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.

FORM III B: FINANCIAL SOUNDESS*

Page ___ of Form III B
Max Points - 10

Cash in hand / OD Facility (To be verified through bank statement)

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM IV A: EXPERIENCE RECORD*

Page ____ of Form IV A
Max Points - 10

Number of years establishing company in Pakistan.

All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM IV B: EXPERIENCE RECORD*

Page _____ of Form IV B
Max Points - 10

Number of similar AHU Projects completed in last 5 years

Name of Work: _____
Scope of Work: _____
Value of Contract: _____
Name of Client: _____
Address of Client: _____
Telephone of Client: _____
Date of Award of Work: _____
Start Date: _____
Scheduled Completion Date: _____
Actual Completion Date: _____

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.

* Separate form should be submitted against each client



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM V: IN HOUSE TESTING FACILITIES

Page _____ of Form V
Max Points - 5

In-house testing facilities (coil pressure test, fan performance, air leak test)

• All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM VI-A: LOCAL FABRICATION & MANUFACTURING CAPABILITY*

Page _____ of Form VI-A
Max Points - 10

Physical manufacturing/assembly facility in Pakistan (factory/workshop)

- a. Own facility
- b. Third-party local assembly agreement
- c. No local presence

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM VI-B: Local value addition percentage (material + labor)*

Page _____ of Form VI-B
Max Points - 10

Local value addition percentage (material + labor)

- a. $\geq 40\%$
- b. 30-39%
- c. 20-29%

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



**Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office**

FORM VII: Provision of Plug Fan (Without Belt and Pulleys) in AHU Assembly*

Page _____ of Form VII
Max Points - 10

Provision of Plug Fan (Without Belt and Pulleys) in AHU Assembly.

- a. Yes
- b. No

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.

**Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office**

FORM VIII: Free of Cost Visits*

Page _____ of Form VIII
Max Points - 5

Free of Cost quarterly/ half yearly visits for performance analyzing/ adjustments of AHUs (for at least 03 years after commissioning)

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Eligibility/ Evaluation Criteria supporting documents for supply of AHU at
SSGCL Head Office

FORM IX: PERSONAL CAPABILITIES*

Page _____ of Form IX
Max Points - 10

Strong professional fabrication and maintenance team comprising of PEC enrolled experienced engineers and skilled and experienced technicians.

* All the information provided shall be supported with documentary evidence; otherwise no marks will be awarded.



Division

2

**SSGCL HEAD OFFICE BUILDING,
KARACHI**

**TECHNICAL SPECIFICATIONS OF AIR
HANDLING UNITS**


END

Fahim, Nanji & deSouza (Pvt.) Ltd.
Consulting Engineers



PROJECT NO : 1880
PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 06TH AUGUST, 2026

SPECIFICATIONS

BASIC MECHANICAL REQUIREMENTS

PART-1: GENERAL

1.1 Related Documents:

General Conditions of Contract, including Conditions of Particular Application, Specification, BOQ and Drawings, apply to this Section.

1.2 Instructions to Tenderers:

- a) The Specifications & Drawings make reference to certain Standard Specifications and also to certain manufacturers and equipment model numbers. The object of these references is to ensure that the equipment and materials offered by the Tenderers are in accordance with the required standard of quality, workmanship and capacities, etc.
- b) In case there is any deviation between any item or material offered by the Tenderer from the tender specifications and drawings, the Tenderer shall clearly draw attention to all such deviations and no such equipment or material shall be supplied by the Contractor without prior written approval of the Engineer. Failure to point out the deviations shall require the Contractor/Manufacturer to fully conform to the specifications.
- c) These Specifications, BOQ and Drawings are to be considered as supplementing each other and as such are intended to serve jointly as the basis upon which the Tenderer shall establish a Contract Price, and upon which he shall base the performance of the required work.
- d) It is the intent of these Specifications and Drawings to call for complete equipment ready for operation.
- e) These Drawings and Specifications are presented to the Tenderer with the understanding that he is an expert and is competent in the preparation of Contact Bid Prices on the basis of information such as is contained in these documents, which do not include assurance as to their complete accuracy and validity, in all details, and which may be required for proper and complete operation of the equipment. All equipment quoted shall include all necessary components required for a proper and complete operation of the equipment supplied.

1.3 Interpretation of the Drawings & Specifications:

- a) Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any item, in the drawings or specifications or both, carries with it the instructions to furnish the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.
- b) It shall be understood that the specifications and drawings are complimentary and are to be taken together for a complete interpretation of the work. Exceptions are that notes on the drawings, which refer to an individual element of work, take precedence over the specifications where they conflict with the same.
- c) No exclusions from, or limitation, in the language used in the Drawings or Specifications shall be interpreted as meaning that the appurtenances or accessories necessary to complete any required system or item of equipment are omitted.
- d) No interpretation shall be made from the limitations of symbols and diagrams that any elements necessary for complete work are excluded.

1.4 Certified Dimensional Drawings by the Contractor

- a) The Contractor shall submit hard-copies of certified dimensional drawings of the Equipment to be supplied in triplicate plus soft-copy on AutoCAD, for use in Installation drawings to be prepared by others.



PROJECT NO : 1890
 PROJECT TITLE : SSOCL HEAD OFFICE BUILDING, KARACHI
 DATED : 08TH AUGUST, 2026

- b) Any expenses resulting from an error mistake or omission in or delay in delivery of the certified drawings shall be borne by the Contractor.

1.5 Verification of Actual Dimensions on Site:

- a) Prior to placing the order for the equipment the Contractor shall verify that the equipment to be supplied shall fit into the space allocated on site and shall obtain a written confirmation of the same from the Consultant.

1.6 Technical Submittal for Approval Prior to Manufacturing:

- a) General: All equipment and material to be supplied under this contract shall be subject to approval obtained on a Technical Submittal by the Contractor prior to placing the order for manufacturing of the same.
- b) Approval of Equipment: For approval of all equipment, the Contractor shall be required to submit, within two weeks of the signing of the Contract, detailed submittals of the equipment proposed to be supplied and providing supporting literature/brochures etc., to enable the "CONSULTANT" to check conformance to the specifications. Performance curves and charts shall be submitted with the operating points clearly marked. All equipment submittals shall be accompanied with a certificate stating that the equipment proposed to be supplied fits into the space allocated for it with sufficient clearance around it to allow for installation of related ducting, piping, etc., and provides for maintenance clearances as required by the manufacturer of the equipment, and that all special requirements of the equipment have been accounted for. Any additional information, test reports etc., required by the "Consultant" shall be furnished by the Contractor. Manufacturing of the equipment shall only be commenced after receipt of written approval from the "Consultant".

END OF SECTION 23 01 01

BASIC MECHANICAL MATERIALS AND METHODS

PART-1: GENERAL

1.1 Related Documents:

Drawings and general provisions of Contract, including General and Special Conditions apply to this Section.

1.2 Summary:

This Section includes the following basic mechanical materials and methods to complement other Division 15 Sections.

- a) Non-shrink grout for equipment installations.
- b) Field-fabricated metal and wood equipment supports.
- c) Installation requirements common to equipment specification sections.
- d) Mechanical demolition
- e) Cutting and patching
- f) Touch-up painting and finishing

1.3 Definitions:

- a) Finished spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, spaces above ceiling, crawl spaces and tunnels.
- b) Exposed Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- c) Exposed Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- d) Concealed Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.

1.4 Quality Assurance:

1.4.1 Standard & Regulatory Requirements:

- a) Qualify welding processes and operators for structural steel according to AWS D1.1 "Structural Welding Code - Steel."
- b) ASME A13.1 for lettering size, length of color field, colors and viewing angles of identification devices.
- c) Equipment Selection: Equipment of greater or larger power, dimensions, capacities and ratings may be furnished, provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors bases and equipment spaces are increased. No additional costs will be approved for these increases, if larger equipment is approved. If minimum energy ratings or efficiencies of the equipment are specified, the equipment must meet the design requirements and commissioning requirements.
- d) For products manufactured for 50 Hz use, that do not carry or qualify for UL labels, a manufacturer's certification is required that the product meets the minimum requirements of Internationally Recognized Testing Laboratories (IRTL) meeting the requirements of International Electrotechnical Commission (IEC), which are deemed equal to UL and other U.S. testing laboratories.

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1.5 Sequencing and Scheduling:

- a) Coordinate mechanical equipment installation with other building components.
- b) Arrange for chases, slots and openings in building structure during progress of construction, to allow for mechanical installations.
- c) Coordinate the installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components, as they are constructed.
- d) Sequence, coordinate and integrate installations of mechanical materials and equipment for efficient flow of the work. Coordinate installation of large equipment requiring positioning prior to closing in the building.
- e) Coordinate connection of mechanical systems with utilities and services. Comply with requirements of governing regulations, service companies, and consultants.
- f) Coordinate requirements for access panels and doors where mechanical items requiring access are concealed behind finished surfaces.
- g) Coordinate installation of identifying devices after completion of covering and painting, where devices are applied to surfaces. Install identifying devices prior to installation of acoustical ceilings and similar concealment.

1.6 Shop Drawings:

- a) Shop drawing detailing fabrication and installation for metal and wood supports and anchorage for mechanical materials and equipment.
- b) Coordination drawings for access panel and door locations.
- c) Prepare coordination drawings to a 1:50 scale or larger. Detail major elements, components and systems of mechanical equipment and materials in relationship with other systems, installations and building components. Show space requirements for installation and access. Show where sequence and coordination of installations are important to the efficient flow of the work. Include the following:
 - i) Proposed locations of piping, ductwork, equipment and materials. Include the following:
 - Planned piping layout, including valve and specialty locations and valve stem movement.
 - Planned duct systems layout, including elbows radii and duct accessories.
 - Clearances for installing and maintaining insulation.
 - Clearances for servicing and maintaining equipment, including space for equipment disassembly required for periodic maintenance.
 - Equipment services connections and support details.
 - Wall penetrations.
 - Fire-rated wall and floor penetrations.
 - Sizes and location of required concrete pads and bases.
 - ii) Scheduling, sequencing, movement and positioning of large equipment into the building during construction.
 - iii) Floor plans, elevations and details to indicate penetrations in floors, walls and ceilings and their relationship to other penetrations and installations.
 - iv) Reflected ceiling plans to coordinate and integrate installations, air outlets, and inlets, light fixtures, communications systems components, sprinklers and other ceiling-mounted items.

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1.7 Warranty:

Manufacturer shall guarantee the equipment against defects in materials and/or workmanship for a period stated elsewhere in this document.

PART-2: EXECUTION

2.1 Foundations:

Equipment shall generally be installed on concrete foundations constructed by others. This contractor shall supply dimensional drawings of the foundation, suitable to accommodate the equipment, in accordance with the manufacturer's recommendations.

2.2 Direction Of Metal Supports And Anchorage:

- Cut, fit and place miscellaneous metal supports accurately in location, alignment and elevation to support and anchor mechanical materials and equipment.
- Fleld Welding: Comply with AWS D1.1 "Structural Welding Code-Steel".

2.3 Demolition:

- Disconnect, demolish and remove work specified under Division 15 and as indicated.
- Where pipe, ductwork, insulation or equipment to remain is damaged or disturbed, remove damaged portions and install new products of equal capacity and quality.
- Accessible Work: Remove indicated exposed pipe and ductwork in its entirety.
- Removal: Remove all demolished materials and equipment from the project site.
- Temporary Disconnection: Remove, store, clean, reinstall, reconnect and make operational equipment indicated for temporary or permanent relocation.

2.4 Cutting And Patching:

- Cut, channel, chase and drill floors, walls, partitions, ceilings and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of the trades involved. Obtain prior approval of Consultant before performing work.
- Repair cut surfaces to match adjacent surfaces.

2.5 Grouting:

- Install non-metallic, nonshrink, grout for mechanical equipment base bearing surfaces, pump and other equipment base plates and anchors. Mix grout according to manufacturer's printed instructions.
- Clean surfaces that will come into contact with grout.
- Provide forms for placement of grout, as required.
- Avoid air entrapment when placing grout.
- Place grout, completely filling equipment bases.
- Place grout on concrete bases to provide a smooth bearing surface for equipment.
- Place grout around anchors.
- Cure placed grout according to manufacturer's printed instructions.

2.6 Cleanings:

Remove labels after work is complete.

Remove all splashed paint, cement spatter, protective paper, etc after work is complete, & deliver chiller in clean condition.



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2.7 Protection Of Finished Work

Protect all equipment & work from deterioration from any condition, till handing over.

2.8 Installation Contractor's Responsibilities:

- a) Install equipment to provide the maximum possible headroom, where mounting heights are not indicated.
- b) Install equipment according to approved submittal data. Portions of the work are shown only in diagrammatic form. Refer conflicts to the Consultant.
- c) Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, except where otherwise indicated.
- d) Install mechanical equipment to facilitate servicing, maintenance and repair or replacement of equipment components. Connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location.
- e) Install equipment giving right-of-way to piping systems installed at a required slope.

2.9 Commissioning & Testing:

Test and commission equipment and system in accordance with relevant standards, manufacturer's recommendations and as directed by the Consultant.

END OF SECTION 23 01 02

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EQUIPMENT INSTALLATION

The Contractor shall install equipment as & where shown on the drawings and shall perform the following work:

1. Equipment Foundation Bases:

Unless otherwise indicated on drawings, equipment shall generally be installed on a 100mm to 150mm high concrete base. Base shall be constructed of 1:2:4 (210 kg/cm², 28 day compressive strength) approved concrete with nominal reinforcement. Base shall be finished with 5mm cement plaster, or approved tiles as shown on drawings. Edges shall be provided with 25x25x3mm galvanized angle iron frame work. Base dimension shall not be less than 100mm larger in both directions than supported equipment. Manufacturer's supported recommendation shall be followed, using anchor bolts at tie-in locations. Drawings shall be submitted to the Consultant for approval.

2. Lifting & Shifting Equipment onto Foundations:

The contractor shall be solely responsible for safe lifting of the equipments from place of storage on site to location of final installation and finally on the foundations.

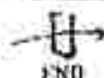
Prior to lifting the equipments the following procedure shall be adopted:

- Submit comprehensive insurance policy for the full value of the equipment to the Engineer/Employer from approved Insurance company.
- Submit complete information of specialist firm of lifters/riggers to the Engineer & obtain approval.
- Submit complete procedure & equipment to be used for lifting the equipment in place. Identify on plans location of tripods, hoist, etc. that will transfer weight to the equipment, to the structure & obtain approval.
- All the above to be completed with one month before the date of lifting of equipment.

3. Equipment Installation Responsibility:

- a) The Contractor shall ensure that the equipment is installed totally in accordance with the manufacturer's instructions (equipment installation manual must be obtained & read), and as directed by the Consultant. Correct alignment & levelling must be ensured.
- b) Field assemble equipment (if required) in accordance with instructions in the manufacturer's installation bulletin.
- c) Install the equipment on the foundation. Neoprene isolation pads or spring vibration isolators as specified for the equipment shall be placed under the equipment.
- d) Insure that structure, piping or other equipment adjacent to this equipment do not restrict operation & maintenance requirements of the equipment.
- e) Install all piping, cable, and other connections with all fittings, to the equipment. All material and labor required for a complete installation shall be supplied by the Contractor.
- f) Connect equipment control panel to all operating external safety and auxiliary control devices.
- g) Provide and install gauge cocks and thermometer wells for temperature and pressure readings at the inlet and outlet of all fluid flows.
- h) Provide and install a flow switches on water circuits wherever necessary, and interlock it with the starting control circuit of the unit.
- i) Install any control components provided by the manufacturer for installation external to the machine.

END OF SECTION 23 05 10



Fahim, Nanji & deSouza (Pvt.) Ltd.
 Consulting Engineers

Equipment Installation
 Section 23 05 10 - 1



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ELECTRIC MOTORS

PART-1: GENERAL

1.1 Section Scope:

- A. These specifications apply to all motors installed on all equipment on the project and are over-ruled by relevant specifications for motors given in other Sections & EQUIPMENT DATA SHEET.
- B. This Section includes requirements for single and three phase motors that are used with equipment specified in other Sections.
- C. Commissioning & Testing.

1.2 Submittals:

- A. Tendering Stage Submittals
 - 1. Brands of motors to be indicated & country of origin.
- B. Construction Stage Submittals
 - 1. Motor catalogue.
 - 2. Conformance statement to these specifications.
- C. Close-Out Submittals
 - 1. Commissioning Reports, as per manufacturer's standard, duly signed by the commissioning engineer.

1.3 Reference Standards:

- A. IEC Electric Motor Standards
- B. ANSI/IEEE 112 Test Procedure for Polyphase Induction Motors and Generators
- C. ANSI/NEMA MG-1 Motors and Generators

1.4 Reference Specifications:

- A. The following specifications shall be construed to be part of this Section.
 - 1. 23 01 01 – Basic Mechanical Requirement

1.5 Quality Assurance:

- A. Standard & Regulatory Requirements
 - 1. Equipment manufacturer shall be a company specializing in manufacture, assembly, and field performance of motors with a minimum of ten (10) years experience.
- B. Factory Test
 - 1. Manufacturer's standard factory test shall be carried out as per standards specified at clause 1.3.

1.6 Delivery, Storage, and Handling:

- A. Motors shall be stored and handled in accordance with the manufacturer's recommendations.
- B. Protect motors from entry of foreign material, dust, water & falling objects. Motor shall be kept encased in protective polythene until commissioning stage.

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1.7 Warranty:

- A. Manufacturer shall guarantee the motor against defects in materials and/or workmanship for a period as stated in Section-300, Conditions of Particular Application/Contract Data.

1.8 Electrical Coordination:

- A. Consultant drawings and/or specifications show horsepower rating of all motors. Should any discrepancy in size, horsepower rating, electrical characteristics or means of control be found for any motor or other electrical equipment after contracts are awarded, Contractor is to immediately notify the Consultant of such discrepancy.
- B. Costs involved in any minor changes required due to re-sizing of motor will be the responsibility of this contractor.
- C. All starters, overload relays, heater coils, disconnect switches and fuses, relays, wire, conduit, pushbuttons, pilot lights, and other devices required for the control of motors or electrical equipment shall be furnished and installed by this Contractor, except as specifically noted elsewhere in Specifications/BOQ.
- D. This Contractor will provide all power wiring and control wiring, unless otherwise specified in the BOQ.
- E. Furnish project specific wiring diagrams to Electrical Contractor for all equipment and devices furnished by this Contractor and indicated to be wired by the Electrical Contractor.

PART-2: PRODUCTS

2.1 General:

- A. Motors to conform to all applicable requirements of standards indicated in Clause 1.3 and shall be listed by U.L. for the service specified, where so indicated in other Sections.
- B. Select motors for conditions in which they will be required to perform; i.e., general purpose, splash proof, explosion proof, standard duty, high torque or any other special type as required by the equipment or motor manufacturer's recommendations or indicate in EQUIPMENT DATA SHEET.
- C. All motors shall be to IP55, and be rated at least at 125% of rated shaft power.
- D. The motors shall be suitable and able to give required output under site conditions i.e. maximum ambient temperature of 120°F (50°C) and altitude indicate in EQUIPMENT DATA SHEET.
- E. The motors shall be tropicalised, with insulation class as indicated in EQUIPMENT DATA SHEET.
- F. Motors rated 25HP and above shall be fitted with thermistors in the three phase windings, along with a suitable relay in the MCC to trip the starter if the motor overheats.
- G. Motors for Cooling Towers shall be purpose built for cooling-tower application, & shall be totally enclosed with air-overcooling.

2.2 Motor Efficiency:

- A. The energy efficiency classes of motor shall be in accordance with IEC 60034-30 as follows:
- 0.75 kW to 375 kW - Efficiency Class IE3.
 - 0.75 kW to 375 kW - at least Efficiency Class IE2 in combination with variable speed control.



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2.3 Three Phase, Single Speed Motors:

- A. All motors shall be NEMA rated for 400 volt, three phase, 50 Hertz motors for all motors 1/2 HP and larger unless specifically indicated and shall be suitable for operation at $400V \pm 10\%$.
- B. Use NEMA continuous duty, normal starting torque, with Class F. Use totally enclosed fan-cooled, motors unless otherwise specified in EQUIPMENT DATA SHEET.
- C. Use grease lubricated anti-friction ball bearings with housings equipped with plugged/capped provision for relubrication, rated for minimum AF&MA 9, L-10 life of 50,000 hours. Calculate bearing load with NEMA minimum V-belt pulley with belt center line at the end of NEMA standard shaft extension. Stamp bearing sizes on nameplate.
- D. For motors located in contaminated air stream, furnish epoxy sealed or coated motor windings & protect rotor & stator surfaces with epoxy enamel.
- E. All motors shall have a 1.15 service factor.

2.4 Single Phase, Single Speed Motors:

- A. Use NEMA rated 230 volt, single phase, 50 Hertz motors for all motors 1/4" HP and smaller.
- B. Use permanent split capacitor or capacitor start, induction run motors equipped with permanently lubricated and sealed ball or sleeve bearings and Class-D insulation. Service factor to be not less than 1.35.
- C. Fractional horsepower motors shall be provided with inherent over temperature protection.

2.5 Two-Speed Motors:

- A. Unless otherwise indicated, three phase two speed motors to be two winding, variable torque and single phase motors to be capacitor start capacitor run type having two capacitors in parallel with run capacitor remaining in circuit at operating speeds.

2.6 Motors Used on Variable Frequency Drives:

- A. In addition to the requirements specified above, the motor must be suitable for use with Variable Frequency Drive as specified in EQUIPMENT DATA SHEET. Including but not limited to motor cooling. Motor shall comply with NEMA MG1 Part 31 to provide windings capable to withstand up to 1600 peak Volts with a rise time of 0.1 μ s. Provide bearing protection grounding rings to bleed current from the motor shaft to the motor casing. Manufacturers: Aegis SGR, Inpro/Seal CDR, or equal Spares.

2.7 Spares:

- A. No motor spares are to be provided unless specified elsewhere.

PART-3: EXECUTION

3.1 Installation:

- A. Install motors in accordance with manufacturer recommendations.
- B. Install required power supply & earth wiring to the motors as per manufacturer's instruction.
- C. Connect motor starter to all operating external safety and auxiliary control devices.
- D. Mount motors on a rigid base designed to accept a motor, Using shims if required under each mounting foot to get a secure & level installation.
- E. When motor is flexible coupled to the driven device, mount coupling to the shafts in accordance with the coupling manufacturer's recommendations. Using a dial indicator, check angular misalignment of the two shafts; adjust motor position as necessary so



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that the angular misalignment of the shafts does not exceed 0.002 inches per inch diameter of the coupling hub. Again using the dial indicator, check the shaft for run-out to assure concentricity of the shafts; adjust as necessary so that run-out does not exceed 0.002 inch.

- F. When motor is connected to the driven device by means of a belt drive, mount sheaves on the appropriate shafts in accordance with the manufacturer's instructions. Use a straight edge to check alignment of the sheaves; reposition sheaves as necessary so that the straight edge contacts both sheave faces squarely. After sheaves are aligned, loosen the adjustable motor base so that the belt(s) can be added and tighten the base so that the belt tension is in accordance with the drive manufacturer's recommendations. Frequently recheck belt tension and adjust if necessary during the first day of operation and again after 80 hours of operation (Recommendation of NEBB).
- G. Verify the proper rotation of each three-phase motor as it is being wired or before the motor is energized for any reason.
- H. Lubricate all motors requiring lubrication. Record lubrication material used and the frequency of use. Include this information in the maintenance manuals.

3.2 Commissioning & Testing:

- A. The Commissioning Engineer shall subject the motor(s) to tests recommended by the manufacturer and these test reports shall be submitted to the Consultants by the Contractor in suitable test forms.

END OF SECTION 23 05 13

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VIBRATION ISOLATION AND CONTROL

PART-1: GENERAL

1.1 Performance Requirements:

The Contractor shall install vibration isolation and control products as specified herein and ensure that unacceptable vibration is not transferred to the building structure.

1.2 Submittals:

1.2.1 Tendering Stage Submittal

The tenderer shall indicate the vibration isolation device he intends to use and shall provide their source.

1.2.2 Construction Stage Submittal

- a) The contractor shall provide complete details of all vibration control devices to be used, and shall obtain Consultants approval.

1.3 Quality Assurance:

During Installation & during operation checking shall be carried out to ensure that vibration isolation products are performing as desired.

1.4 Warranty:

Manufacturer shall guarantee the equipment and components against defects in materials and/or workmanship for a period of one year from date of initial operation or 18 months from date of shipment, whichever occurs first, unless otherwise stated elsewhere in this document.

PART-2: PRODUCTS

2.1 Equipment:

2.1.1 Flexible Connectors for Pipelines

Flexible connectors shall be constructed of rubber, tetrafluoroethylene resin, or corrosion resisting steel, bronze, monel or galvanised steel. The material used and the configuration shall be suitable for pressure, vacuum, temperature and circulation medium. The flexible sections may have threaded, welding, soldering, flanged or socket ends and shall be suitable for service intended. The flexible section may be reinforced with metal retaining rings, with built in reinforcement and restriction bolts or with wire braid cover suitable for the service intended. Flanged assemblies shall be equipped with limit bolts to restrict maximum travel within limits standard with the manufacturer. Unless otherwise shown on the drawings, the length of the flexible connector shall be as recommended by the manufacturer for the service intended. Internal sleeves or liners shall be provided when recommended by the manufacturer suitable for the circulating medium. Covers to protect the bellows will be provided where necessary or directed. Flexible connectors shall be designed for a minimum of 125Psi (8.5 bars) service, and 250°F (120°C), or higher as required.

Flexible pipe connectors shall be installed on piping connected to equipment where indicated on the drawings. Installation shall be in accordance with manufacturer's recommendations.

2.1.2 Flexible Duct Connectors for Air-Moving Equipment

All air ducts attached to a fan, air handling unit or other mechanical equipment shall be provided with an air-tight flexible joint to isolate the vibration & noise.

This shall consist of an air-tight flexible fabric mechanically intertwined into sheet metal seams at its two edges to provide a 3 inch fabric and 3 inch metal

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connector on both sides of the fabric. Fabric shall be a heavy glass fibre fabric coated with neoprene.

2.1.3 Vibration Isolators

- a) Rubber Pads or Mounts: Rubber Isolators shall be either pad type or molded mount type. Material of molded isolators shall be in the range of 30-70 durometer. Isolators shall be designed for up to 0.5 in. deflection, but used where 0.3 in. or less deflection is required. Solid rubber and composite fabric and rubber pads shall be used as noise barriers under columns and for pipe supports where shown on drawing or where needed. Metal loading plates shall be used for even distribution of load on the pad surface.
- b) Pre-Compressed glass fibre isolation pads: Glass fiber pads shall be used for the isolation of concrete foundations and floating floor construction or for application where shown. Pre-compressed glass fiber isolation pads shall be of inorganic inert material and shall be available in thickness of 1 to 4 in. and in capacities of up to 500 psi. The manufacturing process shall assure long life and a constant natural frequency of 7 to 15 Hz over the entire load range. Pads shall be covered with an elasto-meric coating to increase damping and to protect the glass fiber.
- c) Spring Isolators:
 All spring isolators shall have a rubber acoustical barrier to reduce transmission of high-frequency vibration and noise that can migrate down the steel spring coil. They should be corrosion-protected if installed outdoors or in a corrosive environment.
 - Open spring isolators shall consist of a top and bottom load plate with an adjustment bolt for levelling. Springs shall be designed with a horizontal stiffness at least 100% of the vertical stiffness to assure stability, 50% travel beyond rated load and safe solid stresses.
 - Restrained spring isolators shall have hold-down bolts to limit vertical movement. Spring criteria shall be the same as for open spring isolators, and restraints shall have adequate clearance so that they are activated only when a temporary restraint is needed.
 - All BOLLERS, chillers and cooling towers shall be provided with Restrained Spring Isolators.
- d) Air Springs:
 For applications where the resulting deflection with spring type isolators is more than 6 inch and/or where natural frequency of equipment is 1.33 Hz or below, air springs shall be used to replace high deflection springs with the approval of the Consultant.
- e) Isolation Hangers:
 Isolation Hangers shall be used for suspended pipe and equipment and shall have rubber, springs, or a combination of spring and rubber elements. Criteria should be the same as for open spring isolators. Swivel or traveller arrangements may be necessary for connections to piping systems subject to large thermal movements.

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2.1.4 Vibration Isolated Bases

a) Concrete Base/Inertia Base:

Concrete bases shall consist of a steel pouring form with welded-in reinforcing bars, provision for equipment hold-down, and isolator brackets. It shall have a depth equal to one-tenth the longest span between isolators, with a minimum of 6 in. Base depth shall not exceed 12 in. unless specified.

b) Curb Mounted Base:

Curb isolation systems shall have spring isolation with a watertight and airtight curb assembly. The roof curbs must accommodate the small diameter of the springs within the rails, with static deflection in the 1 to 3 in. range.

c) Structural Base:

Structural bases shall be used where equipment cannot be supported at individual locations and/or where some means is necessary to maintain alignment of component parts in equipment. These bases can be used with spring or rubber isolators and should have enough rigidity to resist all starting and operating forces without supplemental hold-down devices. Bases are made in rectangular configurations using structural members with a depth equal to one-tenth the longest span between isolators, with a minimum depth of 4 in. maximum depth is limited 12 in. unless specified.

d) Structural Rails:

Structural rails shall be used to support equipment that does not require a unitary base or where the isolators are outside the equipment and the rails act as cradle. Structural rails can be used with spring or rubber isolators and should be rigid enough to support the equipment without fixing. Use structural members with a depth one-tenth of the longest span between isolators with a minimum depth of 4 in. maximum depth is limited to 12 in. unless otherwise specified.

2.1.5 Floating Floors

A. General

- The extent of the sound isolation floor is shown on the drawings.
- Concrete, reinforcement and water-proofing shall conform to specifications given for civil works.
- The floating floor shall be completely isolated from the building structure by resilient isolation mounting supporting the floating floor, and by resilient perimeter isolation material at all adjoining curbs. All penetrations e.g. piping, ductwork, drains shall be isolated from the floating floor so that no rigid contact exists between floating floor and structure.
- All sound isolation materials shall be provided by a single manufacturer to assure single responsibility for proper performance.
- Installation of materials is to be done by workmen familiar with this type of work.

B. Materials

- Pre-compressed glass fibre isolation materials shall consist of 2" high isolation mounts bonded to a 1½" thick low density fibreglass noise absorption blanket. Mount spacing and location shall be as per manufacturer's recommendation and drawings.
- Perimeter isolating boards shall be ½" thick, closed cell neoprene/expanded polyethylene.

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- c) Perimeter sealant shall be non-hardening, non-drying, and non-bleeding rubber based sealant.
- d) Plywood pouring forms shall be minimum 1/2" thick exterior grade attached using metal junction plates.
- e) Polyethylene sheeting for bond breaker and temporary water proofing shall be of 6 mil thickness.
- f) Isolated drains shall consist of a two member housings designed to be cast into floating slab and structural slab with no rigid contact between the two members.

PART-3: EXECUTION

3.1 Installation:

3.1.1 For Floating Floor

- a) Ensure all areas to receive sound isolation are dry, and cleared of debris.
- b) Set and adhere perimeter isolating boards to all curbs and penetrations.
- c) Roll out isolation material with mounts and acoustical blanket attached in accordance with manufacturer's drawings and installation instructions. Insert additional mounts for high load area as detailed in drawings.
- d) Lay plywood pouring form sheets on top of isolation mounts, staggering joints, and connect edges using junction plates and screws as per manufacturer's recommendations.
- e) Install two layers of polyethylene sheet over entire floor area, extending up and over perimeter isolation. Seams shall be overlapped 4" and continuously taped to prevent against concrete leakage.
- f) Install reinforcing and pour floating slab.
- g) After concrete has cured, remove filler strip from perimeter and caulk all joints with perimeter sealant.

3.2 Field Quality Control:

3.2.1 For Floating Floors

Notification shall be given by the Contractor to the Architect, Consultant and field representative of the isolation material manufacturer to inspect the installation at the following stages:

- a) Upon completion of all areas prior to the placement of the isolation materials. All surfaces shall receive Consultants approval before installation of isolation materials.
- b) Upon completion of placement of isolation material prior to placement of form-work. The manufacturer's representative shall be on hand to assist in the initial stages of placement of isolation material to insure the proper procedures and techniques are strictly followed.
- c) Upon completion of the finished floor and installation of sealant. The final inspection of the isolation system shall be made at this time. Any evidence of faulty performance shall be evaluated and such imperfections shall be corrected at no cost to the Owner.

END OF SECTION 23.05.48

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CENTRIFUGAL FANS

1. General:

The Contractor shall supply fans of the type specified below, and conforming to the data given in the EQUIPMENT DATA SHEET. The Contractor shall be responsible for the proper selection of the fans so that the specified operating conditions are obtained. Motors shall conform to specification under MOTOR (Section 23 05 13) and shall be sized to provide the required BHP for meeting the specified conditions without overloading.

2. Centrifugal Fans:

Shall be single width, single inlet or double width double inlet, class I, II or III as required or indicated in the EQUIPMENT DATA SHEET for the design system pressure.

Fan Housings: Housings shall be of heavy gauge steel, continuously welded construction with rigid reinforcement. In class I & II construction size 12 inches through 27 inches shall have 12 gauge sides and 14 gauge scrolls, while sizes 30 inch through 66 inches shall have 10 gauge sides and 12 gauge scrolls. All fan housings shall be equipped with flanged discharge, and removable spun inlet cones designed for smooth airflow.

Single-inlet, single-width fans shall be provided with extended inlet collars for slip-on type duct connections. Inlet collars shall be of heavy gauge round design.

Fan Wheels: shall be rigidly constructed, accurately balanced both statically & dynamically on precision electronic balancers, and shall be free from objectionable noise and vibration.

Each wheel shall be designed for critical speed of at least 1.25 times the maximum class speed. Up to 27 inches fan blades may be forward curved, backward curved or airfoil design. Fan blades over 27 inches shall have backward curved or airfoil design, unless otherwise specified under EQUIPMENT DATA SHEET. Forward or backward curved wheel shall be of steel plate, while aerofol wheels shall be of cast aluminium, or formed steel with cavity filled.

Fan Shaft: Fans shall have shafts of solid hot rolled steel, accurately turned, ground, polished & ring gauged for accuracy. Close tolerances must be maintained where the shaft makes contact with the bearings. Shaft diameter, must have first critical speed at least 1.35 times the maximum class speed of the fan.

Bearings: Fans shall have heavy duty, grease lubricated, precision anti-friction ball or roller, self-aligning, pillow block type bearings, selected for minimum average bearing life of 125,000 hours when operating at maximum catalogued class conditions. Bearings shall be provided with suitable arrangements for re-lubrication.

Mounting & Drive: The fan and motor drive shall be mounted on heavy steel framing. Motor shall be mounted on slide rails. Drive arrangement shall be as specified, or as recommended by AMCA for the condition of operation. Drive shall be selected for minimum 1.2 BHP. Fans upto & including 50HP shall be with variable pulley & suitable for adjustment within $\pm 10\%$ of specified RPM. Provide complete belt guard on fan and motor pulley, constructed of heavy steel framing and expanded metal mesh screening.

Painting & Coatings: Each fan component shall be thoroughly degreased, phosphatised and provided with two coats of special anti-rust primer and two coats of stove enamelled paint.

3. Installation:

Fans shall be rigidly secured so that they operate without vibration and transmission of vibration to structure, shall be isolated. Connection to ducting shall be through flexible connectors. Ducting connection to fan shall ensure lowest turbulence and smooth transition of sides. All supporting arrangement of the fans shall be drawn up by this contractor and submitted to the consultant for approval.



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Floor mounted fan shall be installed as a 100mm high concrete foundation with edges provided with 25×25×3mm angle iron.

4. Commissioning and Testing:

The fans shall be commissioned and tested by this contractor. Test forms, supplied by the consultants shall be filled in and the consultant's approval obtained.

5. Reference Specifications:

The following specifications shall be construed to be part of these specifications.

- 23 01 01 – Basic Mechanical Requirement
- 23 01 02 – Basic Mechanical Materials and Methods
- 23 05 10 – Equipment Installation
- 23 05 13 – Motors
- 23 05 29 – Supports & Anchors
- 23 05 48 – Vibration Isolation Control
- 23 05 50 – Painting & Coating
- 23 05 53 – Mechanical Identification

END OF SECTION 23.34.16

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PLUG FAN

1. General:

The Contractor shall supply fans of the type specified below, and conforming to the data given in the EQUIPMENT DATA SHEET (Section 2). The Contractor shall be responsible for the proper selection of the fans so that the specified operating conditions are obtained. Motors shall conform to specification under MOTOR (Section 23 05 13) and shall be sized to provide the required BHP for meeting the specified conditions without overloading.

2. Plug Fans:

Shall be direct driven single rotor, class I, II or III as required or indicated in the EQUIPMENT DATA SHEET (Section 2) for the design system pressure.

Fan Wheels: shall be rigidly constructed, accurately balanced both statically & dynamically on precision electronic balancers, and shall be free from objectionable noise and vibration.

Each wheel shall be designed for critical speed of at least 1.25 times the maximum class speed. Upto 27 inches fan blades may be forward curved, backward curved or airfoil design. Fan blades over 27 inches shall have backward curved or airfoil design, unless otherwise specified under EQUIPMENT DATA SHEET (Section 2). Forward or backward curved wheel shall be of steel plate, while aerofoil wheels shall be of cast-aluminium, or formed steel with cavity filled.

Fan Shaft: Fans shall have shafts of solid hot rolled steel, accurately turned, ground, polished & ring gauged for accuracy. Close tolerances must be maintained where the shaft makes contact with the bearings. Shaft diameter, must have first critical speed at least 1.35 times the maximum class speed of the fan.

Bearings: Fans shall have heavy duty, grease lubricated, precision anti-friction ball or roller, self-aligning, pillow block type bearings, selected for minimum average bearing life of 125,000 hours when operating at maximum catalogued class conditions. Bearings shall be provided with suitable arrangements for re-lubrication.

Mounting & Drive: The fan and motor drive shall be mounted on heavy steel framing. Drive arrangement shall be as specified, or as recommended by AMCA for the condition of operation. Drive shall be selected for minimum 1.2 BHP.

Painting & Coatings: Each fan component shall be thoroughly degreased, phosphatised and provided with two coats of special anti-rust primer and two coats of stove enamelled paint.

3. Installation:

Fans shall be rigidly secured so that they operate without vibration and transmission of vibration to structure, shall be isolated. Connection to ducting shall be through flexible connectors. Ducting connection to fan shall ensure lowest turbulence and smooth transition of sides. All supporting arrangement of the fans shall be drawn up by this contractor and submitted to the consultant for approval.

Floor mounted fan shall be installed as a 100mm high concrete foundation with edges provided with 25x25x3mm angle iron.

4. Commissioning and Testing:

The fans shall be commissioned and tested by this contractor. Test forms, supplied by the consultants shall be filled in and the consultant's approval obtained.



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5. Reference Specifications:

The following specifications shall be construed to be part of these specifications.

- 23 01 01 - Basic Mechanical Requirement
- 23 01 02 - Basic Mechanical Materials and Methods
- 23 05 10 - Equipment Installation
- 23 05 13 - Motors
- 23 05 29 - Supports & Anchors
- 23 05 48 - Vibration Isolation Control
- 23 05 50 - Painting & Coating
- 23 05 53 - Mechanical Identification

END OF SECTION 23 34 17



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Plug Fan
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AIR FILTERS

1. General:

Each air system shall have its own air filters, and shall be of capacities and sizes as given in specifications herein, or in the EQUIPMENT DATA SHEET.

The air-handling unit filter shall be mounted in an air-tight flat or angular filter box of galvanised steel or aluminium sheet so that they can be removed from either end for replacement and cleaning. In an air handling unit the filter section shall be a standard module from the AHU manufacturer.

In selecting the sizes of the air filters, the space available in the Plant Room and air handling units etc., should be kept in view.

The Contractor shall provide the following information for each of the air filters proposed to be supplied by them.

- Capacities in CFM and media air velocity.
- Initial and Recommended Final air pressure drop in inch of WG (Pa) for each type of filters.
- Manufacturer's performance guarantee certificate and technical bulletins.

The Contractor shall install a multi-blade damper in the plenums of air handling unit having high efficiency filters to balance the air system when the filtering media is new with low initial resistance.

2. Viscous Impingement Filters (Filter Class G2 to EN 779):

Filters shall conform to filter Class G2 to CEN Standard EN 779, & provide a Dust Arrestance Efficiency of 65% to 80%.

Filters shall be 2 inch (50mm) thick, permanent viscous impingement, washable, all metal, panel type. Media shall be corrugated strips of aluminium screen enclosed in an 18 gauge aluminium frame with flush mitred corners. The corrugation shall be tapered to form a series of pyramid shaped pockets to prevent dust-laden air from drifting through the filters. Expanded metal shall be placed on both sides of the filtering media to add strength and for mechanical protection.

Resistance to airflow of a clean filter shall not exceed 0.1 inch WG. Pressure drop across the filter and final pressure drop shall not exceed 0.5 inch of WG. The filters shall be selected for face velocities not exceeding 500 fpm (2.5 m/s).

Provide filter adhesive in suitable containers in sufficient quantity for three month's requirement, based on operating the system for 10 hours a day. Provide a filter washing tank suitable for washing of the particular size of filter.

3. Replaceable Panel Filter (Filter Class G2 to EN 779):

Filters shall conform to filter Class G2 to CEN Standard EN 779, & provide Dust Arrestance Efficiency of 65% to 80%.

This filter shall consist of 2-inch (50mm) thick glass fibre mat coated with dust binding adhesive (Viscosine) as the filtering media. The filtering media shall be fixed into a U-shaped metal frame and a metal grid shall be provided for additional support.

The filter shall be supplied with a 50mm deep galvanised steel cell (holding) frame with quick release clamps or hinge type spring clips for positive airtight clamping of the filter.

The filter shall have a rated face velocity of 500 FPM (2.5m/s) with maximum initial resistance of 0.24 inch of WG (60 Pa) and final pressure drop of 0.72 inch of WG (180 Pa).

Throwaway Disposable Synthetic Media Panel Filters (Filter Class G4 to EN 779):

Filters shall conform to filter Class G4 to CEN Standard EN 779, & provide Dust Arrestance Efficiency of greater than 90%.



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This filter shall be a pleated disposable filter utilizing synthetic media securely sealed in a die-cur beverage board frame. The filter shall be 2 inch (50mm) thick.

The filter shall be supplied with a 50mm deep galvanised steel cell (holding) frame with quick release clamps or hinge type spring clips for positive airtight clamping of the filter.

The filter shall have a rated face velocity of 500 FPM (2.5m/s) with maximum initial resistance of 0.30 inch of WG (75 Pa) and final pressure drop of 0.72 inch of WG (200 Pa).

5. Medium Efficiency Bag Filters (Filter Class F6 to EN 779):

Filters shall conform to filter Class F6 to CEN Standard EN 779, & provide Average Atmospheric Dust Spot Efficiency of 60% to 80%.

These filters shall be extended surface air filters, pocket type having a minimum of 8 pockets; with either a retainer device designed to give full top, bottom and side support to each pleat, or with the pleats so designed as not to require a supporting retainer. Retainer device, if used, shall be of galvanised wire with PVC coating.

Filter media shall be ultra-fine fibreglass specifically manufactured for filtration.

Filters shall be provided with holding frames lined with sealing gasket with quick-release clamps, for side access application, designed to ensure a positive seal against leakage of unfiltered air. The filters shall have a rated filter face velocity of 500 FPM (2.5m/s), providing a maximum Initial Resistance of 0.24 inch of WG (60 Pa) and a recommended final resistance of 1 inch WG (250 Pa). Filter depth shall be 22 inches (560mm).

6. Medium Efficiency Bag Filters (Filter Class F7 to EN 779):

Filters shall conform to filter Class F7 to CEN Standard EN 779, & provide Average Atmospheric Dust Spot Efficiency of 80% to 90%.

These shall be similar to Class F6 Bag Filters as specified above. The filter shall have a rated filter face velocity of 500 FPM (2.5m/s), providing a minimum initial resistance of 0.3 inch of WG (75 Pa), and a recommended final resistance of 1 inch WG (250 Pa).

7. High Efficiency Bag Filters: (Filter Class F8 to EN 779):

Filters shall conform to filter Class F8 to CEN Standard EN 779, & provide Average Atmospheric Dust Spot Efficiency of 90% to 95%.

These shall be similar to Class F6 Bag Filters specified above, except that the filters shall have a minimum of eight pockets and shall have a rated filter face velocity of 500 FPM (2.5m/s), providing a maximum initial resistance of 0.35 inch of WG (88 Pa), and a recommended final resistance of 1 inch WG (250 Pa). Filter depth shall be 22 inches (560mm).

8. High Efficiency Pleat Filters (Filter Class F9 to EN 779):

Filters shall conform to filter Class F9 to CEN Standard EN 779, & provide Average Atmospheric Dust Spot Efficiency of greater than or equal to 95%. These shall be of high efficiency extended surface rigid type, consisting of galvanised steel holding frame and replaceable filter.

The holding frame shall be of 16 gauge galvanised steel, minimum 70mm in depth, and designed to provide positive seal against leakage of unfiltered air. The frames shall be provided with integral spring type latches to firmly hold the filter against neoprene rubber gaskets.

The filters shall be made from water-resistant ultra-fine glass fibres. The media shall be pleated and shall have crimped aluminium separators to maintain uniform spacing between pleats. The filter casing shall be of galvanised steel.

The rated filter velocity shall be 500 FPM (2.5 m/s) providing a maximum Initial Resistance of 0.60 inch of WG (150 Pa) and a Recommended Final Resistance of 1.2 inch WG (300Pa). Filter depth shall be 292mm.

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9. Activated Carbon Filters:

These filters shall consist of activated carbon filter cells for removal of odour and harmful vapours by adsorption process.

Filter housing shall be constructed of 16 gauge galvanised steel sheet with internal stiffener bars. Top and bottom slide track inserts shall be one-piece moulded corrosion resistant plastic.

Filter cell frame shall consist of moisture resistant chipboard with neoprene seals. The activated carbon cells shall be of wedge formation securely fixed to the frames. The activated carbon used shall have cylindrical shaped granules. Filter shall be minimum 1 inch (25mm) thick. Carbon trays shall be rechargeable and manufactured of high impact plastic with internal separators to prevent settling of the carbon beds. Two beads of caulking, one on either side of the mounting holes and around the framework to allow the filters to seal against each other shall be provided.

The filters shall have a rated filter velocity of 500 fpm (2.5m/s), providing a maximum initial resistance of 0.5 inch of WG (125 Pa). Minimum service life shall be one year.

10. Reference Specification:

The following specifications shall be construed to be part of these specifications.

- 23.01.01 - Basic Mechanical Requirement
- 23.01.02 - Basic Mechanical Materials and Methods

END OF SECTION 23.41.10

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SPECIFICATIONS

AIR HANDLING UNITS

PART-1: GENERAL

1.1 Scope of Work:

- A. Furnish all labor, materials, plant, equipment and appliances and perform all necessary operations required to execute the work of this section.
- B. This section describes the technical and workmanship requirements for packaged air handling units.
- C. The Contractor shall furnish and install Central Station Air Handling Units of configuration & capacities as scheduled in EQUIPMENT DATA SHEET, and specified hereunder.
- D. Contractor shall be duly responsible for verifying the dimensional suitability of the air-handling units for installation in the space allocated, as shown on the drawings.

1.2 Related Sections:

The Contractor shall become familiar with other sections of the Specifications affecting work of this trade, and shall comply with them in carrying out work under this section.

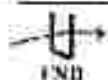
In particular the following should be referred:

- 23 01 01- Basic Mechanical Requirements
- 23 01 02- Basic Mechanical Materials & Methods
- 23 05 10- Equipment Installation
- 23 05 13- Electric Motors
- 23 05 48- Vibration Isolation & Control
- 23 05 93- Cleaning, Adjusting, Testing and Commissioning
- 23 05 94- Test Run
- 23 34 16- Centrifugal Fans
- 23 34 17- Plug Fans
- 23 41 10- Air Filters
- 23 41 33- High Efficiency Particulate Air Filters
- 23 72 13- Air to Air Rotary Heat Exchanger
- 23 72 19- Air to Air Plate Heat Exchanger
- 23 85 10- Sound Attenuation Equipment & Material

1.3 Standards:

The minimum standards for products specified in this section shall be those standards referred to or relevant BSI standards.

- EN 1886:2007- Mechanical Performance of AHU's.
- EN 13053- Rating & Performance of AHU's, components & sections.
- EN 10142- Specification for continuously hot-dip zinc coated low carbon steel sheet.
- ARI- Air-Conditioning and Refrigeration Institute.
- ASHRAE 84- 78- Method of Testing Air to Air Heat Exchangers.
- AMCA 210-99- Laboratory Methods of Testing Fans for Aerodynamic Performance.
- AMCA 300-85- Test Code for Sound.



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1.4 Submittals For Review:

- A. Submit samples, specifications, technical compliance statement, computerized selection print-outs, engineering calculations, catalogue cut sheets, description of product and installation method in accordance with the Contract Documents. Submissions shall indicate all dimensions, details of construction, details of installation, relation and connections with adjoining work, performance ratings including fan static, flow, cooling coil and heating coil performance, fan performance, filter details, and sound power levels, etc., as required or directed by the Consultant.
- B. Within two weeks, the manufacturer shall furnish, for the approval of the Client/ Architect/Consultants three sets of detailed shop drawings of AHUs & other equipment required to complete the projects as per specifications. These drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity.
- C. Submit certification documents to substantiate certification specified.
- D. Submit copies of test reports required to be performed on the proposed products.
- E. Submit a list of installation completed where proposed products were used.
- F. Submit Manufacturer's Warranty in conformance to specifications given elsewhere.

1.5 Quality Assurance:

Perform Work in accordance with relevant European or British Standards and industry standard codes.

1.6 Qualifications:

Equipment shall meet or exceed the certification requirements specified.

1.7 Mock-Ups:

No requirements.

1.8 Environmental Requirements:

The AHU shall be suitable for the environment in which it is sited and for the air that flows through it.

The external environment shall be considered to be hot (up to 46°C), humid (up to 32°C saturated and moisture contents up to 0.030 kg/kg), dusty (up to 70mg/m³). Installations close to shoreline cities shall also consider a saline environment.

1.9 Warranty:

Submit Manufacturer's Warranty.

PART-2: PRODUCTS

2.1 Approved Manufacturer or Product:

Refer section 23 90 10- List of Approved Manufacturer's.

2.2 Product Requirements:

- A. Air Leakage: Ensure air handling unit is sealed to prevent air leakage at design pressure. The unit shall have air leakage in accordance with EN 1886: 2007.
- B. System Resistances: The external system resistances indicated are approximate and the contractor shall calculate the actual resistance based on the coordinated installation drawings and on actual equipment selected.

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2.3 Air Handling Unit Construction:

A. General Requirements

All individual components of air handling units shall comply with the appropriate sections of this specification unless otherwise specified in the EQUIPMENT DATA SHEET or on the drawings. The units shall have Eurovent or equivalent certification specified or approved by the consultant. The complete unit shall be manufactured by one manufacturer. The units shall have all necessary sections like supply and return fan sections, mixing sections, cooling coil sections, heating coil sections, empty sections, heat recovery sections, pre-filter section, fine filters section, etc. to meet the requirements of the EQUIPMENT DATA SHEET and drawings so as to make a complete unit to meet the performance requirements. Each component section of the unit shall be of same matching cross sectional dimension along the length of the unit so as to give a neat appearance and even air flow through each section.

B. Construction Standard

The AHU's shall have the following construction standards in accordance with their application and as per EN 1886: 2007.

S. No.	Parameters for Standards	Classification for Outdoor units in air conditioned space	Classification for Indoor units in air conditioned space	Classification for Outdoor units in air exposed atmosphere	HEPA Filter application
1	Mechanical Strength of casing	≤4mm/m or ≤0.048in/ft (D1)	≤4mm/m or ≤0.048in/ft (D1)	≤4mm/m or ≤0.048in/ft (D1)	≤4mm/m or ≤0.048in/ft (D1)
2	Casing Air Leakage at 400 Pa negative pressure	≤0.44 l/s.m² or ≤0.00144 ft³/s.ft² (L2)	≤0.44 l/s.m² or ≤0.00144 ft³/s.ft² (L2)	≤0.44 l/s.m² or ≤0.00144 ft³/s.ft² (L2)	≤0.15 l/s.m² or ≤0.0005 ft³/s.ft² (L1)
3	Casing Air Leakage at 700 Pa positive pressure	≤0.63 l/s.m² or ≤0.0021 ft³/s.ft² (L2)	≤0.63 l/s.m² or ≤0.0021 ft³/s.ft² (L2)	≤0.63 l/s.m² or ≤0.0021 ft³/s.ft² (L2)	≤0.22 l/s.m² or ≤0.00072 ft³/s.ft² (L1)
4	Maximum Filter Bypass Leakage (% of nominal flow rate)	≤1 (F8)	≤1 (F8)	≤1 (F8)	≤0.5 (F9)
5	Thermal Transmittance of casing	0.5<U≤1 (W/m²K) or 0.088<U≤0.176 (Btu/ft²h°F) (T2)	0.5<U≤1 (W/m²K) or 0.088<U≤0.176 (Btu/ft²h°F) (T2)	U ≤ 0.5 (W/m²K) or U ≤ 0.088 (Btu/ft²h°F) (T1)	As per equipment data sheet
6	Thermal Bridging of casing	0.6 ≤ kb ≤ 0.75 (T62)	0.6 ≤ kb ≤ 0.75 (T62)	0.75 ≤ kb ≤ 1.0 (T61)	As per equipment data sheet

C. Structure & Panels

AHU structure shall consist of extruded aluminum, with insulated double skin sheet metal panels. The metal shall have a minimum thickness of 0.7mm for the outer skin and 1mm for the inner skin & strengthened as necessary to prevent distortion and drumming. Ensure structure is rigid enough to prevent distortion during transportation and after final assembly on site. Seat panels into extruded frame with purpose made corner joints. Ensure framework is self-supporting. For vertical units strengthen framework to support additional weight.

The Insulation shall be a minimum thickness of 40mm or as indicated in the EQUIPMENT DATA SHEET. For outdoor mounted units and treated fresh air units the insulation thickness shall be a minimum of 50mm or as necessary to prevent

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condensation. The insulation shall be of the closed-cell foamed plastic type or mineral wool, or polyurethane, of suitable thickness & thermal conductivity to meet the Thermal Transmittance Standards specified earlier.

The panels shall be easily removable using quick release fasteners to obtain access for inspection and maintenance. All items shall be assembled by means of bolts, anti-vibration lock washers and nuts or accepted quick release fastenings. Construct unit to withstand maximum fan static pressure without plastic deformation.

Additional insulation shall be provided as required to prevent any risk of condensation on the external surfaces for units mounted outdoor or for treated fresh air handling units.

Outer skin material - Polyester epoxy coating to a thickness of 200 microns on galvanized steel with galvanising to a thickness of 20 microns to EN 10142 or EN 10143 and EN 10147.

Inner skin material - Zinc coated steel hot dip galvanized to a thickness of 20 microns to EN 10142 or EN 10143 and EN 10147.

Use corrosion resistant fastenings throughout. Do not use self tapping screws. Provide panel gaskets to give a durable seal between panels and frames to prevent excessive air leakage.

The casing strength of the assembled unit shall be designed to meet BS EN 1886, Class 2A. The casing air leakage of the assembled unit shall be designed to BS EN 1886, Class B.

The weighted sound reduction index (Rw) of the casing panels shall be greater than 28 dB when tested in accordance with ISO 140/3 and BS 5821 Part 1.

All units shall be mounted on appropriate anti-vibration mountings.

All AHU sections shall be mounted on a galvanised structural base, minimum 160mm high, extending to the full length of the air-handling unit. Jointing between sections shall be either by galvanised steel bolts or by galvanized steel cleats. Non-ageing rubberised material gasket shall be provided between the sections.

The casing shall have earthing connection at two ends.

D. Volume Control Dampers

Control dampers shall be of extruded aluminum. Dampers shall be of the opposed blade multi-leaf type. Dampers shall have open-close indication sign. The arrangement of dampers shall ensure adequate mixing. Necessary brackets & linkages shall be available for motorized operation. The volume control dampers shall have synthetic seals on the blade tips and spring loaded side edge seals to ensure leakage rate does not exceed 1% of nominal flow at 250 Pa negative pressures.

E. Drift Eliminator

Where units incorporate humidifying plant and/or cooling coils, the AHU shall be provided with drift eliminators to reduce/eliminate transfer of water. Such AHU's shall have adequate drain trays to collect water; the drain trays shall be extended, or other means of collection shall be provided, to ensure the removal of any water deposited or condensed in adjacent sections. Trays collecting cooled water shall be made of stainless steel and shall be insulated by closed cell foam insulation to prevent condensation on the outer surface, and shall be provided with a trapped outlet to drain.

F. Access Doors

Provide access openings to fans, dampers, filters, cooling coils, humidifiers, etc. complete with opening devices, and sealed to prevent air leakage. Ensure seals are designed for normal maintenance operations for a minimum of 10 years.

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Access doors shall be 400mm minimum width, hinged & removable type, preferably with universal mounting and not requiring any tools for opening the door. Hardware used shall be of high quality from a renowned manufacturer.

G. Accessories

1. Provide flexible connection between fan discharge and AHU casing outlet. Ensure flexible connections comply with fire regulations.
2. Provide Magnehelic Differential Pressure Gage across each filter set, to measure pressure drop across filters.
3. Provide inspection port-holes in all sections of the AHU.
4. Provide bulk-head mounted lights in all sections of the AHU, with operating switch mounted outside the AHU.
5. Provide terminal box on outside of the AHU, with wiring terminated between the terminal box and the motor. This shall also include ground wire.
6. Provide external Air-Handling Units with rain hood.

2.4 Fan & Motor

- A. Fans shall be either DWDI Centrifugal fans as specified in Section 23 34 16 or Plug Fans as specified in Section 23 34 17, as indicated in the EQUIPMENT DATA SHEET.
- B. Motors shall comply with specifications given in Section 23 05 13.
- C. Fan & Motor shall be mounted on a mounting base, isolated from casing with spring mounted vibration isolators. Motor mounting shall allow quick adjustment using jackscrew.
- D. Fans fitted to all air handling units shall be provided with external lubricators arranged to terminate adjacent to the access door to the fan section of the air handling unit.
- E. Fans shall be capable of giving the specified performance when tested in accordance with AMCA 210-85 and AMCA 300-85.
- F. Fans shall be capable of discharging the required volume of air against the ductwork system resistance plus the resistance through the unit itself. Contractor shall add the resistance through the unit to the external static pressure indicated for selecting the fans.
- G. For blow through units ensure air-flow in downstream sections of unit has relatively uniform velocity profile. If necessary, provide diffuser section.
- H. Supply fan guards to EN 292. Belt driven fans shall be fitted with pulleys suitable for V-belts; pulleys of the taper lock type may be used for drives up to 30kW output. Alternatively, and in any case above 30 kW output, pulleys shall be secured to the fan and the motor shafts by keys fitted into machined keyways. Pulleys shall be keyed to the fan shaft in the overhung position. Keys shall be easily accessible so that they can be withdrawn or tightened and they shall be accurately fitted so that the gib head does not protrude beyond the end of the shaft.

Machined bolts, nuts and washers only shall be used for the assembly of fans; all bearing surfaces for the heads of bolts or washers shall be counter faced. Holding-down bolts for fans and motors shall be square section under the head or be fitted with lugs to prevent them turning in the fan base plate when the nuts are tightened. Any fan which is too large or too heavy for safe manhandling shall be provided with eyebolts or other lifting facilities to enable mechanical lifting equipment to be used.

- J. Unless otherwise indicated centrifugal fans larger than 7.5 kW output shall be of the backward curved blade airfoil type having fan total efficiencies of not less than 78%. Below 7.5 kW fans may be either forward curved or backward curved type. Fan casings shall be constructed of mild steel plates with angle stiffeners and base

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Air Handling Units
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angles to ensure freedom from drumming and shall be suitable for operation at the maximum static pressure of the system. Fan casings shall be constructed so that impellers can be easily withdrawn after installation. Outlets shall be flanged and inlets shall be flanged or spigotted as indicated except that for suction pressures greater than 1000 Pa inlets shall be flanged.

- K. A drain and plug shall be fitted to the fan casing at its lowest point.
- L. Impellers shall be of mild steel or aluminum, of riveted or welded construction, with spiders or hubs of robust design, and shall be capable of running continuously at ten percent in excess of normal speed. Impellers shall be keyed to a substantial mild steel shaft and the impeller with shaft shall be statically and dynamically balanced and tested for over speed before leaving the maker's works. Steel impellers shall be coated with minimum 60 micron epoxy painting.
- M. Shaft bearings of belt driven single inlet fans shall be truly aligned and rigidly mounted on a pedestal common to both bearings. Double inlet, double width fans shall have a pedestal mounted bearing at each side of the fan.
- N. All bearings shall be selected for at least 100,000 hours operation. Fan bearings shall be ring oiled sleeve bearings, or ball or roller type. Where silence is important the bearing pedestal shall not be attached to the fan casing, and ring oiled sleeve bearings shall be applied.
- O. Unless otherwise indicated centrifugal fans shall be driven by electric motors through V-belt drives. Belt tension adjustment arrangement shall be provided.
- P. Factory provided cable entry points shall be provided for the electrical cable connections to the motor.
- Q. Units up to and including 50 HP shall have variable pulleys and suitable for adjustments within +10% of specified RPM.
- R. The maximum fan outlet velocity shall be 10 m/s (2000ft/min).

2.5 Filter Section:

- A. Provide frames to allow withdrawal of filters. Low efficiency filters shall have slide withdrawal mechanism, while bag and HEPA filters shall have front mounting mechanism.
- B. Filters shall be provided in accordance with Section 23 41 10- Air Filters, and Section 23 41 33- High Efficiency Particulate Air Filters.
- C. The HEPA filters shall be provided with special mounting frames to allow easy mounting and removal of HEPA filters, and ensure that leakage rate is zero.
- D. Filter bypass leakage shall not exceed the specified standard.

2.6 Cooling / Heating Coil Section:

- A. Provide drain and vent connections to the coils brought outside the casing.
- B. Provide eliminator at the coil outlet for preventing carry over of water droplets.
- C. The Contractor shall ensure proper selection of all coils to provide required heat transfer capacity, and shall submit computerised selection data as proof of the same.
- D. Coil shall be removable from the unit without dismantling the entire unit. Provide slide rails to allow each coil section to be removed independently for access.
- E. The coil shall be of extended surface, staggered tube, and flat plate fin type. Coil arrangement shall be counter flow, multi-pass, and air face velocity on the coil shall not exceed 550 fpm (2.8m/s). Turbulators inside coils shall not be acceptable. Each coil shall be leak tested before shipment at 250psf (17.3 bars) and 220F (105°C).



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- F. Where indicated, AHU shall be provided with modulating type face and bypass damper for cooling coil. Modulating type of bypass damper shall have opposed-acting damper blades. Blades shall be double-skin airfoil type. Bypass damper shall have extended shaft outside AHU body for actuator opening.
- G. Casing: shall be constructed of heavy-gauge galvanised steel with adequate diameter bolts holes for mounting. Coil side plates shall be of reinforced flange type.
- H. Tubes: shall be round seamless staggered copper tubes of $\frac{3}{8}$ " or $\frac{1}{2}$ " outer diameter. All joints shall be brazed with copper brazing alloys.
- I. Fins: shall be flat aluminium plate with full drawn collars to provide a continuous surface cover over the entire tube for maximum heat transfer. Bare copper tube shall not be visible between fins. Tubes shall be mechanically expanded into the fins to provide a continuous primary to secondary compression bond over the entire finned length for maximum heat transfer rates. Fin spacing shall not exceed 10 fpi (4 fins/cm).
- J. Headers: shall be of extra heavy seamless copper tubing. Tube holes shall be intruded to provide the maximum brazing surface for added strength. Header end caps shall be heavy gauge, die formed copper, with steel male pipe thread supply & return connections. Air vent shall be provided on the top of each header. Water-cooling coils shall be circuited for drainability and for service without removing individual plugs from each tube. Headers of cooling coil shall be outside the air stream and enclosed in an insulated box.
- K. Drain Pan: The drain pan shall be double skinned, fabricated of stainless steel to AISI 304, formed with the base of the AHU with a fall of at least 1:30 to ensure continuous drainage without any water retention in the drain pan. It shall have minimum 1 inch (25mm) thick insulation of polyurethane or closed cell foam. Provide threaded drain outlet from drain pan, sealed to the casing with neoprene gasket.
- L. When so indicated in the EQUIPMENT DATA SHEET, cooling coil shall be protected with anti-corrosive coating such as Heralste/Restec.

2.7 Heat Recovery Devices

- A. Rotary Heat Exchanger- Refer Section 23 72 13.
- B. Plate Type Heat exchanger- Refer Section 23 72 19.
- C. Heat Pipes-Refer Section 23 72 35.

2.8 Hygienic Air-handling Units:

Air-handling Units specified to be "Hygienic Type" in the EQUIPMENT DATA SHEET, shall comply with relevant EU/DIN hygienic standards, and shall be provided with at least the following:

- A. Internal panel material shall be SS-304.
- B. All corners shall be rounded.
- C. Internal Surface and wall shall be smooth and with non-porous grooves.
- D. Seal and gap filling materials shall be non-porous and non-moisture absorbing.
- E. All parts and components of the unit, such as fans, motors, filters, coils (together with droplet separator and drain pan), etc. shall be resistant to commonly used cleaning and disinfecting agents.
- F. Fin spacing shall allow easy cleaning.
- G. All parts shall be easily accessible for disinfection purpose.
- H. Lights shall be marine type, with non-shatter proof material.



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- I. Fans shall be preferably plug type, to avoid dirt of belts & pulleys.
- J. Ultra Violet Germicidal Irradiation (UVGI) Lamps shall be installed in front of the cooling coil, if so indicated in the EQUIPMENT DATA SHEET.
- K. Sound absorbers shall be acoustically transparent foil to act as moisture barrier and shall be covered with perforated 55304 sheets.

2.9 Walk-In Air Handling Units (Unit Height Higher than 1500mm):

- A. Ensure floor is double skin with internal framework to support weight of two men, tools and equipment.
- B. Provide weatherproof bulkhead luminaries and switches.
- C. Provide non-slip floor surface.
- D. Ensure insulation is protected.
- E. Ensure access doors can be operated from inside and outside.
- F. Provide walk ways in large units over 2m high.

2.10 External Air Handling Units:

Construct air handling units for external use with rain hood. Provide weatherproof Isolator.

Where indicated provide connection for lightning protection.

2.11 Labelings

All AHU sections shall be labeled to identify the components therein and their specification (i.e. filter grade, heat transfer rate (kW), electrical rating (kW), Flow rate (m³/s), Pressure drop/rise (Pa) etc.).

AHU name plate shall be provided with following information.

- a. Fan Model/details
- b. Motor HP
- c. Motor Frame Size
- d. Belt Size
- e. Airflow CFM
- f. Filter Sizes & Qty.
- g. Areas connected to the AHUs & their airflow CFM
- h. Details of Terminal Heaters
- i. Valve Size/Type
- j. Filters & valve shall be numbered

2.12 Spares:

Provide spares as indicated under EQUIPMENT DATA SHEET.

PART-3: EXECUTION

3.1 Examinations

Before ordering any materials/commencing work, verify that building structure associated with the system is within tolerance and take full account of shape configuration and material properties of the structure.

3.2 Preparation:

Provide flat level plinth for the AHU.

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3.3 Handling & Storage:

Deliver AHU/sections to site, completely identified in accordance with shop and certified drawings prepared for this work. Store in accordance with manufacturer's instructions, above ground, properly protected from the weather and construction activities.

3.4 Fabrication:

All AHU's shall be fabricated in the manufacturer's works and delivered to site in sections.

3.5 Inspections:

Inspection including witnessing of tests will be carried out by Client or his authorized representative, if required. However, test certificates shall be submitted and clearance obtained before dispatch of the assembled unit.

Manufacturer shall submit calibration certificate for all instruments/pressure switches etc. supplied with the equipment.

3.6 Installation:

A. Pre Installation Check

1. Before beginning installation in any area, examine all parts of the adjoining work into which applicable work is to be placed. Should any conditions be found which will prevent the proper execution of the work, installation shall not proceed in that area until such conditions are corrected by the contractor.
2. Ensure air handling units are positioned to allow adequate space for maintenance and access.
3. Duct Connections: Ensure air stream is straightened as it leaves unit discharge. Ensure ductwork connection is long enough to preserve the aerodynamic performance of the fan.

B. Services Connections

1. Ensure panels are sealed around electrical cable and pipe work service entry points to prevent air leakage.
2. Provide flexible cables between fan motor and local isolator.

C. Isolation of Units

1. Provide means of isolating air handling units electrically to allow maintenance and repairs to be carried out.
2. Provide means of isolating pipe work to air handling units to allow maintenance and repairs to be carried out.
3. Provide means of isolating steam to humidifier when access door is opened.

D. Drainage of Free Water

Make provision for free water to be caught, collected and drained away. Provide U-traps on all drains suitable for the negative/positive pressure created by the fan.

3.7 Field Quality Control:

Provide field quality control according to the Contractor's approved Project Quality plan.

3.8 Cleaning:

- A. Refer Section 23 05 93.
- B. Remove labels after work is complete.



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C. Remove all splashed paint, cement splatter, protective paper, etc after work is complete, & deliver AHU in clean condition.

3.9 Protection of Finished Work:

Protect all equipment & work from deterioration from any condition, till handing over.

3.10 Foundation:

Foundation shall consist of minimum 100mm concrete pads constructed of 1:2:4 cement concrete. The foundation shall be finished with 5mm thick cement plaster; edges shall be provided with 25x25x3mm angle iron. The height of concrete pad shall be suitable for the height of drain trap for the particular AHU.

3.11 Installation:

The installation shall be carried out complete in all respects as per recommendations of the manufacturer & as specified herein. Pipe connections, duct connections, flexible connections, electrical connections, drain connections, etc., shall be done by the Contractor complete in all respects.

Provide drainage pipe work from cooling coils, humidifiers and components where water may collect. Comply with recommendations in CIBSE Technical Memorandum TM13 in connection with Legionnaires' disease. Provide traps suitable for the static pressure involved.

3.12 Commissioning & Testings:

The unit shall be commissioned and tested as per the manufacturer's recommendations. Drives shall be adjusted for the proper airflows, etc. The Contractor shall be required to carry out tests, on forms to be supplied later by the Consultant, and obtain approval.

The manufacturer shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for the AHUs and associated equipment included in this contract. This shall be supplementary to manufacturers operating & maintenance manuals. Upon approval of the draft, the manufacturer shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals and relevant P & ID drawings etc.

Manufacturer/contractor shall depute skilled operators for operating the entire installation for a period of seven (7) days each to enable the Client's staff to get acquainted with the operation of the system. During the period, the manufacturer/contractor shall train the Client's representative in the operation, adjustments and maintenance of all equipment installed.

END OF SECTION 23 73 10

PROJECT NO : 1890
 PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
 DATED : 06TH AUGUST, 2025

VARIABLE FREQUENCY DRIVES

1. General

The Variable Frequency Drives (VFD) shall be capable of converting 3-phase/1-phase (50Hz) AC voltage into a variable output voltage and frequency. The VFD shall also be capable to supply a full output voltage to the motor even at a continuous supply voltage $\pm 10\%$. VFD shall be able to control motors of different sizes connected in parallel, and it must be possible to stop a machine during operation without the risk of tripping and shall regulate all types of IEC standard motors without load reduction and without the motor temperature becoming higher than under normal mains operation.

The VFD shall have filters in the intermediate circuit to ensure that the 5th harmonic transmitted to the mains supply is limited to approx. 30%. It must comply with EMC and RFI requirements according to EN5501 (VDE0875).

2. Construction

The Variable Frequency Drives shall be manufactured and tested in accordance with ISO9001 and BS5750, parts 1&2. The metal enclosure shall conform IP20 unless otherwise specified in the EQUIPMENT DATA SHEETS.

VFD shall be provided with software controlled ventilation fan.

3. Controls

The control panel shall be detachable type and able to function 3 meters away from the VFD to ensure that it can be mounted in a central control panel and must comply with IP54. The VFD must have an integrated PID-regulator as standard to obtain closed loop control, with 0-10V, 1-5V, 4-20mA signals.

The VFD control system shall be able to accept minimum four (4) configurable digital inputs, two (2) analog inputs, and provide two (2) configurable relay output, two (2) configurable analog output, eight (8) fixed frequencies, two (2) ramp times for each acceleration and deceleration & shall have one standard RS 485 communication port. The RS 485 interface shall be able to operate with all common industry protocols such as BACnet or Lonworks protocol as specified.

4. Required Features

The Variable Frequency Drives (VFD), (frequency speed controller, variable frequency speed controller, adjustable speed drive) shall have the following features:

- a) Input Frequency 50Hz
- b) Output Frequency 5 - 100Hz
- c) Output Voltage Input voltage (400V, 3 phase or 230V, 1 Phase)
- d) Minimum efficiency of VFD 95%
- e) Protections against (with Indication)
 - i) Short-circuit Phase-Phase
 - ii) Short-circuit Phase-Earth
 - iii) Over-current
 - iv) Heat sink over temperature
 - v) Motor thermistor over temperature
 - vi) Over-voltage/under-voltage
 - vii) Single phasing
 - viii) Motor stalled

High-speed
fuses



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DATED : 06TH AUGUST, 2020

- bx) Motor over-speed
 - x) Loss of set-point
 - xt) Increase in dc link voltage due to braking of motor.
- f) ControlBy manual potentiometer or by external signal (4-20mA, 0-10V, serial communications port)
- g) Acceleration/Deceleration Time1-20 secs (separately adjustable)
- h) Overload Capacity1.5 x rated output current for 60 second,
2 x rated output current for 3 second.
- i) (current)110% continuously

5. Standard Functions:

The VFD unit shall contain the following minimum standard functions:

- a) Inverter trip at 75°C on the heat sink.
- b) Protection against under-voltage.
- c) Protection against over-voltage.
- d) Alpha-numeric display (alpha-numeric code).
- e) Choice of language in display.
- f) 'ON', 'ALARM' indication.
- g) Choice of minimum 12 different displays, e.g. output current, voltage, frequency, speed, output, torque, motor temperature, energy kWh.
- h) The speed must be controllable via the keys (manual operation).
- i) Lock to prevent unintended programming of the VFD.
- j) 4 individual adjustable ramps—2 acceleration, 2 deceleration, with a setting range of 0–3, 600 sec.
- k) 4 setup menus.

6. Installations

The Variable Frequency Drives shall be installed in accordance with manufacturer's recommendations complete in all respects.

Unless otherwise specified, the VFD along with its control panel shall be mounted on the Air Handling Unit (AHU). In this respect, the Contractor shall be responsible for co-ordination of the VFD supplier and AHU supplier to ensure that a proper space provision along with a passage for ventilation of VFD by its fan is kept in the AHU Plant Room.

7. Commissioning & Testing:

The VFD shall be commissioned and tested in accordance with ISO, 85 and manufacturers recommendations. The test reports includes motor load test shall be submitted to the consultant for approval, along with technical operation and maintenance literature.

8. Spares:

The VFD shall be supplied with squares as indicated in the EQUIPMENT DATA SHEETS.

9. Reference Specification:

The following specifications shall be construed to be part of these specifications.

- 23 05 01 – Basic Mechanical Requirement
- 23 05 02 – Basic Mechanical Materials and Methods



SPECIFICATIONS

PROJECT NO : 1880
PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI
DATED : 06TH AUGUST, 2026

- 23 05 10 – Equipment Installation
- 23 05 29 – Supports & Anchors
- 23 05 50 – Painting & Coating
- 23 05 53 – Mechanical Identification

END OF SECTION 23 87 20

034



PROJECT NO : 1890

SPECIFICATIONS

PROJECT TITLE : SSGCL HEAD OFFICE BUILDING, KARACHI

DATED : 06TH AUGUST, 2025**LIST OF APPROVED MANUFACTURERS (AIR HANDLING UNITS)**

Equipment & Material shall be supplied only from the approved sources noted below. However in all cases the Contractor shall submit complete technical details of the equipment, material and obtain Consultants approval prior to delivery on site. Where option of "Approved Equivalent" is indicated, it shall be at the discretion of the Consultant to accept the alternate

CSI No.	Equipment/Material	By FND	
		Approved Manufacturers	Country of Origin
23 05 13	Motors	Siemens	Imported
		ABB	Imported
		Imported	USA/Europe/Japan
23 34 16 23 34 17	Fans – Centrifugal / Plug Fans	Nicotra - Gebhardt	Italy
		Comafri	Italy
		Approved Equivalent	-
23 41 10	Air Filters	Trox	Germany
		Camfil	UAE / Malaysia
		AAF	Malaysia
		Lilpatek	Turkey
		Approved Equivalent	-
23 87 20	Variable Frequency Drives	Siemens	Germany
		Schneider	Europe
		ABB	Finland
		Danfoss	Denmark

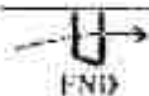


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**SSGCL HEAD OFFICE BUILDING,
KARACHI**

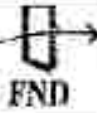
**EQUIPMENT DATA SHEETS OF AIR
HANDLING UNITS**

Ans



Fahim, Nanji & deSouza (Pvt.) Ltd.
Consulting Engineers



	EQUIPMENT DATA SHEET	SHEET 1 OF 3	DATA SHEET NO.
		REV 1	1030-23 73 10 - 1 1 1
		PROJECT TITLE :	SSSCL HEAD OFFICE BUILDING
		PROJECT NO.1	FND1000
		LOCATION :	KARACHI

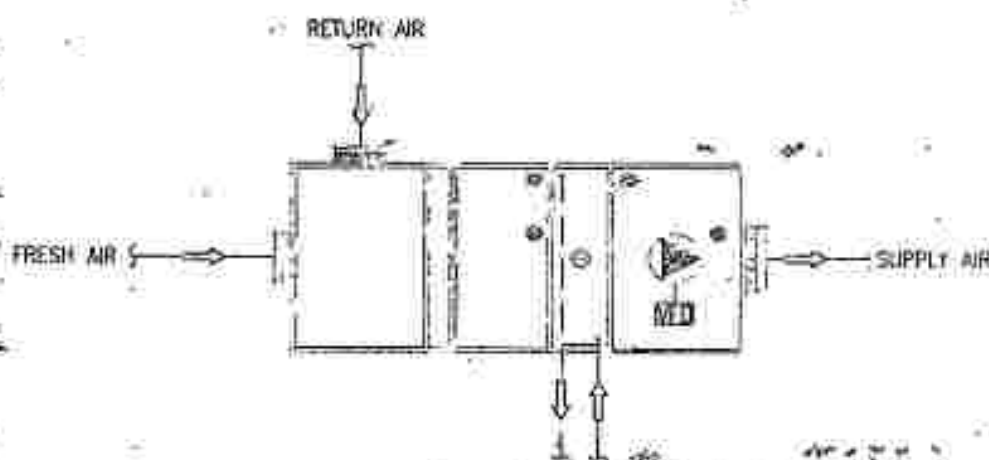
DESCRIPTION	DATA				REV
	UNIT	(PS)	(BS)	(FS)	
1 IDENTIFICATION SYMBOL		-	-	AHU / 02	
2 SPECIFICATIONS REFERENCE		-	-	23 73 10	
3 QUANTITY	No.	No.		1	
4 FND CALC. REF. NO.		-	-	-	
5 ALTITUDE AMSL	FT	M	13	4	
6 APPLICATION				FOR GROUND FLOOR OFFICE & AUDITORIUM AREA	
7 COOLING COIL DATA:					
8 TOTAL COOLING COIL LOAD	MBH	KW	207.3	207.3	
9 SENSIBLE COIL LOAD	MBH	KW	314.2	100.0	
10 SUPPLY AIR VOLUME	CFM	m ³ /hr	10,818	31,421	
11 MAKEUP AIR VOLUME	CFM	m ³ /hr	2,897	4,386	
12 BYPASS AIR VOLUME	CFM	m ³ /hr			
13 ENTERING AIR, DRY BULB / WET BULB	°F	°C	88.6/68.8	31.4/20.4	
14 LEAVING AIR, DRY BULB / WET BULB	°F	°C	54.5/51.5	12.5/11.2	
15 WATER FLOW RATE	GPM	L/min	84.3	367	
16 ENTERING WATER TEMP / LEAVING WATER TEMP	°F	°C	48.0	7.2/5.8	
17 COIL TYPE				CHILLED WATER	
18 MINIMUM FLOWS	No.	No.		4	
19 MAXIMUM PRESSURE	No./ft			12	
20 COATED COILS				NO	
21 SATURATED SUCTION TEMPERATURE	°F	°C		-	
22 FAN DATA: (SUPPLY FAN)					
23 TYPE OF FAN (NOTE - 04)				PLUG FAN	
24 TYPE OF FAN BLADE				BACKWARD CURVE	
25 SUPPLY AIR VOLUME	CFM	m ³ /hr	10,818	31,421	
26 EXTERNAL STATIC PRESSURE (NOTE - 1)	inches WG	Pascal	1.00	25.0	
27 MOTOR POWER	HP	KW	10.0		
28 POWER SUPPLY	VOLTS	VOLTS	400/500		
29 FAN MOTOR VOLTAGE VARIATION				±10%	
30 AHU MOTOR WITH VFD				YES	
31 MECHANICAL PERFORMANCE OF CASING EN 1885 (2007)					
32 MECHANICAL STRENGTH OF CASING (EN1885)				DR	
33 CASING AIR LEAKAGE (in 600 Pa Negative Pressure) (EN1885)				L2	
34 CASING AIR LEAKAGE (in 100 Pa Positive Pressure) (EN1885)				L2	
35 FILTER BYPASS LEAKAGE (Maximum filter bypass leakage rate as % of nominal flow rate) (EN1885)				21 CFM	
36 THERMAL TRANSMITTANCE (U) OF CASING (EN1885)				TS2	
37 THERMAL BRIDGING OF CASING (Thermal bridging factor k_b) (EN1885)					
38 CONSTRUCTION					
39 TYPE				DOUBLE SKIN HORIZONTAL, DRAW THROUGH	
40 HYGIENIC MODEL (REFER SPECIFICATION NO. 23 73 10)				NOT REQUIRED	
41 SOUND BOX				YES	
42 PANEL FILTER				YES	
43 BAG FILTER				FT	
44 HEPA FILTER SECTION WITH FILTERS				NOT REQUIRED	
45 RETURN AIR FAN				NO	
46 EMPTY / ACCESS SECTION				AS PER MANUFACTURER RECOMMENDATIONS	
47 BYPASS SECTION				NO	
48 ULTRAVIOLET & GERMICIDAL IRRADIATION (UVGI) LAMP (ABSORBIVE TYPE)				NO	
49 WEATHERPROOF CONSTRUCTION & CANOPY				NO	
50 SOUND ATTENUATOR				NO	
51 MAX. ALLOWABLE UNIT DIM. (L X W X H)				4400 X 2300 X 2300	
52 VIEW PORT				YES (NOTE-06)	
53 LIGHTS				YES (NOTE-06)	
54 MAGNETIC GAUGES (0 - 5 inch of WG)				YES (NOTE-11)	
55 HEAT EXCHANGER					
56					
57 QUANTITIES	QUANTITY	UNITS	REMARKS		
58 (a) FAN BEARING	1	Set	For each Fan		
59 (b) FILTER (Each Type)	2	Set	For each AHU		
60 (c) MOTOR	1	No.	For each AHU Rating		
61 (d) VFD	1	No.	For each AHU		
62					
63					
64					
65					
66					
67					

- NOTES:
- EXTERNAL STATIC PRESSURE DATA INCLUDES ONLY PRESSURE DROP EXTERNAL TO AHU. PRESSURE DROP ACROSS AHU & COIL ARE NOT INCLUDED.
 - MORTUNE ELEVATOR TO BE PROVIDED FOR COIL FACE VELOCITIES EXCEEDING 100 FPM.
 - PLATE PANEL THICKNESS SHALL BE MINA.
 - FAN IS TO BE SELECTED AT HIGHEST EFFICIENCY SEGMENT OF FAN CURVE BUT EFFICIENCY SHOULD NOT BE LESS THAN 85%.



	EQUIPMENT DATA SHEET AIR HANDLING UNITS	SHEET 1 OF 1		DATA SHEET NO. 001-23-73-10-1/1	
		PROJECT TITLE: SCHOOL HEAD OFFICE BUILDING			
		PROJECT NO.: FND/1880			
		LOCATION: KARACHI			

	DESCRIPTION	UNIT	QTY	QTY	QTY	QTY	REV
68	1) VIEW PORT TO BE PROVIDED IN FAN SECTIONS & FILTER SECTIONS;						
69	2) LIGHT TO BE PROVIDED IN FAN SECTION & BAG FILTER ACCESS/EMPTY SECTION & SECTION IN DRAWING PORT HOLES;						
70	3) PROVIDE AIR TAPS WITH CAPS FOR INSTALLATION OF MANOMETER / PRESSURE SENSORS:						
71	- FILTER SECTIONS - 4 PER SECTION						
72	- FAN SECTIONS - 2 PER SECTION						
73	4) IN CASE OF ANY DISCREPANCY IN THE VALUES NOTED IN IPS AND IN SYSTEM OR UNIT, VALUE NOTED IN IPS UNIT SHALL GOVERN.						
74	5) MOTOR SHALL BE HIGH EFFICIENCY MOTORS - CLASSIFIED AS IE-3						
75	6) CRUSH CONNECTION SHOULD BE PROVIDED WITH THREADS CONNECTION.						
76	7) MANOMETERIC GAUGES SHALL BE PROVIDED FOR ALL FILTERS SECTIONS & FAN SECTION. RANGE OF MANOMETERIC GAUGE SHALL BE 0.1 TO 1.0 OF WATER COLUMN.						
77	8) ALL AIR SECTIONS SHALL BE MOUNTED ON A GALVANIZED STRUCTURAL BASE, MINIMUM 100MM HIGH, EXTENDING TO THE FULL LENGTH OF THE AIR HANDLING UNIT.						
78	9) FILTER PRESSURE DROP SHALL BE BASED ON MEDIUM PRESSURE DROP OF FILTERS.						
79	10) FAN SELECTION SHALL BE CARRIED OUT AT 10 Hz OR BELOW.						
80	11) DGM LAMP SHALL BEAT DOWNSTREAM OF COOLING COIL.						
81	12) ARI SHALL BE PROVIDED WITH ISOLATOR SWITCH FOR MOTOR. WIRING FROM ISOLATOR SWITCH TO MOTOR SHALL BE IN AIR SUPPLY SCOPE.						
82	13) VFD TO BE PROVIDED BY AIR MANUFACTURER AND SHALL BE UNIT MOUNTED.						
83	14) VFD SHALL BE PROVIDED WITH EMO & RFI FILTERS AS PER EN 50171.						
84	15) VFD SHALL BE PROVIDED WITH DO COVER.						
85	16) VFD SHALL BE COMPATIBLE TO COMMUNICATE WITH BMS. THE COMMUNICATION PROTOCOL SHALL BE BACNET/Modbus.						
86	17) VFD SHALL BE PROVIDED WITH IP43 PROTECTION CLASS.						
87	18) FAN SELECTION SHALL BE CARRIED OUT AT 10 Hz OR BELOW.						
88	19) WIRING (FROM SHIELDED CABLE) FROM VFD TO MOTOR SHALL BE IN AIR SUPPLY SCOPE.						
89	20) VFD IOW RATINGS SHOULD BE SELECTED ONE SIZE HIGHER THAN THE RATED MOTOR POWER TO ACCOUNT FOR DERATING OF THE VFDs DUE TO HIGH AMBIENT TEMPERATURE.						
90	EXPECTED AMBIENT TEMPERATURE IS 45 TO 48 °C.						
91	21) VFD TO BE PROVIDED WITH BUILT-IN PROTECTION AS MENTIONED IN THE SPECIFICATIONS. IF ADDITIONAL PROTECTION (AS PER MANUFACTURER RECOMMENDATION)						
92	IS REQUIRED, KNOWN INDICATE AND PROVIDE DETAILS.						



REVISION	0	1	
STATUS	ISSUED FOR TENDER	ISSUED FOR TENDER	
DATE	22/04/2024	06/08/2024	
CHECKED / SIGN.	DANIAL ABDUL AZIZ	DANIAL ABDUL AZIZ	
APPROVED BY	FAHAD ABDULLAH	FAHAD ABDULLAH	

THE INFORMATION ON THIS DATA SHEET IS CONFIDENTIAL TO FAHAD, NADIA & DEBOLZA (PVT.) LTD. AND SHALL NOT BE DISCLOSED TO A THIRD PARTY WITHOUT PRIOR WRITTEN PERMISSION.

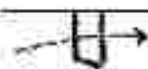


Division

4

**SSGCL HEAD OFFICE BUILDING,
KARACHI**

**BILL OF QUANTITIES OF AIR HANDLING
UNITS**


FND

Fahim, Nanji & deSouza (Pvt.) Ltd.
Consulting Engineers



PRICING PREAMBLES & INSTRUCTIONS

- a) The tenderers are required to fill in all sections of the BOQ, columns including all appendices. Tenderers not containing the above may be considered liable to rejection.
- b) All equipment proposed to be supplied shall be strictly from the "List of Approved Manufacturer" and supported by suitable manufacturer's catalogue/literature etc., with the model selected with make, origin and performance data clearly marked. Also submit quoted equipment capacities at specified conditions. Any deviation shall be clearly highlighted on separate sheets with columns of specified & proposed.
- c) All tenderers are advised to quote strictly as per specifications. Any alternative or deviations from specifications proposed shall be provided in the form of a separate quotation. Any tender not quoting as per specifications may be considered liable to rejection.
- d) All tenders shall be accompanied by one additional copy of the main proposal and the priced BOQ marked 'DUPLICATE', shall be returned duly filled.
- e) All specifications, drawings and other documents supplied by the Employer/Consultant for the purpose of bidding shall be returned with the tender bid with all pages duly stamped & signed. Tenderers unable to bid shall also return complete bid documents on the date of opening of the tender.
- f) The Contractor shall be required to supply everything necessary to provide a complete operational system as specified.
- g) All items mentioned in the Bill of Quantities (BOQ) consist of furnishing all plant, labour, equipment, appliances and materials required for completing the items/works in strict accordance with relevant specifications as described in the Contract Documents and Drawings.
- h) A price is to be entered against each item in the Bill of Quantities whether quantities are entered or not. Items against which no price is entered will be considered as covered by the other items in the Bill of Quantities.
- i) General direction and descriptions of works and materials given in the details, Drawings and Specifications are not necessarily repeated in the Bill of Quantities. Reference is to be made by the tenderer to the details, Specifications and Drawings for their information and the same should be allowed for in their rates.
- j) Generally the following shall be included in the prices submitted with all items herein:
 - Cost of equipment, including the cost of all necessary controls, instrumentation, appliances, etc. required to make the equipment operational, as specified.
 - Cost of specified spares or if not specified then cost of manufacturer recommended spares for 3 years of normal operation.
 - Cost of all assistance needed by the client or installation contractor to install the equipment.
 - Cost of commissioning and testing the equipment as specified.
 - Cost of assistance to client in the clearing and forwarding of equipment.
 - Cost of transportation, lifting, shifting to transport the equipment and all costs in connection therewith including but not limited to, cartage, delivery, unloading, unpacking, returning packing, handling, hoisting to any height, lowering, octrol charges etc. from the manufacturer's works to the project site, as specified.
 - All overheads and profits including Income Tax.
 - Supply of Operation and Maintenance Manuals.



**SSGCL HEAD OFFICE BUILDING, KARACHI
TENDER FOR SUPPLY OF AIR HANDLING UNITS**

**BILL OF QUANTITIES
DATED: AUGUST 08, 2026**

- m) This Bill of Quantities is to be read in conjunction with the Conditions of the Contract, Drawings and Specifications prepared by the Consultants, as being mutually explanatory.
- n) Any discrepancies noticed by the tenderers between the Bill of Quantities, the Intent of the Drawings and Specifications and the scope work, shall be brought to the attention of the Consultant/Engineer prior to submitting the tenders who shall notify their clarifications/decision to all the tenderers. No claims of whatsoever nature shall be admissible during or after the contract period for any misunderstandings, ambiguities due to above, which have not been notified to the Consultant/Engineer prior to submission of his priced tenders.
- o) Where special risks, liabilities and obligations cannot be dealt with as above, then the additional monies required by the Tenderer to cover such special risks, liabilities and obligations are to be separately stated in a letter accompanying the Tender. Tenderer shall list each and every clause number from the Conditions of Contract and the Specification that they wish to price in this way, together with the price in the Tender. Any risk, obligation or liability arising from any clause of the Conditions of the Contract or the Specifications or from the works detailed on the Drawings which has not been specifically priced in the said letter of the Tenderer shall be deemed to be included in the billed prices.
- p) The Contract shall be an Item Rate contract.

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TABLE-1A
BILL OF QUANTITIES FOR SUPPLY OF AIR HANDLING UNITS

S. NO.	DESCRIPTION	QUANTITY	UNIT	COST IN PAK RUPEE		TOTAL
				RATE (PAK RS.)	AMOUNT (PAK RS.)	
1.0	COST OF AIR HANDLING UNIT FOR AHU / 02 (REFER SECTION 23 73 10 & DATA SHEET NO.1890-23 73 10)	1	NO			
1.1	COST OF SPARE PARTS FOR AHU / 02 (REFER DATA SHEET NO.1890-23 73 10)	1	LOT			
2.0	TOTAL PRICE FOR S/M.1					
3.0	ASSISTANCE TO INSTALLATION CONTRACTOR	1	JOB			
4.0	ASSEMBLING OF AIR HANDLING UNITS AT SITE COMPLETE (IN ALL RESPECTS)	1	JOB			
5.0	TESTING & COMMISSIONING OF EQUIPMENTS	1	JOB			
6.0	LIFTING / SHIFTING OF AIR HANDLING UNITS FROM SITE STORES TO BASEMENT	1	JOB			
7.0	FACTORY INSPECTION & ACCEPTANCE TESTING OF AIR HANDLING UNITS (EMPLOYER'S 3 PERSONNEL)	1	JOB			
8.0	TRAINING OF EMPLOYER'S PERSONNEL AT SITE	1	JOB			
9.0	OPERATION & MAINTENANCE MANUALS (5 SETS)	1	NO			
10.0	TOTAL QUOTED PRICE					

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SSGCL HEAD OFFICE BUILDING, KARACHI
TENDER FOR SUPPLY OF AIR HANDLING UNITS

BILL OF QUANTITIES
DATED: AUGUST 06, 2028

TABLE-1B
SOURCE OF SUPPLY & DELIVERY PERIOD OF AIR HANDLING UNITS

S. NO.	DESCRIPTION	MAKE & MODEL NO.	COUNTRY OF ORIGIN	EXPECTED-EX-FACTORY DELIVERY PERIOD	PACKING STANDARD
1.0	AIR HANDLING UNITS (REFER SECTION 23 73 10, DATA SHEET NO.1890-23 73 10)				CONTAINERIZED OR FULL WOODEN BOX FOR SHIPMENT



Fahim, Nanji & deSouza (Pvt.) Ltd.
Consulting Engineers

260806-F 7-1890-TD-H-AHU-BOQ-001_BOQ_AHU's OFM_Ri Pa

**SSGCL HEAD OFFICE BUILDING,
KARACHI**

ANNEXURES OF AIR HANDLING UNITS

FORM NO. CSF-23 73 10	SPECIFICATION CONFORMANCE STATEMENT AIR HANDLING UNITS	FAHIM, NANJI & DESOUZA (PVT.) LTD. CONSULTING ENGINEERS
THIS FORM IS TO BE FILLED AND SUBMITTED BY THE MANUFACTURER/SUPPLIER		
Following points to be noted when filling this Form.		
1) The information provided shall apply to all Air Handling Units conforming to the Specifications given under 'Air Handling Units', Section 23 73 10.		
2) In the case, one or more units have conformance statement different from the other units, separate sheet shall be submitted by the Manufacturer/Supplier and the information shall be clearly indicated.		
3) Separate sheet(s) may be used by the Manufacturer/Supplier to clearly mention the statements if needed.		
PROJECT <u>SSOCI HEAD OFFICE BUILDING, KARACHI</u>		PROJECT NO. <u>1899</u>
SUPPLIER'S NAME _____		
MANUFACTURER _____		
MAKE & MODEL _____		COUNTRY OF ORIGIN _____

S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
1.0	GENERAL	
1.1	Confirm that the capacity requirements for Central Station Air Handling Unit given under EQUIPMENT DATA SHEET are fulfilled.	
1.2	Confirm that the Units have Eurovent or Equivalent Certification as specified or approved by the Consultant.	
1.3	Confirm that the Units are labelled to identify the components and their specifications (eg. Filtergrade, heat transfer rate (Kw), electrical rating (Kw), Flow rate, pressure drop etc.)	
1.4	Confirm that the unit includes: Waterproof drain pan Cooling Coils Heating Coils Empty Benders & Mixing Sections Heat Recovery Sections where specified Necessary Piping Fans Motors Adjustable V-belt drives & belt guards Filters Dampers Removable panels Hinged access doors Combination filter mixing Box Neoprene rubber-in-shoe vibration isolators Spring vibration isolators if indicated in EQUIPMENT DATA SHEET.	
1.5	Confirm that dimensions of AHUs are suitable for installation in the space allocated.	
1.6	Confirm that unit is factory tested.	
2.0	DOUBLE SKINNED CONSTRUCTION	
2.1	Confirm that the casing of frame construction is provided for pressure upto 5" of wc.	
2.2	Confirm that the frame sections & corner connections are made of extruded aluminium.	
2.3	Confirm that the walls, doors & covers are of air-tight double-skinned design and the metal shall have minimum thickness of 0.7mm for inner skin and 1 mm for outer skin.	
2.4	Confirm that synthetic insulation is provided and thickness of insulation is: 40mm (minimum) for internal installation. 60mm (minimum) for exposed installation or as necessary to prevent condensation.	
2.5	Confirm that U-factor for walls is less than 0.15 Btu/h ft ² °F (0.65 W/m ² K).	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
2.8	Confirm that sound insulation for walls is not less than Frequency (Hz) 63 125 250 500 1000 2000 4000 8000 Insertion loss(dB) 11 11 15 25 28 27 27 27	
2.7	Confirm that the sheeting is provided with: Galvanising to a minimum thickness of 20 microns Synthetic epoxy based coating to a thickness of 60 microns	
2.8	Confirm that the doors & inspection covers are made of non-aging rubberised material.	
2.9	Confirm that the Bolts for doors & inspection covers are removable & of galvanized steel.	
2.10	Confirm that thermal barrier at frame corners are provided.	
2.11	Guarantee that no condensation shall occur externally when AHU is exposed to 95°F & 16 gr/ft atmosphere.	
2.12	Confirm that all sections are mounted on a galvanised structural base extending in the full length of the air handling unit.	
2.13	Confirm that the jointing between sections is either by galvanised steel bolts or by galvanised steel studs.	
2.14	Confirm that non-aging rubberised gasket is provided between sections.	
2.15	Confirm that atmospherically exposed AHU's are provided with weather canopy, rain hood & other construction features required for proper operation in open atmosphere.	
2.16	Confirm that access doors shall have 400 mm (min) width, hinged & removable type.	
3.0	VOLUME CONTROL DAMPERS	
3.1	Confirm that Control Dampers shall be of extruded aluminium	
3.2	Confirm that Dampers shall be of opposed blade and multi leaf type and shall have open-close indication sign.	
3.3	Confirm that necessary brackets & linkages shall be available for motorized operation.	
3.4	Confirm that Dampers shall have necessary seals to ensure leakage rate does not exceed 1% of nominal flow at 250 Pa negative pressure.	
4.0	FANS & MOTOR	
4.1	Confirm that Fans shall either be DWDI Centrifugal fans as specified in Section 23 34 18 or Plug Fans as specified in Section 23 34 17, as indicated in EQUIPMENT DATA SHEET.	
4.2	Confirm that Motors shall comply with Specifications given in Section 23 05 13.	
4.3	Confirm that Fans and Motors shall be mounted on mounting base, isolated from casing with spring mounted vibration isolators.	
4.4	Confirm that the fan is capable of discharging the required volume of air against the duct work system resistance plus the resistance through the unit itself.	
4.5	Confirm that the impellers shall be of mild steel or aluminium and shall be capable of running continuously at ten percent in excess of normal speed.	
4.6	Confirm that the impeller wheels are accurately balanced and free from objectionable noise or vibrations.	
4.7	Confirm that the fan blades are provided as indicated in the Specifications.	
4.8	Confirm that Belt Driven Fans shall be fitted with pulleys suitable for V-Belts.	
4.9	Confirm that bearings are self-aligning ball type with accessible grease fittings and are selected for at least 100,000 hours of operation.	
4.10	Confirm that fan shaft is of accurately finished steel.	
4.11	Confirm that the drive is selected for minimum 1.2 times BHP.	
4.12	Confirm that units upto & including 50HP have variable pulleys and suitable for adjustment within + 10% of specified RPM.	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
4.13	Confirm that motor mounting allow quick adjustment using jack screw.	
4.14	Confirm that if free flow plug fans are used then blades are either backward inclined or air foil design.	
4.15	Confirm that for variable Air Volume AHU's with plug fan, inlet of fan is provided with air-flow measuring device as detailed in the specifications.	
5.0	COIL SECTION	
5.1	Confirm that selected coil is suitable for required heat transfer capacity.	
5.2	Confirm that the coil is removable from the unit without dismantling the entire unit.	
5.3	Confirm that eliminators are provided at the coil outlet for preventing carryover of droplets.	
5.4	Confirm that the coil is of: Extended surface, Staggered tube, Flat plate fin type.	
5.5	Confirm that coil arrangement is counter flow & multipass.	
5.6	Confirm that air face velocity on the coil not exceed 550 fpm (2.6 m/s).	
5.7	Confirm that no turbulator is provided inside the coil.	
5.8	Confirm that each coil is leak tested before shipment at 250 psi & 220 F.	
5.9	Confirm about casing: Construction is of galvanized steel Have adequate diameter bolt holes for mounting. Have reinforced flange type coil side plate.	
5.10	Confirm about tubes: Round seamless copper tubes 3/8" or 5/8" outer diameter All joints are brazed with positive bonding of copper tube & aluminium fin collar.	
5.11	Confirm about Fins: Flat aluminium plate with hot drawn collars. Tubes are mechanically expanded into the fins. Maximum fin spacing is 10 fpi.	
5.12	Confirm about Headers: Are of extra heavy seamless copper tubing Intruded tube holes Heavy gauge, die formed copper header and caps. Air vent on top of each Header is provided. Cooling coils are circled for drainability and for service without removing individual plugs from each tube.	
5.13	Confirm about Drain Pan: Double skinned Fabricated of stainless steel Have 1" minimum insulation of polyurethane or closed cell foam Threaded drain outlet from drain pan sealed to the casing with neoprene gasket.	
6.0	FILTERS	
6.1	Confirm that Filters shall be provided in accordance with Section 23.41.10-Air Filters.	
6.2	Confirm that the air-handling unit filter is mounted in an air-tight flat or angular filter box of galvanized steel or aluminium sheet so that they can be removed from either end for replacement and cleaning.	
6.3	Confirm that in air handling unit the filter section is a standard module from the AHU manufacturer.	
6.4	Confirm that manufacturer's performance guarantee certificate and technical bulletins are available from the Air Filter manufacturer and can be shown by the AHU manufacturer when ever required.	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
6.5	Confirm that a multi-blade damper in the plenum of air handling unit having high efficiency filter is installed to balance the air system when the filtering media is new with low initial resistance.	
6.6	Type F-1: Viscous Impingement Filter:	
6.6.1	Confirm for Viscous Impingement Filter (Type-F1)	
	* are min. 2 inch (50mm) thick.	
	* are permanent viscous impingement and washable.	
	* Are all metal type.	
	* Are panel type.	
	* Media is corrugated strips of aluminium screen enclosed in an 18 gauge aluminium frame with flush milled corners.	
	* The corrugation is tapered to form a series of pyramid shaped pockets to prevent dust laden air from drifting through the filter.	
	* Expanded metal is placed on both sides of the filtering media to add strength and for mechanical protection.	
	* Resistance to air flow of a clean filter do not exceed 0.1 inch WG. final pressure drops do not exceed 0.5 inch of WG.	
	* The filter is selected for face velocities not exceeding 500 fpm (2.5 m/s).	
	* filter adhesive is provided in suitable containers in sufficient quantity for one year's requirement, based on operating the system for 10 months on 24 hour basis.	
	* a filter washing tank suitable for washing of the particular size of filter is provided.	
6.7	Type F-2: Replaceable Panel Filter:	
6.7.1	Confirm for replaceable Panel Filter:	
	* This filter consist of 2 inch thick glass fibre mat coated with dust binding adhesive (Viscose) on the filtering media.	
	* The filtering media is fixed into a U-shaped metal frame and a metal grid is provided for additional support.	
	* Filter media is of thick resilient spun fibre structure of variable density and provide synthetic dust arrestance of 80-90% based on (Eurovent 3) ASHRAE 52-76 Test Method.	
	* The filter is supplied with a 50mm deep galvanised steel cell (holding) frame with quick release clamps or hinge type spring clips for positive airtight clamping of the filter.	
	* The filter have a rated face velocity of 500 FPM (2.5 m/s)	
	* Maximum initial resistance is of 0.24 inch of WG (60 Pa) final pressure drop do not exceed 0.72 inch of WG (180 Pa)	
6.8	Type F-3: PERMANENT WASHABLE PANEL FILTER	
6.8.1	Confirm for permanent washable Panel Filter:	
	* Synthetic Filters in permanent washable high velocity using a media composed of high bulk polyester fibers, bonded together with a fire retardant resin to form a high loft blanket of resilient fibers.	
	* The media is soft, light, easy to handle, extremely resilient able to withstand temperature ranges from 40°F to 120°F (4.4°C to 49°C) without deformation or media failure.	
	* Filter is provide dust arrestance of 80-80% based on Eurovent rating EU-3.	
	* washable media is cleanable with only pure water without need of adding detergents.	
	* The filter is selected for face velocities not exceeding 550 FPM (3.0m/s).	
	* The initial resistance is less than 0.1 inch WG (25 Pa).	
6.9	Type F-4: Medium Efficiency Bag Filters (80-85% efficient)	
6.9.1	Confirm for medium efficiency Bag Filters that:	
	* The filter type is extended surface air filter, pocket type having a minimum of 8 pockets	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
	* Filter is with either a retainer device designed to give full top, bottom and side support to each pleat, or	
	* pleats are so designed as not to require a supporting retainer.	
	* Retainer device, if used, is of galvanised wire with PVC coating.	
	* Filter media is ultra-fine fibre-glass specifically manufactured for filtration.	
	* Filters are provided with holding frames lined with sealing gasket with quick-release clamps, for side access application, designed to ensure a positive seal against leakage of unfiltered air.	
	* The filters have a rated filter face velocity of 500 FPM (2.5 m/s).	
	* maximum initial Resistance is 0.24 inch of WG (60 Pa) or 80-85% efficient filters.	
	* final resistance is maximum 1 inch WG (250 Pa) for 80-85% efficient filters.	
	* Filter depth is 22 inches (560mm).	
	* Filter provides Atmospheric Dust-Spot Efficiency as indicated in the EQUIPMENT DATA SHEET.	
	Confirm that:	
	* Maximum initial resistance is 0.3 inch of WG (75 Pa), for 85-90% efficient of 2000.	
	* Final resistance is 1 inch WG (250 Pa), for 85-90% efficient filters.	
9.10	Type F-8: Activated Carbon Filters:	
9.10.1	Confirm for activated Carbon Filters that:	
	* These filters consist of activated carbon filter cells for removal of odour and harmful vapours by adsorption process.	
	* Filter housing is constructed of 16 gauge galvanised steel sheet with internal stiffener bars.	
	* Top and bottom side track inserts is one-piece molded corrosion resistant plastic.	
	* Filter cell frame consist of moisture resistant chip board with neoprene seals.	
	* The activated carbon cells is of wedge formation securely fixed to the frames.	
	* The activated carbon used have cylindrical shaped granules.	
	* Filter is minimum 1 inch (25mm) thick.	
	* Carbon trays is rechargeable and manufactured of high impact plastic with internal separators to prevent settling of the carbon beds.	
	* Two beads of caulking, one on either side of the mounting holes and around the frame work are provided to allow the filters to seal against each other is provided.	
	* The filters have a rated filter velocity of 500 fpm (2.5m/s).	
	* maximum initial resistance is 0.5 inch of WG (125 Pa).	
	* Minimum service life is one year.	
7.6	MIXING BOX	
7.1	Confirm that Mixing Box is furnished for all AHU's where scheduled or shown on drawings.	
7.2	Confirm that Damper arrangement at top & side or bottom & side is of parallel type and set for merging of air streams inside the box.	
7.3	Confirm that Damper blade rods rotate on rust-proof bushing and are at right.	
7.4	Confirm that each box is equipped with duct connection flanges & necessary fastener holes.	
7.5	Confirm that mixing box is manufacturer's standard product.	
7.6	Confirm that all spares are provided as indicated in EQUIPMENT DATA SHEET.	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
5.0	ACCESSORIES	
5.1	Confirm that Flexible Connections are provided between fan discharge and AHU casing outlet in compliance with fire regulations.	
5.2	Confirm that Magnitude Pressure Gauge across each filter set is provided to measure pressure drop across each filter.	
5.3	Confirm that Port Holes are provided in all sections.	
5.4	Confirm that Ultra Violet & Germicidal Irradiation (UVGI) Lamp is provided for all AHUs in the downstream of Cooling Coil.	
5.5	Confirm that bulk head mounted lights are provided in all sections of the AHU.	
5.6	Confirm that Terminal Box is provided on outside of the AHU.	
We hereby certifying that the above information is correct and we shall be held responsible for any deviation from the above data.		
SIGNATURE OF MANUFACTURER/SUPPLIER		CONSULTANT'S REMARKS

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FORM No. QAF - 23 73 10	QUALITY ASSESSMENT FORM AIR HANDLING UNITS	FAHIM, NANJI & DESOUZA (PVT.) LTD. CONSULTING ENGINEERS
THIS FORM IS TO BE FILLED AND SUBMITTED BY THE MANUFACTURER/SUPPLIER		
PROJECT <u>SSOCL HEAD OFFICE BUILDING, KARACHI</u>		PROJECT NO. <u>1899</u>
SUPPLIER'S NAME _____		
MANUFACTURER _____		
MAKE & MODEL _____ COUNTRY OF ORIGIN _____		
S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
1.0	GENERAL	
1.1	Name of the equipment manufacturer.	
1.2	Country of Origin.	
1.3	For how long are these units being manufactured.	
1.4	Is ISO 9000 certification available.	
1.5	No. of projects where equipment is installed in Pakistan.	
1.6	Representative in Pakistan.	
1.7	After sales service arrangements.	
1.8	Conformance to any other standard.	
1.9	Certification by any other body.	
2.0	TECHNICAL	
2.1	Type of Air Handling Units	
2.2	Type of external panels	
2.3	Thickness of panel material	
2.4	Finish of panels	
2.5	Insulation	
2.6	Type of structural system/material	
2.7	Is base plate provided	
2.8	Type of joining system between sections	
2.9	Are ringed access doors provided	
2.10	Are access door provided with universal mounting and do not require any tool for opening the door	
2.11	Source of fans	
2.12	Do fans have certified operating curve	
2.13	What certification do the fans have	
2.14	Source of motor (manufacturer)	
2.15	Is the cooling coil selection based on computer software	
2.16	Do the cooling coil have any certification	
2.17	What is the coil pressure drop at specified conditions (Mention separately for each AHU)	
2.18	What is the coil pressure drop on water side at specified conditions (Mention separately for each AHU)	
2.19	What is total internal pressure drop of Air Handling Unit (Mention separately for each AHU)	



S. NO.	DESCRIPTION	SUPPLIER / MANUFACTURER CONFIRMATION
2.20	Is the fan and motor mounted on a separate base plate and installed isolated in the fan section	
2.21	Is the motor mounting adjustable in two directions	
2.22	Is there a thermal barrier provided to prevent condensation at structural members	
2.23	Are the cavities in the structural members insulated	
2.24	What kind of gaskets are used and what material on the panels	
2.25	What kind of gasket are used and what material between the sections	
2.26	To what positive pressure are the units air tight	
2.27	To what negative pressure are the units air tight	
2.28	What type of insulation is used, Thickness, thermal conductivity	
2.29	Is the fan discharge isolated from the fan casing	
2.30	What arrangement is there to mount Panel filter? What is the leakage rate	
2.31	What arrangement is there to mount Bag filter? What is the leakage rate	
2.32	What kind of Dampers are installed in the AHU? What is there leakage rate	
2.33	What is the material for the drain tray	
2.34	How much is the insulation on the drain tray	
2.35	Is Ultra Violet & Germicidal Irradiation (UVGI) Lamp provided for all AHUs at the downstream of cooling coil?	
2.36	Does the drain tray conform to current indoor air quality standard	
We hereby certifying that the above information is correct and we shall be held responsible for any deviation from the above data.		
SIGNATURE OF MANUFACTURER/SUPPLIER		CONSULTANT'S REMARKS



SSTW-05

Ref No _____

Dated _____

M/s _____

SNTN _____

Address _____

NOTICE UNDER RULE 3(1) OF THE SINDH SALES TAX SPECIAL PROCEDURE (WITHHOLDING) RULES, 2011.

Dear Sir,

Kindly note that we are a withholding agent under the Sindh Sales Tax Special Procedure (Withholding) Rules, 2011, and that we shall withhold and deduct the prescribed amounts of Sindh sales tax against your tax invoices in relation to the services provided or rendered by you to us. We hold NTN/FTN

2. We undertake to deposit the withheld/deducted amounts of Sindh sales tax in the Sindh Government's head of account "B-02384" against a SRB-prescribed PSID/Challan (SST-04 or SSTW-04) in the manner prescribed under the aforesaid Sindh Sales Tax Special Procedure (Withholding) Rules, 2011, and we shall provide you a certificate of deduction-cum-deposit in terms of rule 3(9) thereof.

Signature _____

Name _____

CNIC _____

Designation _____

Date _____

Official seal _____



Form of Bid-Securing Declaration

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

Date: [date (as day, month and year)]

No.: [number of Bidding process]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [complete name of Procuring Agency]

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the bid conditions, because we:

- (a) have withdrawn our Bid during the period of Bid validity specified in the Letter of Bid; or
- (b) having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid validity; (i) fail or refuse to sign the Contract; or (ii) fail or refuse to furnish the Performance Security (or guarantee), if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder: _____

Name of the person duly authorized to sign the Bid on behalf of the Bidder: _____

Title of the person signing the Bid: _____

Signature of the person named above: _____

Date signed: _____

* In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

** Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the Bid.]



SUI SOUTHERN GAS COMPANY LIMITED

UNDERTAKING OF COMPLIANCE WITH INTEGRATED MANAGEMENT SYSTEM (IMS) MANUAL AND BLACKLISTING MECHANISM

I, _____ [Supplier's Authorized Representative
Full Name], of _____ [Supplier Company Name], with
principal _____ office _____ located _____ at
_____ [Full
Address], do hereby solemnly affirm and declare as follows:

1. That I am the duly authorized representative of _____ [Supplier Company Name], and have the legal authority to make this declaration on behalf of the company.
2. That I confirm having accessed, read, and fully understood the Integrated Management System (IMS) Manual provided by Sui Southern Gas Company Limited (SSGC), available at the official website:
<https://www.ssgc.com.pk/web/wp-content/uploads/2025/06/IMS-Manual-1.pdf>
3. That _____ [Supplier Company Name] agrees to comply fully with all the policies, procedures, and responsibilities outlined in the IMS Manual, and will ensure that all relevant employees, contractors, and agents are made aware of and comply with the same.
4. That _____ [Supplier Company Name] acknowledges that failure to comply with the IMS Manual may result in corrective action, including but not limited to financial penalties as per SSGC policy and suspension or termination of business with Sui Southern Gas Company Limited (SSGC).
5. That the bidder has also read, understood, and accepted the Blacklisting Mechanism of Sui Southern Gas Company Limited (SSGC), available at:
http://www.ssgc.com.pk/web/wp-content/uploads/2024/09/blacklisting_mechanism_2024.pdf
6. Any type of violation of the tender terms and non-performance will result in the enforcement of the Blacklisting Mechanism, which will be dealt with in accordance with the Blacklisting Rules/Mechanism.
7. This affidavit is made in good faith and for the purpose of affirming our commitment to health, safety, environmental standards, and compliance with the Integrated Management System (IMS) Manual and the Blacklisting Mechanism of Sui Southern Gas Company Limited (SSGC), as well as all other applicable policies and procedures of SSGC.

Signed at _____ [City] on this _____ day of _____, 20__.

Signature: _____
Name: _____
Designation: _____
Company Name: _____
Contact Details: _____

(Company Stamp / Seal Mandatory)

Witnessed by:

Signature of Witness: _____
Name of Witness: _____
Date: _____

Signature of Witness: _____
Name of Witness: _____
Date: _____





**Sul Southern Gas
Company Limited**

Procurement Department

Standard Advisory to all Bidders

SUB: Sindh Sales Tax Withholding On Services Payment

(Effective from 1 July 2024)

Dear Sir,

Background

Please be informed that:

1. Uptil February 2024, SSGC deducted 20% of Sindh Sales Tax amount from Invoice value payable to a Vendor for services rendered in Sindh & deposit the same with Sindh Revenue Board, while remaining 80% is deposited by the Vendor themselves.
2. From March 2024 – June 2024, SSGC deducted 80% of Sindh Sales Tax amount from Invoice value payable to a Vendor for services rendered in Sindh & deposit the same with Sindh Revenue Board, while remaining 20% is deposited by the Vendor themselves.

Amendment in Law

Sindh Revenue Board (SRB) has amended Withholding Rules thereby requiring SSGC to deduct 20% of sales tax amount from Invoice Value.

Revised Procedure for Sindh Sales Tax Withholding

In order to ensure implementation of above amendment, following process is being implemented 01. July 2024:

- 1) 80% Sales Tax to continue to be withheld on "Past" Invoices only (where Vendor has already deposited 20% Sales Tax in Government treasury provides evidence thereof).
- 2) 20% Sales Tax will be deducted on Current and future Invoices (while 80% will be deposited by vendor directly with SRB)

It is needless to mention that only Sindh Withholding Rules have been amended while there is no change in other Rules (Income tax withholding Balochistan Sales Tax withholding etc.)



سویا سٹورن گیس کمپنی لمیٹڈ
پروکیورمنٹ ٹیڈر ٹیمٹ

تمام ٹیڈیکٹاروں کے لئے معیاری ایڈوائزری

خدمات کی ادائیگی پر سندھ سیلز ٹیکس
(۱ جولائی ۲۰۲۳ سے نافذ العمل)

تیسرے منظر

مطلع کیا جائے کہ:

1. فروری 2024 تک، SSGC نے سندھ میں فراہم کی جانے والی خدمات کے لیے وینڈرز کی انوائس ویلیو سے سندھ سیلز ٹیکس کی رقم کا 20% کاٹ لیا ہے اور اسے سندھ ریونیو بورڈ کے پاس جمع کرایا ہے، جبکہ وینڈرز بقیہ 80% خود جمع کراتے ہیں۔

2. مارچ 2024 سے جون 2024 تک، SSGC نے سندھ میں فراہم کی جانے والی خدمات کے لیے وینڈرز کی انوائس ویلیو سے سندھ سیلز ٹیکس کی رقم کا 80% کاٹ لیا ہے اور اسے سندھ ریونیو بورڈ کے پاس جمع کرایا ہے، جبکہ بقیہ 20% وینڈرز خود جمع کراتے ہیں۔

قانون میں ترمیم

سندھ ریونیو بورڈ (SRB) نے ود ہولڈنگ رولز میں ترمیم کی ہے جس کے تحت SSGC کو انوائس ویلیو سے سیلز ٹیکس کی رقم کا 20% کٹوتی کرنا ہوگی۔

سندھ سیلز ٹیکس ود ہولڈنگ کا نظر ثانی شدہ طریقہ کار

مندرجہ بالا ترمیم کے نفاذ کو یقینی بنانے کے لیے، 01 جولائی 2024 سے درج ذیل عمل کو نافذ کیا جا رہا ہے:

(1) 80% سیلز ٹیکس صرف 'ماضی' انوائسز پر کٹوتی جاری رہے گی (جہاں وینڈر نے پہلے ہی سرکاری خزانے میں 20% سیلز ٹیکس جمع کرایا ہے اس کا ثبوت فراہم کرتا ہے)۔

(2) 20% سیلز ٹیکس موجودہ اور مستقبل کے انوائسز پر کاٹا جائے گا (جبکہ 80% وینڈر براہ راست SRB کے ساتھ جمع کرائے گا)۔

یہ واضح رہے کہ صرف سندھ ود ہولڈنگ رولز وائٹ میں ترمیم کی گئی ہے دیگر رولز (انکم ٹیکس ود ہولڈنگ بلوچستان سیلز ٹیکس ود ہولڈنگ وغیرہ) میں کوئی تبدیلی نہیں کی گئی ہے۔

THE GAZETTE OF PAKISTAN, EXTRA, MAY 14, 2022 (PART II)

ANNEXURE I

Declaration of Ultimate Beneficial Owners Information for Public Procurement Contracts.

1. Name
2. Father's Name/Spouse's Name
3. CNIC / NICOP/Passport No.
4. Nationality
5. Residential address
6. Email address
7. Date on which shareholding, control or interest acquired in the business.
8. In case of indirect shareholding, control or interest being exercised through intermediary companies, states or other legal persons or legal arrangements in the chain of ownership or control, following additional particulars to be provided:

1	2	3	4	5	6	7	8	9	10
Name	Legal form (Company/Limited Liability Partnership /Association of Persons/Single Member Company/Partnership Firm/Trusted/Any other Individual, Body Corporate (to be Specified)	State of Incorporation / Registration	Name of Registering Authority	Thakran Address	Country	Email Address	Percentage of shareholding control or interest of 30 in the Legal Person or Legal Arrangement	Percentage of shareholding, Control or Interest of Legal Person or Legal Arrangement in the Company	Identity of Natural Person who Ultimately owns or Controls the Legal Person or Arrangement

9. Information about the Board of Directors (Details shall be provided regarding number of shares in the capital of the company as set capitals respective names).



